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Revisiting a remedy against the chain of unkindness

Wendelin Schnedler and Nina Lucia Stephan

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Wendelin Schnedler*

Nina Lucia Stephan†

Paderborn University

Paderborn University

Center for Market and Public Organisation (CMPO)

Institute for the Study of Labor (IZA)

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Abstract

Previous experimental studies show that subjects who receive little in a dictator game, pass on less to a third person when they become dictators themselves. However, when subjects can write a letter to their dictator, they act more kindly. The prevailing explanation for this phenomenon is that letter writing helps them to emotionally ‘close the case’. Alternatively, being asked to write a letter may be seen as a signal that something is wrong with the dictator’s behavior and lead to less imitation of this behavior.

We examine whether letter writing also helps to increase kindness when the second explanation is excluded by design. In our experiment, subjects face choices in different domains, so that imitation is not possible. Instead of deciding how to split money, the first decision consists in assigning an annoying work task (the unkind option) instead of an enjoyable one. We find that letter writing nevertheless increases giving in a subsequent dictator game, confirming the validity of letter writing as a remedy against the chain of unkindness.

Keywords: experimental economics, chain of unkindness, emotional closure, cooling down

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*wendelin.schnedler@upb.de

†nina.stephan@upb.de

1 Introduction

People who have been treated unkindly may treat others unkindly. Consider a manager whose supervisor just ordered her to work overtime. Perhaps she will afterwards have to pull herself together to avoid hurling abuse at a colleague. Passing on of unkind behavior may create a bad atmosphere and ultimately reduce productivity. Several experiments document that unkind behavior gets passed on (Diekmann, 2004; Gray et al., 2014; Leimgruber et al., 2014), a phenomenon also referred to as negative generalized reciprocity (Nowak and Sigmund, 2005; Stanca, 2009).

In a recent contribution, Strang et al. (2016) suggest a remedy against the chain of unkindness: after having received little money from a subject A, the recipients of the unkind behavior, say B, are allowed to write a letter to A. These ‘letter writers’ later pass on much more of a common pot of money to an innocent third subject, say C, than recipients of unkind behavior who could not write a letter. This suggests that letter writing helps subjects to ‘close the case’ and separate the person who harmed them (A) from the person who they are about to harm (C). In other words: letter writing helps them cooling down.

In the experimental setting, A and B both have to decide on how much money to share with another person. In contrast to that, real life examples of chains of unkindness often involve decisions that are not of the same type. The manager can decide whether to hurl abuse and her supervisor whether to impose overtime work. If letter writing actually ‘closes the case’, it should work even if the decisions of A and B are of a different type.

There is, however, a plausible reason why letter writing might only have the effect observed by Strang et al. (2016) when decisions are of the same type. Suppose that B has the intention to imitate A. Being given the chance to write a letter to A may change B’s intention to imitate A. In particular, being given the opportunity to write a letter may be seen by B as an indication that A’s behavior was not adequate. As a result, B may be less likely to imitate A. Imitation would then be less likely for subjects who have the opportunity to write a letter than for those who do not. Accordingly, this group would pass on more money, which would explain the outcome observed by Strang et al. (2016). This argument only applies as long as A and B face the same type of decision. Otherwise, the opportunity to write a letter cannot signal to B that A should not be imitated and it would be wrong to conclude that letter writing helps against the chain of unkindness.

In this paper, we report on an experiment that re-examines whether letter writing interrupts the chain of unkindness by considering a setting where A and B’s decisions are taken in very different domains. We find that nevertheless letter writing has the intended effect. From 10€ received, the amount B passes on to C significantly increases from 2.12€ to 2.76€ for subjects (B) who have the opportunity to first write a letter to A. The size of the effect is similar to that found by (Strang et al., 2016) when there is not change of the decision domain.

The key innovation in our experimental design is that we prevent B from imitating A by confronting A and B with choices from very different domains. The difference is very salient as A’s choice has non-monetary and B’s choice monetary effects. More precisely, A decides whether B is allowed to watch funny movies or has to engage in an annoying encryption task instead. We ensure that subjects in the role of A assign enough subjects in the role of B to the annoying task, by paying them 10€ whenever they assign half of the

subjects to the annoying task. The decision of B, on the other hand, is the dictator game decision also used by Strang et al.: subjects B can decide how much of a sum of 10 € they want to allocate to a participant of some other future experiment (subject C).

There is vast evidence from a variety of disciplines, such as psychology (Bertenthal et al., 2006; Delfino et al., 2016; Heyes, 2011; Leighton et al., 2010), neuroscience and biology (Byrne and Russon, 1998; Bien et al., 2009), or economics (Alós-Ferrer and Schlag, 2009; Apesteguia et al., 2007; Conlisk, 1980; Day, 1984; Matthey, 2010; Pingle, 1995), showing that imitation is common. It is thus very plausible that subjects try to imitate the dictator rather than to pass on unkind behavior.

Here, we exploit that the passing on of unkindness does not have to occur within one domain, to investigate the passing on of unkindness, or generalized negative reciprocity, in a setting where imitation cannot play a role. To the best of our knowledge, this distinguishes our work not only from Strang et al. (2016), but also from any other experimental studies on the chain of unkindness or negative generalized reciprocity, where imitation is generally possible, such as Ben-Ner et al. (2004) or Diekmann (2004). In theoretical models of reciprocity, such as Gouldner (1960) or more recently Falk and Fischbacher (2006) reciprocity is the rewarding of a kind or punishing of an unkind action. Nothing suggests that the rewarding or punishing needs to take place in the same domain as the initial kind or unkind action. In fact, existing literature has called for using more realistic decision situations, which our design is aiming at, and even turned to study the behavior in the field and within non-monetary domains (Gray et al., 2014; Mujcic and Leibbrandt, 2017; van Apeldoorn and Schram, 2016).

We thus contribute experimental evidence to the following central question: Does letting an actor write a letter to the initial unkind actor remedy a chain of unkindness that is crossing domains? More specifically, we will show that when given the chance to write a letter, subjects B pass on significantly more money to subject C, even in a setting with a domain change.

As the passing on of unkindness is a very general concept, frequently observed in anyone's real life, existing literature on the topic is not restricted to any specific group of subjects (Ben-Ner et al., 2004; Diekmann, 2004; Gray et al., 2014; Herne et al., 2013; Leimgruber et al., 2014; Mujcic and Leibbrandt, 2017; Stanca, 2009). In contrast to most literature, Strang et al. (2016) solely investigate behavior of female subjects. To underline the robustness of our results, we thus investigate whether the overall effect we find is the same within the subgroup of our female subjects. Confirming the robustness of our overall results, we do not find a gender specific effect of letter writing on the passing on of money.

2 Method

Figure 1: Experimental Design: Participants were assigned (by the boss) to participate in an annoying, instead of an enjoyable task. Next, they went through a waiting time (control group) or letter writing (treatment group) task. Subsequently, they made allocations to a third person as dictators in a dictator game.

All participants within the same treatment receive the same set of instructions. After checking for their understanding, roles are assigned. In each session, one participant is randomly chosen as the boss. The remaining participants are randomly put into pairs, where one is called player X and one player Y. Initially X and Y are assigned to an enjoyable default task. The boss, however, can receive a payment of 10 € if he assigns half of the participants to an annoying task and exposes them to constant reminders to hurry up instead of letting them do the enjoyable default task. If deciding to do so,¹, the boss has to determine whom in each pair should carry out the annoying task: X or Y.

As a result, participants are either assigned to carry out an enjoyable task (as raters) or an annoying task (as encrypters), depending solely on the boss's decision. Without the existence of such an alternative default task, an assignment to the encryption task would not be perceived as unkind. This is why an alternative and relatively more enjoyable task, as well as a real possibility to be assigned to it, must exist, even though for our analysis we only need the data from the encrypters' decisions. All encrypters are aware that the boss is responsible for the task assignment and that the other half of the participants are assigned to a more enjoyable task. The tasks, both rewarded by a small, symbolic fixed payment, start right thereafter during a work phase, and are described in the following.

While the raters are watching and rating funny videos, the encrypters have to encrypt a combination of numbers into a random combination of letters (password). Entering the correct password on the first screen leads to a new encryption task on the next screen. According to Benndorf et al. (2018) encrypting of this type only allows for minimal learning, which reduces the chances that participants might enjoy their work as they get

¹ In all session, the boss did indeed decide to annoy subjects in in order to earn the 10 €.

better at it. Moreover, the encrypters are repeatedly reminded to speed up by a reminder box popping up and blocking their screens, which leads to their latest password entry being deleted. The work phase is controlled to be of equal length in each session.

The next part of the experiment depends on the treatment. In the letter writing treatment, subjects are given three minutes to write a letter to the boss. This letter is later by us and handed to the boss after the experiment. In the control treatment, subjects simply wait for three minutes.

Finally, encrypters and raters act as dictators in a dictator game, splitting up 10 € between themselves and a participant of a future, unrelated experiment. Dictators know that none of the participants of the current experiment will be invited to participate in this future experiment and that this experiment will also take place in the BaER-Lab at Paderborn University.²

In order to check whether the task assignment worked as intended, as well as to survey how participants' emotions evolve throughout the experiment and within the different treatments, we measure the participants' subjective level of happiness. This is done by letting participants rate their own happiness on a 9-point Likert scale, using *Self-Assessment Manikins* as described by Bradley and Lang (1994). Happiness is measured at the beginning of the experiment, before assigning tasks (baseline happiness), as well as after the work phase (happiness 1), after the letter writing or waiting (happiness 2) and after the dictator game (happiness 3).

In line with Strang et al. (2016), we expect participants in the letter writing treatment to allocate more to a third person in a subsequent dictator game. If the reason for the letter writing effect in Strang et al.'s experiment is that it signals subjects not to imitate, however, we would expect that the letter writing should not affect allocations.

3 Results

This study was programmed using z-Tree (Fischbacher, 2007) and carried out at the Business and Economics Research Laboratory (BaER-Lab) of the University of Paderborn, Germany, in May and June 2017. Participants were recruited at the University, using the software ORSEE (Greiner, 2015). In total, 154 subjects were assigned to encrypt (Table 1).

	Total	Control Treatment	Letter Writing Treatment
observations	154	99	55
average age (min:18; max:35)	21.98	23.21	21.98
female participants (%)	67.53	64.65	72.73

Table 1: Descriptive statistics show a successful randomization.

²As announced in the instructions, all money from the 308 dictators (including raters) was passed on to participants who did not take part in the present experiment. The sessions, where these receivers did participate, took place in July and September 2017, as part of different, unrelated experiments.

Figure 2:

Figure 2: The mean values of encryptions' baseline happiness and happiness 1 confirm that reported happiness is significantly decreased after the work phase, and that the chosen task is actually annoying. (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; error bars indicate standard error of mean)

Figure 2 shows that the encryption task actually reduced happiness. In both, the control group (waiting time) and the treatment group (letter writing), the median happiness ratings drop from 6 to 4 (on a 1-9 scale) as shown in Table 2. A Wilcoxon-signed-rank-test confirms that happiness ratings before and after the encryption task differ significantly ($p < 0.01$, $z = -7.954$). Even though the encryption task does not go along with a monetary loss, happiness is affected in the same way and as strongly as in Strang et al. (2016). In their experiment, where the first unkind action consisted in receiving an unfairly low amount of money from a dictator, median happiness also decreased from 6 to 4. This confirms that the unkind experience in the non-monetary domain in our setup, is comparable to the unkind experience in the monetary domain in the setup of Strang et al. (2016).

	Total	Control	Letter Writing
baseline happiness	5.760 [6]	5.788 [6]	5.709 [6]
happiness 1	4.201 [4]	4.141 [4]	4.309 [4]
allocations	2.352 [2.5]	2.121 [2]	2.764 [3]

Table 2: Mean happiness and allocation (median values in brackets). In both groups, encryptions' happiness is affected negatively by the work phase. Neither baseline happiness nor happiness 1 levels differ significantly between the groups. However, allocations are larger in the letter writing group.

3.1 Main Result

Figure 3:

Figure 3: Averages show that allocations are higher in the letter writing group, and hence, letter writing increases allocations. (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; error bars indicate standard error of mean)

Next, we compare the effect of letter writing (treatment group) to that of waiting (control group). As shown in Figure 3, allocations are significantly higher in the treatment than in the control group (treatment group mean 2.764, median 3, control group mean 2.121, median 2). In other words, and in line with previous literature, letting annoyed participants write a letter to a responsible person makes them give more in a subsequent dictator game (p -value < 0.05), even if the annoying task is non-monetary.

Result 1: *Subjects who were assigned to the annoying encryption task give significantly more to an independent third subject if they had the opportunity to first write a letter.*

3.2 Robustness of Results: Subgroup of Female Participants

In their experiment Strang et al. (2016) restrict participation to females, arguing that women typically have stronger emotional reactions. This is, for example, suggested by Ben-Ner et al. (2004); Bradley et al. (2001); Grossman and Wood (1993). Our experiment and results so far are not restricted to women but include data from both male and female subjects. The present section will show that our central findings are not gender specific. By looking at the subgroup of female subjects, we also enable direct comparison with Strang et al. (2016).

As shown in Table 3, the results from the subgroup of female participants are very close to the overall results (Table 2). The encryption task decreases median levels of happiness from 6 to 4 (significant difference with p -value < 0.01), just as in the complete sample, and just as reported by Strang et al. (2016). Regarding the effect of the remedy of letting participants write a letter to the boss, the results are again similar to those of the complete sample. In direct comparison, allocations by female dictators are slightly higher. More importantly though, the effect of allocations being larger in the treatment group is

	Total	Control Treatment	Letter Writing Treatment
baseline happiness	5.817 [6]	5.875 [6]	5.725 [6]
happiness 1	4.115 [4]	3.969 [4]	4.350 [4]
allocation	2.519 [3]	2.219 [2]	3.000 [3]

Table 3: Average choices by female encrypters are displayed in the same way as in Table 2. Evidently, also among females, allocations are higher in the letter writing group, confirming the treatment effect.

confirmed within the group of female subjects (p-value <0.05, $z = -2.079$). This result is also in line with Strang et al., 2016, p. 4, who find significantly larger allocations after letter writing (median 4.5) compared to waiting time (median 3). We conclude:

Result 2: *The positive effect of letting annoyed subjects write a letter, to increase their willingness to give in a subsequent dictator game also holds for female subjects.*

Figure 4: Allocation by Dictators

Figure 5: Allocation by Female Dictators

Figure 4 & 5: C.d.f.s of dictators' allocations for the entire sample and subsample of females are displayed. Both figures show the positive effect of letter writing on allocations.

To visualize the results, Figures 4 and 5 show cumulative distribution functions (c.d.f.s) of the dictators' allocations to the third, previously uninvolved persons. As the c.d.f.s show, allocations are typically higher in the treatment group, that is in those cases where dictators have the chance to write a letter to the responsible boss, compared to the control group. This is shown for both, the entire sample and the subsample of female participants, confirming both, Result 1 and Result 2. As a side note it can be added that high allocations seem more likely within the subgroup of female dictators, irrespective of the treatment.

3.3 Ancillary Findings and Discussion

We have established the overall effect of letter writing on the passing on of unkindness across domains. Letter writing is confirmed to have the intended effect, which is in line with the 'closing the case' explanation. Yet, there is one caveat. As Strang et al. (2016) explain, letter writing is effective since it neutralizes the previously experienced negative emotional shock (closing the case), which in turn leads to higher allocations in a subsequent dictator game with a third person. In line with that explanation letter writing should lead to a stronger increase in happiness ratings than waiting. This, however, is not what we find. Instead, our data show that both letter writing and waiting time lead to slightly higher levels of happiness, with no evident difference in the change in happiness ratings between the two groups. In both groups, people just become slightly less emotional. This is the case for both male and female subjects.

Result 3: *The regulating measure of letter writing, compared to waiting time, has no significant effect on happiness ratings.*

Figure 6:

Figure 6: The change in happiness throughout the treatment phase shows that waiting time has almost no effect (increases of less than 0.5 units on the 9-point Likert scale) on happiness, and neither does letter writing.

Figure 6 illustrates this result, showing the change in happiness ratings throughout the treatment phase. There is no significant difference between the effect of letter writing and waiting time. Moreover, the change in happiness is on average less than 0.5 points, and thus very small compared to the change from median happiness of 6 to 4 points after the annoying task. Hence, unlike expected, letter writing does not bring happiness back towards its baseline level. As the change in happiness, shown in Figure 6, is so small, it can actually not be distinguished from emotions simply cooling off over time (Oechssler et al., 2015).

Let us consider this puzzle again: Experiencing waiting time or the letter writing treatment both leads to slightly higher happiness with no evident difference in the change in happiness between the two groups. Writing a letter and spending the same time waiting both makes people just slightly less emotional, if at all. Happiness ratings can thus not

explain significant differences in subsequent dictator game allocations. Looking for an explanation, we will now consider the content of the letters, presenting results of a content element analysis as performed by Strang et al. (2016). Following their example, the letters were scanned for five specific content elements. For the subsequent analysis we consider correlations of the content elements and our variables of interest.

We observe that content elements related to emotional aspects like *expression of emotions* (0.2325; $p < 0.05$), *unfairness criticism* (0.3579; $p < 0.01$), and *questioning of motive* (0.3742; $p < 0.01$) are significantly and positively correlated with a change in happiness, while there is no significant correlation with either *understanding* or *suggestion for usage*. Thus, those participants who make use of the letter to express their emotions, criticize the unfair behavior of the boss, or question his motive, are likely the same as those whose happiness ratings increase through letter writing. In contrast, these participants are rarely the same as those on whom the letter writing treatment has the effect of making them more willing to give. This is supported by the fact that the content element *expression of emotions*, positively correlated with the change in happiness as stated above, is at the same time negatively correlated with dictator allocations (-0.2048^* ; $p < 0.05$). Moreover, those content elements showing the strongest correlation with a change in happiness are not correlated with dictator allocations at all. The missing correlation between changes in happiness and dictator allocations is also surprising, considering literature showing an effect of induced mood on dictator allocations or similar games (Capra, 2004; Kirchsteiger et al., 2006; Tan and Forgas, 2010). In contrast, our observations suggest that while some participants, by choosing certain content elements, use the letters to improve their happiness, there is another subgroup of participants for whom the letter writing treatment has the effect of increasing their willingness to give in a subsequent dictator game. With this puzzle, it is at this point not possible to draw final conclusions on the channel through which the letter writing treatment works.

4 Conclusion

We designed a controlled laboratory experiment where participants are treated badly by another participant, the boss, who assigns them an annoying effort demanding task. Previous research suggests that letting these participants write a letter to the boss on average leads to higher giving to an uninvolved third participant. Letter writing is thus proposed as a way to stop the passing on of unkindness, however, from previous literature it cannot be concluded that whether this is actually the case. With a novel experimental design, we confirm that letter writing has the intended effect. In order to do so, in our experiment the decision of the annoyed participants is in a completely different domain than that of the boss. Thereby, we not only contribute a new method for testing remedies against chains of unkindness, but also for investigating chains of unkindness in general, distinguishing them from chains of imitating the predecessor. Moreover, our results allow us to confirm that the letter writing effect is robust to the gender of participants.

However, there remains doubt with regard to the channel at work. Our results show that letter writing is not more successful in bringing subjectively reported levels of happiness back to their initial pre-shock levels than simply waiting. Moreover, expressing emotions in the letter, which in theory should help to release them and hence lead to increased

willingness to give, is negatively correlated with the amount of money passed on to the third participant. All of this suggests that although letter writing increases giving, the reason does not seem to be emotional regulation, which calls for future research into the matter.

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