

THE LINK BETWEEN PROSOCIAL (GIVING) BEHAVIOURS AND SOCIAL COHESION

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EL VÍNCULO ENTRE CONDUCTAS PROSOCIALES (DE DONACIÓN) Y LA COHESIÓN SOCIAL

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ABSTRACT

A controlled experiment establishes that differences in relational proximity can evoke or suppress a willingness to give to an unrelated cause. Four treatment groups underwent the same set of exercises but two in a closer relational environment and two in a more distant relational environment. Half of the subjects in each relational environment further received an unannounced doubling of pay. On exit, all participants had the option to give to charity. The experiment showed that the charitable giving was driven by relational factors, not by pay. We can learn that prosocial (pro-giving) inclinations interact with the wider social environment, and that these complex relational parameters may be evaluated by easy-to-measure giving patterns.

KEYWORDS

charity; endowment; experiment; giving; prosocial; social cohesion.

RESUMEN

Mediante un experimento controlado se establece que las diferencias en proximidad relacional puede evocar o suprimir una disposición a dar a una causa sin relación. Cuatro grupos de tratamiento se sometieron al mismo conjunto de ejercicios, pero dos en un ambiente relacional más cercano y dos en un entorno relacional más distante. La mitad de los sujetos en cada ambiente relacional recibió un doble pago sin previo aviso. De salida, todos los participantes tuvieron la opción de dar a la caridad. El experimento mostró que la donación caritativa estuvo guiada por factores relacionales y no por el pago. Podemos aprender que las inclinaciones pro-sociales (pro-donación) interactúan con el ambiente social más amplio, y que estos complejos parámetros relacionales pudieran ser evaluados por patrones de donaciones fáciles de medir.

PALABRAS CLAVE

caridad, cohesión social, dotación, donar, experimento, prosocial.

1. INTRODUCTION

This lab experiment tests whether adjustments to the social environment affect an individual's propensity to give to an unrelated cause. The quality of interpersonal relationships is complex and hard to evaluate (Sobel 2002; Guiso *et al.* 2010; Quibria 2003), but if we find that the aggregate effect of people being drawn together in a positive way translates directly into an individual's decision to give, then giving behaviours may offer us a tangible way of monitoring the qualities of those relationships.

Giving is a prosocial behaviour form in that a person chooses to allocate her resources in a pro-collaborative manner. The drivers of giving may include other-centred values and inequality aversion, but giving also depends on what other people are doing and on the state of the wider social environment: the motivation of reciprocal returns from giving, concerns about reputation if a prosocial response is not forthcoming, the expectation that others are 'doing their bit' as well, and the cooperative norms signalled by others (Kolm and Ythier 2006; Konow 2010; Gui and Sugden 2010). All these social influences are important not just to giving, but are indicative of social norms and trust levels that are helpful to any collaborative effort. Thus, 'giving' may be representative of a much wider range of prosocial behaviours. These prosocial behaviours facilitate collaboration, whilst antisocial behaviours hinder it (Adhikari and Goldey 2010).

Prosocial behaviours not only signal trustworthiness then, they are also dependent on trust in others. There may be an interaction going on between these two: a closer, more trustworthy social environment stimulating individuals to put more weight on other people's interests or communal interests over their own private interests, and then these prosocial responses feeding back to sustain and improve the quality of the wider social environment. The prosocial character of this interaction between the individual and the wider social environment may be possible to evaluate by the existence of giving behaviours.

The idea of an interaction between individuals and their social environment being involved in the way that social structures change over time is not new; see for example Berger and Luckman (1966) or Giddens (1984). Dasgupta (2009) also describes trust formation in this manner, highlighting how individual actions affect as well as respond to wider social norms. Krishna and Uphoff (2002) distinguish between 'structural' and 'cognitive' social capital, and discuss how visible relational structures interact with individual preferences and perceptions to determine the development of *future* relational structures. This paper adds to the literature by deliberately setting out to test the link between a closer relational environment and individual prosocial preferences (manifest in giving) in a lab experiment.

Previous lab experiments suggest that giving does respond to the immediate social context (e.g. Hoffman *et al.* 1996; Hornstein *et al.* 1975; Holloway *et al.* 1977; Ross and Ward 1996; DeScioli and Krishna 2013). And over time, Kosse *et al.* (2016) found that offering children one-on-one time for one year had a significant and persistent impact on the prosocial manner in which those children then went on to treat others. Our experiment complements these findings and is novel in several ways. Firstly, instead of evoking one social context or another in the minds of the participants by the wording of the instructions, we *created* two different social environments by manipulating the way people were allowed to interact with their partners, and then checked whether this had an immediate impact on giving. Secondly, giving was not framed as the main decision of the game. Instead it added in at the end of other tasks, and was directed towards a third party. And thirdly, we tested for social and materialistic drivers of giving in the same experiment, which allows us extra insight into what motivates giving. The impact of material incentives on giving was tested by treating half of the subjects in each relational environment to an unexpected doubling in pay. Thus the experiment comprised four groups, each containing 10 participants, who were treated as follows:

- Group 1: Close relational environment without windfall payment;
- Group 2: Close relational environment with windfall payment;
- Group 3: Distant relational environment without windfall payment;
- Group 4: Distant relational environment with windfall payment.

After this treatment we measured the effect that these differences had on mood, on desire to meet one's partner again, and on levels of giving to charity at point of payment and exit from the experiment.

The experiment helps us to address three main issues: Firstly, it tests the effect of the relational environment on an individual's mood and on the way that individual chooses to allocate his or her own resources. If a change in the relational environment changes that individual's decision to give, we may conclude that prosocial preferences (conducive to social cohesion) may be adjusted; social preferences are not a static endowment for which no policy can be relevant.

Secondly, we want to see whether these giving behaviours are sensitive enough to the relational environment to be used as its proxy. Should we find that giving behaviours respond significantly to changes in a relational environment, then it would suggest that giving provides us with useful information about the prosocial, cohesive qualities of civic sector relationships.

In other words, we might evaluate how prosocial the civic sector is by the resources that its members are allocating to one another, quantifying a complex social stock by easy-to-measure giving patterns. Such a finding might offer decision makers a tool by which to evaluate the effect of their interventions on prosocial inclination and, ultimately, on social cohesion.

Thirdly, the inclusion of an endowment differential allowed us to test whether the association between giving and the social environment is spurious. For example, people could be responsive to any kind of feel-good factor, irrelevant of whether the feel-good factor arises from relational considerations or material considerations. Certainly this is a point of contention in the literature. Giving and wealth tend to go together (The Center on Philanthropy at Indiana University in the USA 2007; Bauer *et al.* 2012; Holland *et al.* 2012; Lindsey 2012) and even in lab experiments a higher show-up fee was linked to higher levels of giving (e.g. Chowdhury and Jeon 2014). However, a closer look reveals that richer people are not *automatically* more generous (Mayo and Tinsely 2009; Auten and Rudney 1990; Breeze 2006). Our experiment allows us to test whether giving requires both a resource endowment advantage *and* the relational motivation. The results will add to our knowledge of where attention must be focussed for the increase of prosocial/collaborative behaviours.

In addressing these three issues, the experiment contributes to our understanding of civic sector relationships. We gain insight into whether it is possible to influence prosocial inclination. We see whether giving offers a way of evaluating the prosocial qualities of civic sector relationships. And the inclusion of an endowment differential confirms whether it is really relational factors, not just any mood-altering boost to welfare, which fosters prosocial behaviours.

2. METHODOLOGY

Figure 1 summarises the order of events during the experiment. The participants were divided into a closer or else into a more distanced relational environment. In these environments, they completed a demographics questionnaire and then carried out a series of tasks partially in pairs. Afterwards, in an identical, non-interactive social environment, half the people in each relational en-

vironment, unbeknown to the other half, were confidentially informed of a windfall pay bonus. After these treatments (relational and material) they completed private mood surveys, a question about how much they would want to see their partner again, and were provided with the option to give to charity at pay and exit. Mood, feelings towards one's partner and charitable giving constitute the measurable 'outcomes' of the treatments.

To produce the differences in the relational environment, we manipulated conditions according to the five relational parameters affecting relational proximity identified by Schluter and Lee (2009). Table 1 outlines these relational parameters and how treatment differed between the two groups.

Schluter and Lee identified these parameters primarily for the use of managers and executives in the state and market sector, but they correspond to wider research into factors affecting the proximity relationships between people: For directness and multiplexity and their association with closer, strong relationships, see Hess *et al.* (2007), Boyd (2014), Tillema *et al.* (2010) and Grootaert and Van Bastelaer (2002). For how the consideration of common interests is vital to collaborative relationships, see Bardsley (2000), Sen (2009), Kolm and Ythier (2006) and Durlauf and Fafchamps (2004). Without parity and a fair distribution of resources, cooperation and social cohesion are compromised (Adhikari and Goldey 2010; Vajja and White 2008; Du Toit 2004; Wilkinson and Pickett 2009). And finally, continuity in a relationships makes it more worthwhile to maintain a positive collaboration with others (Kolm and Ythier 2006; Durlauf and Fafchamps 2004; Schneider and Weber 2013).

We may perceive that all these elements overlap to determine one factor: relational proximity. It is not usual practice to change many things at once in an experiment, but here we altered the social parameters in a unified direction to create one single factor of comparison: a 'close' relational environment in which the cohesive aspects of the interaction were emphasised compared to a more 'distant' relational environment in which barriers between people were emphasised.

The hypothesis is that the close or 'cohesive' relationships will be reflected in how much one party factors the other into their decision-making process;

Figure 1.
Order of events

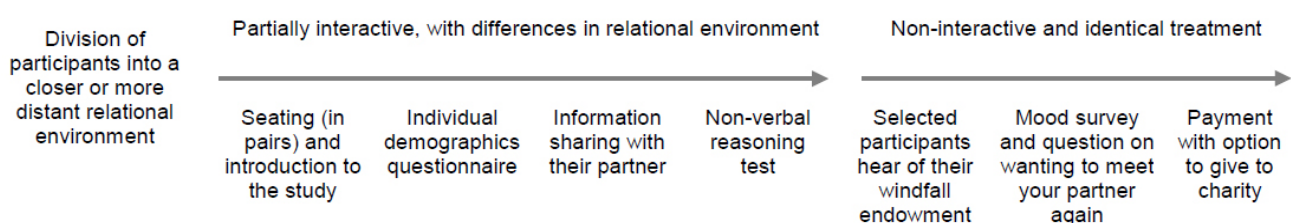


Table 1.
Relational differences between the groups

Relational parameter and description	Close relational environment	More distant relational environment
Directness: communicating in the most direct way possible	Partners and invigilators used all modes of communication (non-verbal, verbal, written)	Partners and invigilators were restricted in terms of <i>verbal</i> communication, although they still met face-to-face.
Multiplexity: getting to know a person in more than one role or context	Partners shared information on multiple aspects of their life.	Partners shared information on career related subjects only.
Commonality: building on purpose and values that are held in common	After sharing information about themselves, partners exchanged ideas on an interest they had in common. They also worked on the non-verbal reasoning task together.	After sharing information about themselves, partners identified ways in which they differed from each other. They undertook the non-verbal reasoning task alone.
Parity: maintaining a fair balance of power in the relationship	Invigilators were easy-going and interactive. They immediately helped students find the right seats. They gave out and collected papers personally, serving the group.	Invigilators distanced themselves from students in dress and demeanour. After everyone was seated, they ordered reseating. They expected papers to be brought to them.
Continuity: the frequency, regularity and duration of the relationship	Hard to engineer in a one-off experiment, but some control was provided for continuity by asking people whether they would want to meet their partner again following the experiment.	

a process evident in the way an individual allocates his or her own resources into a common activity or for the benefit of other people. Thus in this experiment, we specifically test whether a change in relational proximity affects the 'other-centred' way in which people handle their resources. Money was given to a third party (to charity, not to other participants in the experiment) so the stimuli can be monitored in terms of other-centeredness in general; it is not just an in-group strategic manoeuvre. The test reveals then whether giving behaviours are a sensitive barometer of the changes in relational parameters.

Experiment participants were drawn from undergraduates in their first year, who were offered £5 for their participation. Two similar classrooms in the same building were chosen for the experiment, one in which to create the close relational environment, and one for the more distant relational environment. The seating and tables were prearranged such that every person was seated next to one other person. Each individual's place was numbered. Most of the papers for use in the experiment were already on the tables in both rooms, but face down (or enveloped) with 'Do not turn over these papers or open any envelopes until told to do so' printed on the top.

On presentation in the foyer outside the classrooms, student consent forms were collected. The students were then divided into alternate rooms, men in order of arrival, and women in order of arrival, with 20 altogether into each room. This was to produce a split of minimal bias. Bias in the composition of the groups was also minimised by requesting people to sit male-female where possible and female-female only where necessary. We also let people choose their own seats, without their knowing that every other pair of seats in each room was pre-determined

to receive a bonus payment. This randomised the allocation of windfall benefits. Electronic networking during the experiment was banned to avoid external influences. We ensured a lack of a pre-existent relationship between participants by selecting only undergraduates in their first week of university and by telling them to sit next to persons they did not already know. This, plus similarities in their stage of life, eliminated many possible biases between the groups.

There were two invigilators in each classroom as students entered, one to speak, and the other a timekeeper. The timekeeper was to ensure that the lengths of the exercises were exactly the same in both classes, making the groups comparable. Table 2 documents the parallel progression of events in each room, with the relational differences in treatment clearly indicated. Details of the contents of each paper and the exact wording of invigilator instructions may be found in the online appendix (Zischka 2016).

Session effects are potentially a problem, although the following four precautions had been put in place to ensure that the students did not influence each other in their decision to give: (1) No talking. Once the treatments had been completed, students had been working individually and in silence for several minutes before each getting their money and having to decide whether to give to charity; (2) The payment envelope was A5 size – large enough for people to choose coins without being seen by their partner; (3) Everyone had to fill in slips from the envelope whether they donated or not; and (4) all the envelopes had to remain behind, with only the money *not* being donated being handled by the students. These measures made it easy for students to donate or not to donate without anyone else being able to observe their choice.

Table 2.
Progression of experiment by relational environment

Stage of experiment and time allowed	Close relational environment	Distant relational environment	Purpose
Arrival	The 2 invigilators were friendly, approachable and casually dressed. As students arrived, they were encouraged to fill up from the front and according to the directions displayed on the screen. The PowerPoint slide read: <i>University of Reading Research Study. Please put away and silence mobile devices. Please sit in twos: either male-female or female-female, no men together. Sit next to someone you do not already know.</i>	The 2 invigilators were formal; distanced in demeanour and in smart dress. No smiles. As students arrived, the invigilators completely ignored them, speaking only to each other or being engrossed in paperwork. The students therefore seated themselves randomly. Displayed on the screen was the following PowerPoint slide: <i>University of Reading Research Study. Please put away and silence mobile devices. Please maintain complete silence throughout this exercise.</i>	Pairing people male-female where possible was to minimise differences in partners in terms of gender dynamics. People were paired with strangers to exclude pre-existent or strategic relational dynamics.
When no more students arrived, the signal to start programme was given by a third invigilator	Silence not kept. To keep time with the other group, invigilators gave a general welcome message and introduced the experiment along the lines of information already received in the consent form. Correct seating was checked and enforced.	Silence kept. Invigilators finally addressed the group with, "This research study is about to begin. You need to maintain complete silence throughout this exercise. You need to sit in twos, filling up from the front. Sit next to someone you do not already know, and no two men should sit together. Keep the silence and move as quickly as possible NOW." Students were made to quickly reseal in a way corresponding to the other group.	The rule of silence in the distant group excluded the most direct form of communication between student pairs, addressing the 'directness' element of relational dynamics. Differences in demeanour and reseating in the distant group was a power game, enforcing relational distance between invigilator and student and addressing the 'parity' element of relational dynamics.
Paper 1: General information. 45 seconds	Invigilators in each group instruct the students to turn over the first paper. Paper 1 outlined requirements like answer questions truthfully, comply with the invigilators, etc. Attention was drawn to the participant's place number which became their unique identity number. During this time a PowerPoint slide showing the consent form was projected.		Same paper in both groups. Silence maintained in the distant group as above.
Paper 2: Demographics questionnaire. 1 minute	Invigilators in each group instruct the students to start on paper 2. Paper 2 comprised a confidential questionnaire of semi-sensitive demographics (age, gender, race, financial situation and religious tendencies) that might influence giving and which should therefore be controlled for.		Identical in both groups.
	At the end of the time, invigilators went round taking in paper 2	At the end of the time, invigilators told students to fold their paper (for confidentiality) and pass it to the front.	The difference in service addressed the 'parity' element of relational dynamics
Paper 3: sharing. 3 minutes for filling in information individually, and 5 minutes for swapping that information with student partner.	Paper 3 comprised 12 non-intrusive questions about the student. In the distant group these were only about career-related subjects (study, former employment or volunteering, university choices, etc.). The close group included a wider range of subjects however. In the close group, the information was discussed verbally in pairs. The pairs then identified and wrote down something that they had in common and could do in support of this interest. In the distant group, after completing the information sheet, the pairs swapped papers and read what the other had written about themselves. Each partner then considered 3 ways in which they differed from the other person and recorded these differences on the other person's paper. They then returned the information for their partner to read.		The differences in communication style addressed the 'directness' element of relational dynamics. Sharing information only on career, or also in other contexts addressed the 'multiplexity' element of relational dynamics. Finding things in common or things that differ addressed the 'commonality' element of relational dynamics.
	At the end of the time, invigilators went round taking in paper 3.	At the end of the time, invigilators told students to pass their papers to the front.	

Paper 4: Non-verbal reasoning test (used with permission from ElevenPlusExams) 10 minutes	A non-verbal reasoning test was tackled in <i>pairs</i> . Students in both groups were informed that they would not be required to share their results with other students in the room.	The same non-verbal reasoning test was carried out <i>alone</i> .	Working in pairs <i>versus</i> working alone addresses the 'commonality' element of relational dynamics.
PowerPoint slide projected with the answers. 3 minutes	Pairs were allowed to talk through their answers. At the end of 3 minutes, invigilators went round taking in the marked question paper.	Individuals marked their own answers. At the end of 3 minutes, invigilators told everyone to pass the marked question papers to the front.	An attempt to avoid competitive dynamics was to let people mark their own and avoid sharing the results.
The differences in relational environment ended here. From here on, the group environment and student tasks were identical so as to avoid any biases in giving arising from 'the power of ask' (Bekkers and Wiepking 2007). Invigilators were formal but polite. Students worked alone. Complete silence was maintained in both groups.			
Envelope with paper 5: Mood survey and question on desire to meet your partner again, together with windfall pay announcement for some. 3 minutes	The students opened the envelopes on their desks containing this questionnaire. Every other set of tables in each room had a paper stapled to the front of the questionnaire saying ' <i>Congratulations! You picked one of the lucky seats! It was decided that whoever sits at this table should get double pay! So now you will get £10 for your participation instead of £5.</i> ' Those without this windfall however did not know that others had more than them. The questionnaire asked: (1) the extent to which the respondent would want to meet their partner again; and (2) Their mood of the moment, as measured by a Positive and Negative Affect Schedule (PANAS).		The mood survey came at this point to check how mood and feelings towards one's partner had been influenced by the relational treatment and the windfall bonus.
	Paper 5 taken in/returned to the envelope (to assure privacy) and passed to the front		
Envelope 6 containing money, receipt and a charity slip. 2 minutes were allowed to complete these slips from the time the envelopes were handed out	A PowerPoint instruction was projected onto the screen and invigilators read it exactly. <i>'Thanks for your participation. We are going to hand out the money now. The University of Reading requires that everyone signs a receipt and you will also have an opportunity to make a donation to charity should you wish. So please could you keep the silence whilst the money comes round, open your envelope, and fill in the very last slips.'</i> In both groups, all invigilators went round handing out the pre-prepared and numbered envelopes to the right tables.		To see how the differences in relational treatment influenced giving, controlling for mood and for endowment.
Signed receipts were then collected and kept separately for the sake of anonymity. The participants could remove their money from the envelope (which contained a mix of small and larger denominations), leaving behind anything they wanted to donate to charity. There was also a charity slip to fill in stating whether or not people wanted to give, how much they wanted to give and who they wanted to give to (selecting from 9 widely varying but well known charities). The groups were then dismissed. Information sheets on what the study was all about were handed out as people exited the room, and students were told they could ask any further questions in the foyer outside.			

We could also check that these measures were sufficient by observing who gave and where they were sitting, especially in terms of whether former partners were influencing one another. We found that in nine occasions neither partner gave. In eight occasions one person out of the partnership gave. And only on three occasions both persons in a partnership gave. This provides assurance that the decision to give had not been biased by people having somehow seen what their neighbour was doing and just doing the same; our observations on how giving responded to the relational environment appeared to be independent.

This is a 2x2 experiment, the key factors being differences in relational proximity and endowment. Care was taken to avoid other differences in treatment between the groups, with the tasks being of the same length and cognitive demand so as to maintain a fair basis for comparison. Competitive dynamics were also avoided, since introducing competition (market norms) in itself suppresses cooperation and giving (Ariely 2008; Kolm and Ythier, 2006). Even with the windfall payment, the idea of 'lucky seats'

was evoked to keep the spirit away from competition. In everything to do with money, the treatments were identical in both groups. We could check there was no bias in the composition of the groups by considering the spread of demographics such as age, race, gender, religious practice, financial pressures, life-experience, test-scores and so on between groups.

3. RESULTS AND DISCUSSION

First we consider how differences in the relational environment and monetary endowment affect giving, and then how they affect mood. The choice of charities students could opt to give to were taken from various websites citing popular charities in Britain, and selecting nine charities that represented the widest possible range of interests (Table 3).

Giving is a prosocial behaviour form in that it involves one party in a positive interaction with another party. Since giving is to a third party and not to one's partner, it offers more powerful evidence of other-centred motivations in play; there is no direct,

Table 3.
Donations made to charity

Charity	N° students donating	Total donated
Cancer research	6	£11.10
NSPCC	2	£ 7.00
RSPCA	2	£ 6.00
Amnesty International	1	£ 5.00
Greenpeace	2	£ 3.00
Red Cross	1	£ 1.00
Salvation Army	1	£ 1.00
Oxfam	0	-
RNLI	0	-

reciprocal motivation behind the decision to give. We are measuring then whether relational proximity has an impact on prosocial motivations affecting persons *outside* of the experimental environment.

All results were subjected to tests of statistical significance, using a chi-squared test for proportional differences and a Mann-Whitney test for unrelated samples. OLS was used to determine the statistical significance of unrelated samples with more than two groups. Figures 2 to 5 display histograms of the choice people made about giving to charity by treatment group, and sections 3.1 to 3.4 discuss these results in more detail.

As expected, relational proximity positively influenced giving. We were also expecting that more money would stimulate more giving and would have a positive effect on mood, but neither of these expectations were met. As is described in the following sections, it turned out that these expectations were negated by the largeness of the impact of relational proximity as it interacted with these factors.

3.1. The effect of the relational environment versus endowment on giving

Table 4 shows the proportion of individuals making donations as influenced by the relational environment and by the windfall bonus (10 persons in each treatment group).

From Table 4 we see that the proportion of persons donating was influenced much more by the relational environment than by payment differentials. Eleven people out of 20 (55%) gave to charity following a close relational experience, and only 3 people out of 20 (15%) following a more distant relational experience. Higher payments made much less difference, with 8 (40%) windfall recipients donating to charity as opposed to 6 (30%) non-windfall recipients. The difference in relational environment had a statistically significant impact on the proportion of people donating (Chi-squared test p-value 0.008), whilst the difference in payment did *not* have a statistically significant impact (Chi-squared test p-value 0.507) (see Table 5).

The interaction between windfall payment and the relational environment in stimulating giving is worthy of a closer look however. Uninfluenced by any windfall payment, being in a closer relational environment increased giving from two persons making a donation to four persons making a donation, but under the influence of windfall payments, these differences became much more extreme. Thus, getting more money *increased* giving in the close relational environment (7 out of 10 gave) and *decreased* giving in the more distant relational environment (such that only 1 in 10 persons gave). So it is not monetary advantage on its own that makes people give; it takes relational motivators to bring people to part with that money, and the *combination* of close relational environment and monetary advantage appears to be important.

It is instructive to examine also *how much* is given by givers. People were paid in coins such that they could give any sum in 10p intervals from 10p to their whole payment. In spite of this, all but one of the 14 givers gave between £1 (100p) and £5 (500p), with the most common donation being £1 (100p). (The outlier gave 10p).

Although total giving levels were 820p higher in the close relational environment than the distant, and 380p higher amongst those receiving a windfall payment compared to those who did not, these differences were due to the fact that people in the favoured groups were more likely to give, not that they gave bigger sums. This can be seen by considering the differences in average size of donation per head and per treatment group *only amongst those who gave*.

For givers in the close relational environment, having a windfall payment *increased* giving by 101p. For givers in the distant relational environment, having a windfall payment *decreased* giving by 200p. Although the amount of increase or decrease is not statistically significant in itself, it is interesting to note that both in terms of the likelihood of making a donation and also in terms of sums given, the relational environment reverses the giving response. In a close relational environment, the introduction of monetary advantage stimulates people to give more, whilst in a distant relational environment the introduction of monetary advantage stimulates people to give less.

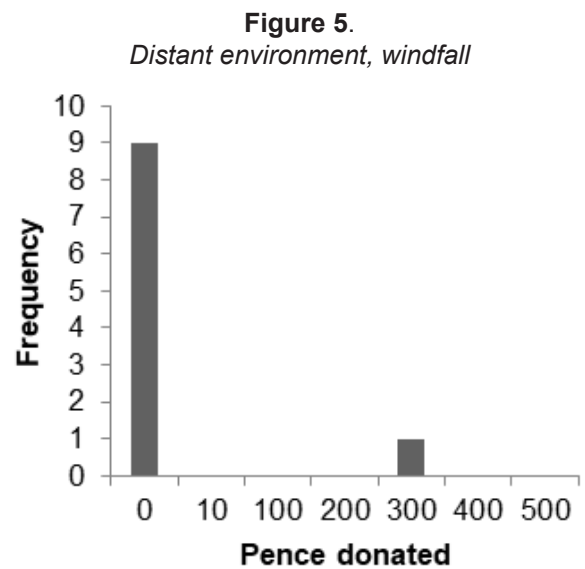
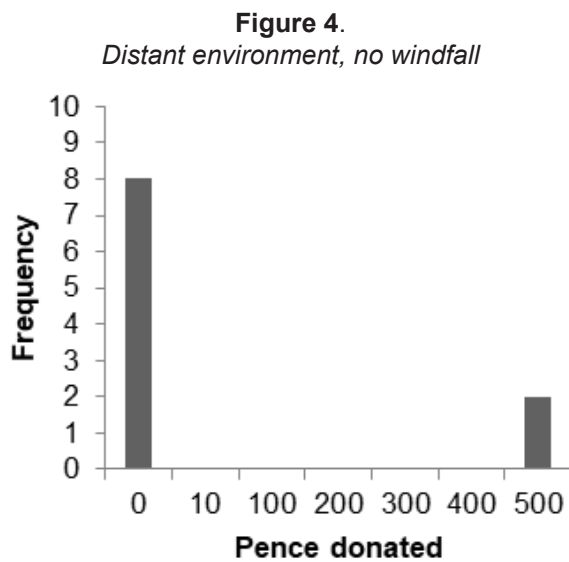
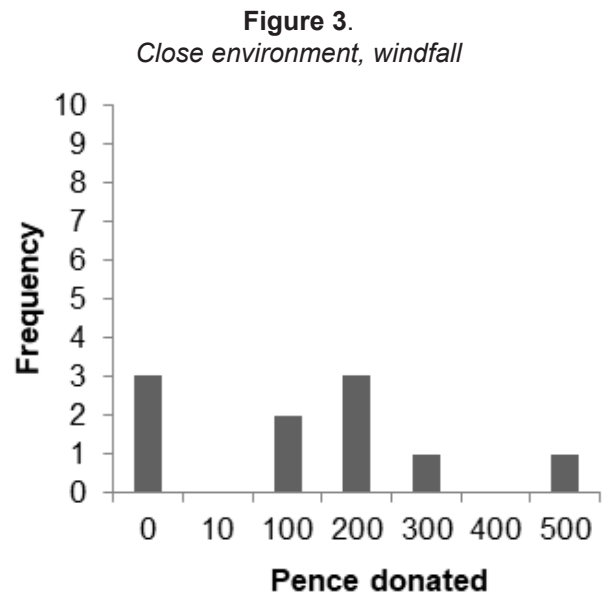
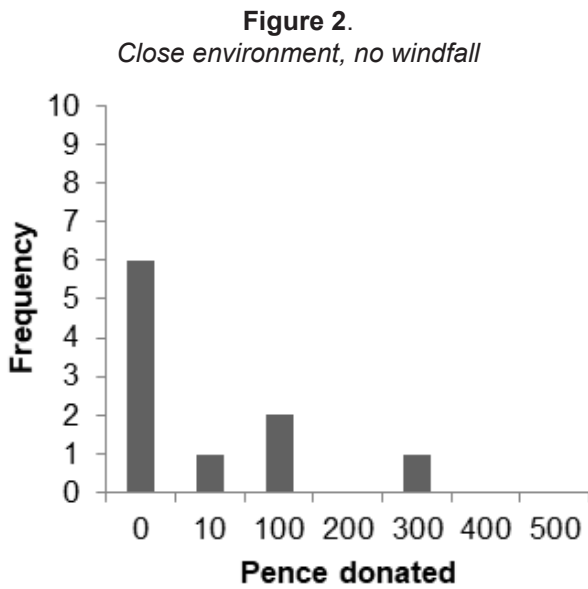


Table 4.
The proportion of individuals making a donation as influenced by:

		Endowment		Total proportion donating by relational environment
		No windfall	Windfall	
Relational environment	Distant	0.20	0.10	Distant: 0.15
	Close	0.40	0.70	Close: 0.55
Total proportion donating by endowment		No windfall: 0.30	Windfall: 0.40	Total proportion donating: 0.35

Table 5.
The significance of the social environment versus endowment on the likelihood of giving

Significance of social environment				Significance of endowment			
Donated	Distant	Close	Total	Donated	Standard	Windfall	Total
No	17	9	26	No	14	12	26
Yes	3	11	14	Yes	6	8	14
Total	20	20	40		20	20	40
Pearson chi2(1) = 7.0330 Pr = 0.008				Pearson chi2(1) = 0.4396 Pr = 0.507			

Overall, however, givers in the distant relational environment gave much more than givers in the close relational environment. They gave an average of 433p as opposed to 192p, a 241p difference. So although those in a close relational environment were more likely to give, the additional givers gave significantly less than those who gave irrespective of the relational environment (Mann-Whitney test p-value 0.031, see Table 6). Moreover, in the more distant relational environment, two of the three givers, one male and one female, gave their *whole payment*. No one in the close relational environment behaved in this way. This implies some internal motivation to give was present that was not related to treatment, or that was even *compensating for bad* treatment. (Alternatively it could be a gesture of disgust or protest; even sabotage, although this seems unlikely as the mood of both these givers was not more negative than the group average).

So we see two statistically significant influences on giving at work. Firstly, the relational environment motivated more people to give, and especially in combination with the receipt of payments higher than others. Secondly, it would seem that a few people are motivated to give by motivations not related to how they are treated or perhaps even to compensate for how they are treated. These few, motivated to give in the face of distant treatment, gave the biggest sums.

As a further strand of evidence that the relational environment affects giving we asked people, 'Would you want to meet your partner again following this experiment?' Participants could choose between

five responses as shown in Table 7. Although these results are not statistically significant, the reported desirability of a continued relationship appears to correlate in the expected direction with an average willingness to donate to a third party and also to the average amount donated.

Moreover, following a close relational experience the average willingness to meet out of the three options was 2.35. Following the distant relational experience the average willingness to meet again was 2.2. Although these differences were not statistically significant, the results imply that the relational parameters chosen in this experiment were working in the expected direction in terms of their impact on relationship. Moreover, we see that giving levels reflected the impact of the relational distancing much more sensitively than subjective questioning along the lines of, 'would you want to meet again.' Despite the small number of observations, giving behaviours still tracked differences in relational proximity with statistical significance.

Besides its effect on giving, another major outcome of the relational and endowment treatments is the mood of the participants. It may be argued that mood or material influences on wellbeing are the main drivers of prosocial behaviours like giving, in which case prosocial behaviour is just a side-product of a better-off society and requires no special attention to social/relational parameters. This experiment seeks to separate out these influences, to check that it really is a *relational* factor that motivates giving actions favouring the wellbeing of others.

Table 6.

The significance of the social environment on the sum given if a donation was made

Social env.	Obs.	rank sum	expected
Distant	3	36	22.5
Close	11	69	82.5
combined	14	105	105

Unadjusted variance 41.25

adjustment for ties -1.99

adjusted variance 39.26

Ho: sum given if distant social env = sum given if close social env

Mann-Whitney statistic $z = 2.155$ ($p > |z| = 0.0312$)

Table 7.

The effect of relationships on giving

Response category	Desire to meet again	number of persons responding	proportion of group making donations	average sum given if donated
1	not at all; not especially; or neutral	0 1 4 3	0.25	100p
2	might be nice	21	0.33	216p
3	definitely	15	0.40	300p

3.2. The interaction of giving with mood

Mood was measured after the relational and monetary treatments but before payment and the decision on giving. It was measured using the positive and negative affect schedule (PANAS) devised by Watson *et al.* (1988) and affirmed by Crawford and Henry (2004) as a reliable measure of a person's pleasurable or un-pleasurable engagement with their immediate environment. The PANAS questionnaire consists of 20 words that describe different feelings and emotions. To each word, the respondent numbers from 1-5 the extent to which they feel that way in the present moment. For analytical purposes the scores of all the positive words are added up for a 'positive affect', and the scores of all the negative words are added up for 'negative affect.' Scores can range from 10-50, with higher scores indicating higher levels of positive or negative affect.

The overall mood differentials between participants had no statistically significant impact on giving. Of particular interest to us however is whether the various treatments made mood more positive

or more negative. For this we consider the average mood differences between treatment groups. Assuming that there are no significant biases in the make-up of the groups (see Section 3.3), any differences in these averages are likely to be driven by the differences in treatments. Tables 8 and 9 detail how the relational environment and windfall endowments influence positive and negative affect.

There are few statistically significant drivers in this mood data. However, we do find that in an environment uncomplicated by differences in endowment (no windfall payment) the closer relational environment saw negative affect reduce by almost three points. This just scrapes significance at a 90% confidence interval (Mann-Whitney test p-value 0.099, see Table 10), and indicates that relational proximity in the absence of monetary complications makes people feel better. None of the other interactions in Tables 8 and 9 are statistically significant, although directionally, the effects of the relational environment on mood are positive, whilst the effects of a windfall endowment on mood are more marginal and inconsistent.

Table 8.
Positive affect by treatment group

		Endowment		Overall positive affect by relational environment
		No windfall	Windfall	
Relational environment	Distant	26.3	25.6	Distant: 26.0
	Close	27.3	28.8	Close: 28.1
Overall positive affect by endowment		No windfall: 26.8	Windfall: 27.2	Average positive affect: 27.0*

Table 9.
Negative affect by treatment group

		Endowment		Overall negative affect by relational environment
		No windfall	Windfall	
Relational environment	Distant	15.3	13.9	Distant: 14.6
	Close	12.5	14.8	Close: 13.7
Overall negative affect by endowment		No windfall: 13.9	Windfall: 14.4	Average negative affect: 14.1*

*The mean positive and negative affect scores are similar to those found in much wider studies (see Crawford and Henry 2004), adding credibility to the validity of these results

Table 10.
The significance of the social environment on lifting negative mood without windfall complications

Social env.	Obs.	rank sum	expected
Distant	10	126.5	105
Close	10	83.5	105
combined	20	210	210

unadjusted variance 175.00

adjustment for ties -4.87

adjusted variance 170.13

Ho: -ve affect if distant social env = -ve affect if close social env

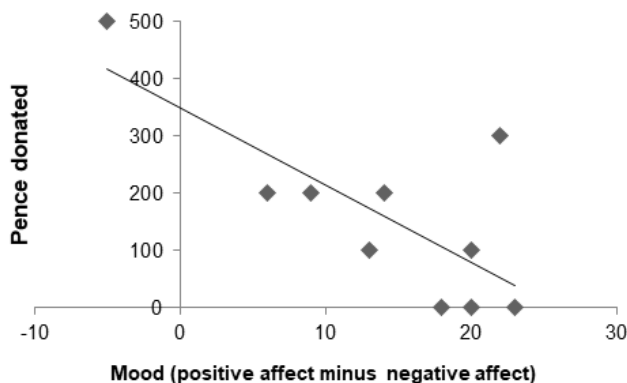
Mann-Whitney statistic $z = 1.648$ ($p > |z| = 0.0993$)

Adding an endowment advantage into a close relational environment introduced mixed emotions. Positive affect increased by 1.5; people liked getting the windfall, but negative emotions *also* increased by 2.3; unequal endowments disturbed people. This is very different from the mood response to a windfall in the distant relational environment. Here people were not happier because of the extra income, but at least they were a bit less sad; negative affect *decreased* by 1.4. This indicates that uncomfortable emotions raised by the monetary differences only applied to people in close relationships.

Of statistical significance is that for those in a close relational environment receiving windfall endowments, the more negative affect they experienced, the more likely they were to give to charity and the bigger the sum they gave (Fig. 6).

Figure 6.

Interaction between mood and sum donated, within a close relational environment and with a windfall endowment



OLS analysis shows that for every point worse the participants felt, they gave 13.5p more on average to charity (standard deviation 4.3p, p-value 0.014).

This influence of negative affect did not apply except in the context of a close relational environment; however, in a distant relational environment, it was the more *cheerful* people who made a donation (Mann-Whitney test, p-value 0.063, see Table 11). It would seem that a closer relational environment made people more inequality averse (Fehr and Schmidt 1999). It sensitised people to imbalance in the relationship; imbalances which were particularly felt in the presence of endowment differentials, and giving behaviours were a response to these concerns. People in the distant rela-

tional environment were unaffected by such concerns however, and their giving was rather responsive to feel-good factors. This is only an interpretation, but it is difficult to think of an alternative explanation for the data.

The interpretation also fits with a trend amongst people in the close relational environment to become less comfortable about seeing their partner again once they had a windfall endowment. There are three categories of response to the want-to-see-partner question as shown in Table 7, with higher responses corresponding to an increased desire to meet again. In the distant relational environment, the mean response to these questions is 2.2, and it is exactly the same whether people have a windfall income or not. In the close relational environment and uninfluenced by the existence of any windfall pay-outs, the mean response to these questions is 2.5; they are more likely to want to see their partners again. Having a windfall that they know others do not have, however, brings that average desire-to-see-one's-partner-again right back down to 2.2; the same level expressed by those in the more distant relational environment. These differences are not statistically significant, but their direction does indicate that the disturbance has some relational motivation. The interpretation also fits with evidence from authors like Wilkinson and Pickett (2009) or Bartolini *et al.* (2013) who claim that uneven income distribution has negative relational and emotional consequences. But notably it is in the closer relational environment with a windfall endowment that people made the most donations to charity (7 out of 10 gave compared to 4 in 10; 2 in 10; or 1 in 10). It would appear that people became motivated by the closer relational environment to become inequality averse (a prosocial characteristic), such that although they liked getting more money, the windfall raised concerns over unequal endowments, and prompted them to redress these concerns through giving.

The effect of manipulating relational parameters also had some anecdotal effects on student behaviour: As people exited the classrooms, those from the close relational environment immediately got into clusters to talk over their experiences, look at the sheet explaining what it was all about, and engage with the invigilators in conversation. Those from the distant relational environment on the other hand walked straight out and away, avoiding eye contact. Such small changes in relational parameters were alarmingly efficient.

Table 11.

The impact of positive minus negative affect on making a donation in a distant relational environment

Donated	Obs.	ranksum	expected
No	17	161	178.5
Yes	3	49	31.5
combined	20	210	210

unadjusted variance 89.35
 adjustment for ties -1.01
 adjusted variance 88.24
 Ho: overall mood if not give = overall mood if give
 Mann-Whitney statistic z = -1.863 (p>|z| = 0.0625)

3.3. Control for confounding effects

Endowment and the relational environment are not the only factors affecting giving, so bias in these results must be tested for by checking that the composition of the groups is not weighted in favour of any other major factor of influence. Using information from the opening surveys, an analysis of gender, race, subject interest, job/volunteer involvement, financial struggles, religious involvement and age showed that the group compositions were not unduly biased; there was a good mix of these demographics found across the groups. This makes the findings with respect to the relational treatments more credible. A possible exception was the finding that there were more psychology students in the distant relational environment and economics students in the close one. However, looking at how people donated in the close relational environment we found that, if anything, students from psychology were *more* likely to donate than others, so the experiment was not biased such that giving was more likely to take place in the close relational environment because of the demographic distribution. Overall, it would seem that the precautions mentioned in section 2 to avoid bias in the composition of the treatment groups were effective; the controls would indicate that there is a random selection of person types spread across the groups (Table 12).

In terms of the influence of these demographics in themselves, although certain demographics may be associated in the literature with leaning to more or less giving, in these small samples there were no statistically significant differences except with respect to gender (women were much more responsive to changes in the relational environment than men were). But even here there was no bias in the experiment since the distribution of women across the treatment groups was even. See the appendix of Zischka (2016) for further notes on gender differences, which lie outside the scope of this paper. This appendix also describes how higher test scores improved mood,

but not giving, thus reinforcing our hypothesis that giving is affected more by relational treatments than by other influences on wellbeing.

3.4. Summary of results

To summarise, it was found that changes to relational proximity significantly impacted the decision to give to charity. Monetary stimuli affecting welfare independently of a positive relational environment had no positive impact at all on giving behaviours. The importance of the relational factor in impacting giving behaviours concurs with evidence from Hornstein *et al.* (1975) and Holloway *et al.* (1977). These authors found in lab experiments that subjects primed with news reports on helping behaviours tended to be more generous than the control group, whilst those primed with reports on murder tended to be less generous than the control group. Priming with reports on non-social elements like the positive or negative impacts of weather did not affect giving however.

Having said all this, we find that a *combination* of a close relational environment and a windfall endowment motivated the most giving of all, with 7 out of 10 persons making a donation to charity, and studying the interaction between treatment and mood could help explain why this is so. A close relational environment independent of endowment differentials significantly improved mood. Introducing the complication of bonus endowments produced surprisingly mixed emotions however, and the more disturbed a bonus winner felt in a close relational environment, the more they gave. There was no evidence of this redistributive behaviour in the face of negative emotions in the distant relational environment; only in a close relational environment. It could be then that people had become motivated by the close relational environment to think more about other people, and so they were especially sensitised to the threat posed to relationships by unequal endowments. They became inequality averse, and they responded to the imbalance by giving.

Table 12.
Distribution of persons between groups

		Close relational environment	Distant relational environment
Gender: male (female)		7 (13)	8 (12)
Ethnicity: white-Brit (other)		15 (5)	13 (7)
Subject studied:	economics	9	5
	psychology	4	8
	geography	4	3
	other	3	4
Job or volunteer involvement: yes (no)		14 (6)	12 (8)
Finance: just get by/difficult (do alright/comfortable)		6 (14)	6 (14)
Attend religious services at least monthly: yes (no)		4 (16)	3 (17)
Birth year: academic year 1995/6 (older)		15 (5)	14 (4)

Finally, it could be seen that the treatments in this experiment did not fully explain every individual's decision to give or not to give, and it turned out that the sums given by the few people who were motivated to give independently of how they were treated were significantly greater than the sums given by those who were encouraged to give by the way they were treated. This suggests (see also Kolm and Ythier 2006; Dessi and Monin 2012) that giving behaviours depend partly on the relational environment (how the individual is being treated) and partly on prosocial attitudes appertaining to the individual that can transcend the external environment (or lag behind it).

These theories regarding motivations for giving can be contrasted to the theories put forward by other authors. Hoffman *et al* (1996) argued that concerns for reputation and reciprocation motivate people to give as social distance decreases and the participants become better able to identify one another. In our experiment, however, both groups interacted face-to-face such that the identification of the players and their actions was equally possible (or impossible), and yet the players in each group still acted very differently. Clearly it is more than identification of individuals alone that matters. Aguiar *et al.* (2008) added the dimension of moral obligation: making it more obvious that a resource transfer is appropriate motivates people to carry this out. Whilst our experiment does not attempt to distinguish whether people fulfil moral obligations for ego-centric or other-centred reasons (both could be of influence) it does appear that our differences in treatment are sending out different signals regarding the 'acceptable' norms of prosocial behaviour for each group, and that people are adjusting their decision-making patterns accordingly. Ross and Ward (1996) have also demonstrated this with a lab experiment in which a cooperative environment evoked more cooperative decision-making patterns than was the case in a competitive environment. Our experiment adds to this by demonstrating that decision-making patterns respond not only to cooperative versus competitive environments, but also to different *degrees* of cooperative environment. Bardsley (2000) suggested that people have the capacity to 'team think' (to allocate resources in the interests of the collective) provided others are doing the same, since the best joint outcome can be achieved through such behaviours. Here we suggest that the relational environment is signalling where these prosocial/team-thinking behaviours are appropriate.

Having gathered evidence that the relational environment is indeed reflected in giving, it may be of interest to rerun the experiment testing each relational parameter separately. Looking at each parameter individually will also allay concerns that something other than relational distance is acting on giving behaviours. The sample size may also be increased, since with 40 observations only the simplest of statis-

tical analyses could be carried out and it is possible for an outlier to influence the statistical significance of the outcomes. (Although visual representations of the data were made to help allay these concerns). A larger sample size would also allow the interactions between mood, relational drivers and inequalities to be explored. Even with this small sample size however, the response of giving to the relational environment was so extreme that it still yielded some statistically significant results.

4. CONCLUSIONS

This experiment set out to discover if changes to relational parameters drove other-centred giving patterns. Three linked issues were addressed, to which this experiment gave the following answers. Firstly, we wanted to see how the relational environment and individual prosocial preferences interact, and it was found that the relational variables strongly influence an individual's decision to give. This bears out the results of DeScioli and Krishna (2013) and also of Attanasi *et al.* (2013), showing that a prosocial attitude is not just a static, pre-existent, integral emotion, but can also be modified by momentary conditions.

Secondly, we wanted to see whether giving is a useful indicator of the cohesive qualities of the wider social environment, and found that giving is indeed a sensitive barometer of these qualities. Giving is indicative of individual prosocial inclination, and this prosocial inclination interacts with the nature of the wider social environment. Since giving in this experiment was to a third party, we have evidence that changes in the social environment affect prosocial preferences generally. In other words, how people are treated affected how they went on to treat others.

And thirdly, we wanted to confirm that it really was the relational component that motivated giving, and not just a mood-altering improvement to welfare that could be achieved in other ways (a by-product of being better off). Here it was found that a welcome monetary windfall was impotent to stimulate giving by itself; it was relational proximity upon which giving behaviours pivoted, and the desire to maintain that proximity.

Although we note an interaction between individuals and their social environment, this was not a repeated experiment, so the continuity of the feedback loops are not proven. However we do have a social treatment, a social response, and an indicator of a wish for further social engagement. Moreover, the donations to charity that emerge as a positive social response do not go out of the social network; they must change the social parameters experienced by the third party who receives the money, so now *their* social parameters have changed. How the treatment that third party receives goes on to affect *their* activities is beyond the scope of the experi-

ment. What we can affirm, however, is that the treatments each group and its invigilators were giving to one another systematically impacted the individual's decision to consider the interests of a third party, bringing them to give their own money to others. This may be represented as a positive interaction between an individual and their social environment having further positive knock-on consequences to the welfare of society as a whole.

As outlined in the introduction, this interaction between individual prosocial inclinations and the wider social environment (response and counter-response) could be dictating whether the overall cohesion of these relationships is increasing or decreasing. Prosocial inclination (affecting the way a person allocates their resources to the benefit of others) can be modified by changing certain parameters of that interaction. Furthermore, the prosocial qualities of this modification can be quantified by changes in giving flows. There are a couple of far-reaching implications to this research.

Firstly, if relational parameters interact with individual attitudes to have such a big knock-on effect on the way social cohesion develops over time, the implication is that these parameters should be carefully taken into consideration by decision makers and development agents in their social interventions. Schluter and Lee's mix of directness, parity, commonality, multiplexity and continuity are all malleable and may be useful points of departure to consider.

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