ECONSTOR
Make Your Publications Visible.

A Service of
ZBW
Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Cappelen, Alexander W.; Gauri, Varun; Tungodden, Bertil

Working Paper

Cooperation Creates Special Moral Obligations

CESifo Working Paper, No. 7052

Provided in Cooperation with:
Ifo Institute – Leibniz Institute for Economic Research at the University of Munich

Suggested Citation: Cappelen, Alexander W.; Gauri, Varun; Tungodden, Bertil (2018) : Cooperation Creates Special Moral Obligations, CESifo Working Paper, No. 7052, Center for Economic Studies and ifo Institute (CESifo), Munich

This Version is available at:
https://hdl.handle.net/10419/180314

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

CESifo WORKING PAPERS

7052
2018

May 2018

Cooperation Creates Special Moral Obligations

Alexander Cappelen, Varun Gauri, Bertil Tungodden

CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editors: Clemens Fuest, Oliver Falck, Jasmin Gröschl
www.cesifo-group.org/wp

An electronic version of the paper may be downloaded
· from the SSRN website: www.SSRN.com
· from the RePEc website: www.RePEc.org
· from the CESifo website: www.CESifo-group.org/wp

CESifo *Working Paper No. 7052*
Category 13: Behavioural Economics

Cooperation Creates Special Moral Obligations

Abstract

A large-scale economic experiment, conducted on a representative sample of the US population, shows that cooperation creates special moral obligations. Participants in the experiment, acting as impartial spectators, transferred significantly more money to an unlucky worker when two individuals had cooperated than when they had worked independently. We further show that the effect of cooperation is strongly associated with political affiliation, with Democrats attaching significantly more importance to cooperation as a source of moral obligation than Republicans. Our findings shed light on the foundations of redistributive preferences and may contribute to explain the often observed asymmetry in moral concern for different groups of individuals, both nationally and internationally.

Keywords: cooperation, distributive justice, redistribution.

Alexander Cappelen
NHH Norwegian School of Economics
Norway - 5054 Bergen
alexander.cappelen@nhh.no

Varun Gauri
The World Bank
USA - Washington, DC 20433
vgauri@worldbank.org

Bertil Tungodden
NHH Norwegian School of Economics
Norway - 5054 Bergen
bertil.tungodden@nhh.no

May 9, 2018
All authors have contributed equally to the paper. We have received valuable comments and suggestions from Ranveig Falch, Mira Fisher, Susan Fiske, Ingar Haaland, Shaun Hargreaves Heap, George Loewenstein, Kalle Moene, Ryan Muldon, Maj-Britt Sterba, and Debraj Ray. We would also like to thank Valeria Shuvatova for administrative assistance and IT-support. The views and _ndings expressed in this paper do not necessarily represent the views of the World Bank or its Executive Directors. The experiment is registered in the Registry for Randomized Controlled Trials operated by the American Economic Association (AEARCTR-0001367).

Humans are often characterized as the cooperative species (Bowles and Gintis, 2011), and an important literature has shown how people's moral motivation constitutes a foundation for cooperation in human societies (Fehr and Gächter, 2000; Fehr and Fischbacher, 2004; Henrich, 2004; Falk and Fischbacker, 2006). But does this relationship also go the other way: is cooperation a source of moral obligation? The answer to this question may be of great importance for how we understand and sustain cooperation among humans, both within and across societies. In particular, it has implications for whether we believe that people who stand in a special relationship, e.g., family members, colleagues, or fellow citizens, have special moral obligations toward one another.

The normative status of special moral obligations is at the heart of distributive justice and is perhaps most clearly seen in the debate raised by the large inequalities between countries and the increasing number of migrants (Singer, 2011; Gauri and Sonderholm, 2012; Risse, 2012; Hassoun, 2012). Do people have a stronger moral obligation to help their fellow citizens than foreigners, and, if so, what is the source of this asymmetry? A prominent argument for an asymmetry in moral obligations has been put forward by the philosopher John Rawls (Rawls, 1971, 2001), who argues that a political society should be viewed as a fair system of cooperation that creates special moral obligations among its members. Inspired by this normative argument and the importance of cooperation in human societies, we conducted a large-scale experiment to study whether people consider cooperation to create special moral obligations among those who cooperate.

To identify people's moral views on this question and to remove any self-serving bias, we study the distributive behavior of impartial spectators who make a redistributive choice in a real situation (Konow, 2000). The impartial spectator approach has a long history in moral reasoning (Sen, 2009), and it has been shown that the moral views identified with this approach also shape peoples behavior in situations involving self-interest (Cappelen, Konow, Sørensen, and Tungodden, 2013a). We thus believe that the spectator choices in the present study reveal moral obligations of importance for understanding human behavior and cooperation in society.

In the experiment, the spectators decide how much to redistribute between two individuals who have earned money by completing an assignment, but where one of them has been unlucky and lost his or her earnings. Our main interest is in how the amount transferred to the unlucky worker depends on whether the two individuals have been part of a system of cooperation or have worked independently. In particular, do spectators consider cooperation to create a special relationship between the two individuals, justifying more redistribution of earnings than when they have worked independently?

The experiment was implemented by combining two infrastructures for data collection. We recruited 1015 individuals to act as spectators through the data-collection agency (TNS Gallup), where the sample is representative of the US population (18+ years old) on observable characteristics (gender, age and geography).[1] At the same time, we recruited individuals or "workers" from an online marketplace for work (Amazon Mechanical Turk) to complete a code recognition task.

The workers received a participation fee of 2 USD and were told that they could earn an extra 6 USD if they completed an assignment. However, they were also told that some of them would randomly lose their earnings and that there would be a distribution phase where a spectator could decide to transfer earnings from a randomly selected worker who had not lost the earnings to an unlucky worker, and thereby determine what the two of them would actually be paid for the assignment. We constructed sets of six workers, where each set was randomly divided into two groups of three workers, group A and group B. A set of six workers constituted a distributive situation for which a unique spectator made a redistributive decision.[2] The workers were placed into one of two conditions in terms of production: independent work or cooperation. If they worked

[1] In the appendix, we provide and overview of the background characteristics for the sample in Table A1 and a copy of the instructions given to the spectators in section A.2.

[2] We had six workers in each distributive situation to ensure that the randomly selected worker in each treatment was randomly selected from a pool of workers who had not lost their earnings and to avoid varying the number of workers in the distributive situation across treatments.

independently, a worker succeeded in doing the assignment and earned 6 USD if he or she completed the task. If they cooperated, a worker succeeded and earned 6 USD only if the two other workers in his or her group also completed the task. Thus, in the cooperation condition, an individual who completed his or her task earned nothing if one of the other two workers did not complete the task. This experimental design captures a key aspect of cooperation as a mutually beneficial activity (Bowles and Gintis, 2011): the success of each individual causally depends on the contribution of other individuals. The workers in both conditions were not told of the existence of other sets of workers or conditions of production apart for their own. All workers were anonymous and could not communicate with each other, which excludes social comparison concerns for the spectators.

In the distributive situations presented to the spectators, all six workers had succeeded in completing the assignment, and, as a result each had earned 6 USD.[3] However, one of the workers, randomly drawn, had lost his or her earnings from the assignment. The task of the spectator was to decide the amount of money, if any, to transfer to the unlucky worker from one of the other five workers in the set. Thus, each spectator made a choice with real economic consequences for others, a fact that was highlighted in the instructions. The spectator's decision did not affect the payment to the four other workers in the distributive situation, who all received their earnings of 6 USD.

In a 2x2 between-subjects design, which is summarized in Table 1, we varied two aspects of the distributive situation presented to the spectators: first, whether workers had cooperated within their group or worked independently on the assignment; second, whether the two workers for which the spectator made a redistributive decision belonged to the same group. This experimental setup allows us to cleanly identify whether cooperation is considered to constitute a source of moral obligation and, if so, the extent to which such a moral obligation is considered to be specific to those who have cooperated with each other or applies more broadly.

[Table 1 about here]

As shown in Figure 1, we observe considerable heterogeneity in the spectator choices of how much to transfer to the unlucky worker.[4] The most common choices were to transfer nothing (46%) and to equalize the earnings (30%), with an average transfer of 1.74 USD.

[Figure 1 about here]

To examine whether cooperation is seen by an impartial spectator to be a source of moral obligations that justifies greater transfers to the unlucky worker, we initially focus on the two treatments where the two workers belong to the same group. Our first main finding, reported in the two upper panels of Figure 2, is that spectators redistribute significantly more to the unlucky worker when they have cooperated than when they have worked independently. The upper left panel shows that the amount transferred is about 29% higher in the cooperation treatment (T2) than in the individual treatment (T1) (1.75 USD versus 1.37 USD, equivalent to 0.24 std, $p < 0.01$), while the upper right panel shows that cooperation reduces the share of spectators who transfer nothing to the unlucky worker by 12.2 percentage points (52.4% versus 40.2%, $p < 0.01$).[5] Table A2 shows that these results hold when we control for the spectators' background characteristics, where we observe that age had a statistically significant effect on the amount transferred, with older people more likely to transfer nothing to unlucky workers ($p < 0.01$).

[3] We recruited workers until we had 1015 sets of six workers who all succeeded in completing the assignment. Sets of workers in which someone did not complete the assignment were not presented to the spectators in the experiment. The payments to these workers were determined by a spectators recruited separately from the spectators used in the present study, and, therefore, in line with the pre-analysis plan posted on the AEA RCT Registry, their decisions are not included in the present analysis.

[4] In Figure A1, we provide histograms by treatment.

[5] In the analysis, the effects are always standardized relative to the standard deviation in the treatment where individuals work independently and redistribution takes place within the group (T1).

[Figure 2 about here]

A possible explanation for why the spectators redistribute more in the cooperation treatment could be that they generally believe there is a special moral obligation to redistribute to an unlucky worker that has contributed to a successful cooperation, independent of whom the unlucky worker has cooperated with. This could be due to spectators interpreting the fact that the unlucky worker has cooperated as a signal of this worker being of a deserving type, or merely that he or she is owed some reciprocity for having "gifted" cooperation (Malmendier and Schmidt, 2017). The experimental design allows us to examine this mechanism by comparing the spectator choices in the two treatments where the two workers belong to different groups. In this comparison, as shown in the lower panels of Figure 2, we find no evidence of the moral obligation between the two workers being greater in the treatment where they worked independently than in the treatment where each of them cooperated with other workers. The lower left panel shows that the amount transferred is almost the same in the cooperation treatment (T3) and the independent treatment (T4) when transfers are between groups (1.69 USD versus 1.67 USD, equivalent to -0.01 std, $p = 0.919$). The lower right panel shows that the share of spectators who transfer nothing to the unlucky worker is not lower when workers cooperated (0.49 versus 0.47, $p = 0.688$). Tables A2 and A3 show that these results hold when we control for the spectators' background characteristics, while Table A4 shows that difference in the effect of cooperation when the two workers are in the same group (T1 versus T2) and when they are in different groups (T3 versus T4) is large and statistically significant. Thus, the results reported in Figure 2 provide strong evidence for cooperation creating specific moral obligations only among those who have cooperated.

[Figure 3 about here]

To study whether the identified moral obligations can shed light on political disagreements about redistribution, we analyse whether there is an association between spectator choices and self-reported political preferences. In Figure 3, we present the effects of cooperation separately for Republicans and Democrats, where we observe striking differences.[6] First, for Democrats, cooperation has a large, positive effect on transfers when the two workers have cooperated with each other (0.481 std, $p < 0.001$), while it has no significant effect on transfers for Republican spectators (0.086 std, $p = 0.533$). The political difference in the effect of cooperation is large and statistically significant (0.49 std, $p < 0.01$), and it appears to capture a fundamental reason why Democrats and Republicans disagree about redistribution. To illustrate, in the treatment where the workers have worked independently and redistribution is within group, there is no statistically significant difference in how much Republicans and Democrats transfer to the unlucky worker (Republicans transfer 1.55 USD and Democrats transfer $1,33$ USD; $p = 0.393$). In contrast, Democrats redistribute significantly more than Republicans when the two workers have cooperated (Republicans transfer 1.35 USD and Democrats transfer $2,16$ USD; $p < 0.01$). Second, when redistribution is between groups, there are no political differences in the effect of cooperation - it is not statistically significant for either side of the political spectrum (Democrats: 0.086 std, $p = 0.533$; Republicans: -0.24 std, $p = 0.208$). Overall, our findings suggest that a reason why Democrats are more favorable towards redistribution than Republicans is that they view society as a system of cooperation that generates moral obligations among its citizens.

[Figure 3 about here]

[6] See the corresponding regression analysis in Table A5 and **??**. 26.5% of the participants identify as neither Democrats nor Republicans. For this group, we observe a positive effect of cooperation when the redistribution is within group (0.24 std, $p = 0.177$), but no effect of cooperation when the redistribution is between groups (0.081 std, $p = 0.685$).

Our study relates to the influential work by social psychologists and behavioral economists who have documented strong in-group effects on the allocation of resources (Sherif, 1967; Rabbie and Horwitz, 1969; Tajfel, 1970; Tajfel, Billig, Bundy, and Flament, 1971; Tajfel, 1979; Wetherell, 1982; Chen and Li, 2009). Specifically, our findings suggest that in situations involving cooperation within groups, an in-group effect may partly reflect that people believe they have special moral obligations towards other group members since they have cooperated. In this respect, it is important to note that while the literature on in-group effects has largely focused on decisions made by participants with a stake in the distributive situation, we provide the first study of how spectators understand moral obligations among group members. Interestingly, we do not find any evidence of spectators expressing an in-group effect in the sense that they consider membership in a group in itself to create special moral obligations. In fact, as shown in Table A4 in the appendix, when the groups are minimal because individuals have worked independently, we observe that the spectators aim to equalize outcomes between groups by transferring more to the unlucky worker when the two workers are in different groups (T3) than when they are in the same group (T1) (0.183 std, $p = 0.052$).

Our findings also contribute to the large experimental literature on the nature of social preferences (Andreoni and Miller, 2002; Andreoni, Aydın, Barton, Bernheim, and Naecker, 2016; Bellemare, Kröger, and van Soest, 2008; Cappelen, Drange Hole, Sørensen, and Tungodden, 2007; Cappelen, Sørensen, and Tungodden, 2010; Cappelen et al., 2013a; Charness and Rabin, 2002; Engelmann and Strobel, 2006; Fehr, Naef, and Schmidt, 2006; Fehr, Bernhard, and Rockenbach, 2008; Fehr, Glätzle-Rützler, and Sutter, 2013; Konow, 1996, 2000; Smeets, Bauer, and Gneezy, 2015; Starmans, Sheskin, and Bloom, 2017). Previous experimental studies regarding what people believe to be a just distribution of earnings have focused on individuals working independently (Konow, 2000; Cappelen et al., 2007; Almås, Cappelen, Sørensen, and Tungodden, 2010; Cappelen et al., 2013a; Cappelen, Moene, Sørensen, and Tungodden, 2013b). Here we have documented how cooperation shapes peoples' view on what is a fair distribution of earnings. This finding highlights a new relationship between cooperation and social preferences. Important work has shown that social preferences, especially the willingness to reciprocate beneficial or harmful acts, constitute a foundation for cooperation in human societies (Bowles and Gintis, 2011; Fehr and Gächter, 2000; Fehr and Fischbacher, 2004; Henrich, 2004; Falk and Fischbacker, 2006). Complementary to these studies, we show that the relationship also goes the other way: cooperation shapes people's social preferences by establishing special moral obligations among those who cooperate. Taken together, this suggests that the interaction between cooperation and social preferences may constitute a virtuous circle that can sustain cooperation among members in a society.

The results shed light on the foundations of redistributive preferences by showing how beliefs about society as a system of cooperation may be seen as justifying special moral obligations among its citizens. In this respect, our study points to a fundamental difference between humans and animals that can contribute to explain why humans often are considered to be the cooperative species (Melis, Schneider, and Tomasello, 2011): humans have developed a capacity for moral reasoning that enables them to reflect upon the nature of moral obligations. The results may also contribute to explain why human history has been characterized by an expanding moral circle (Singer, 2011), since a defining feature of flourishing societies has been the ability to facilitate cooperation across new groups that, consequently, may have been given rise to an extended set of moral obligations.

At the same time, the findings may contribute to a better understanding of the often observed asymmetry in the willingness to help fellow citizens and foreigners: this asymmetry may arise from people believing that special moral obligations exist within, but not across nations because co-nationals cooperate to a much greater extent than people from different nations. Such a view is consistent with the normative position defended most prominently by John Rawls, who argued that a political society should be viewed as a fair system of cooperation. According to Rawls, the obligations of distributive justice are different in a domestic society, consisting of free and equal

persons who have cooperated for mutual benefit, than in the global society (Rawls, 1971, 2001). However, the results also suggest that one route for advocates of global justice may be to make salient the cooperation that already exists across societies (in the form of linked markets in goods, services, capital, and labor), which likely would lead people to view that they have stronger moral obligations towards individuals from other societies. Finally, our results may contribute to a better understanding of the functioning of various other organizational structures, including the family and the work place, where a critical factor may be whether the members of the organization perceive it as a system of cooperation.

References

Almås, Ingvild, Alexander W. Cappelen, Erik Ø. Sørensen, and Bertil Tungodden (2010). "Fairness and the development of inequality acceptance," *Science*, 328(5982): 1176–1178.

Andreoni, James, Deniz Aydın, Blake Barton, B Douglas Bernheim, and Jeffrey Naecker (2016). "When fair isn't fair: Sophisticated time inconsistency in social preferences," Working Paper.

Andreoni, James and John Miller (2002). "Giving according to GARP: An experimental test of the consistency of preferences for altruism," *Econometrica*, 70(2): 737–753.

Bellemare, Charles, Sabine Kröger, and Arthur van Soest (2008). "Measuring inequity aversion in a heterogeneous population using experimental decisions and subjective probabilities," *Econometrica*, 76(4): 815–839.

Bowles, Samuel and Herbert Gintis (2011). *A cooperative species: Human reciprocity and its evolution*, Princeton University Press.

Cappelen, Alexander W., Astri Drange Hole, Erik Ø. Sørensen, and Bertil Tungodden (2007). "The pluralism of fairness ideals: An experimental approach," *American Economic Review*, 97(3): 818–827.

Cappelen, Alexander W., James Konow, Erik Ø. Sørensen, and Bertil Tungodden (2013a). "Just luck: An experimental study of risk taking and fairness," *American Economic Review*, 103(3): 1398–1413.

Cappelen, Alexander W., Karl O. Moene, Erik Ø. Sørensen, and Bertil Tungodden (2013b). "Needs versus entitlements: An international fairness experiment," *Journal of the European Economic Association*, 11(3): 574–598.

Cappelen, Alexander W., Erik Ø. Sørensen, and Bertil Tungodden (2010). "Responsibility for what? Fairness and individual responsibility," *European Economic Review*, 54(3): 429–441.

Charness, Gary and Matthew Rabin (2002). "Understanding social preferences with simple tests," *Quarterly Journal of Economics*, 117(3): 817–869.

Chen, Yan and Sherry Xin Li (2009). "Group identity and social preferences," *American Economic Review*, 99(1): 431–457.

Engelmann, Dirk and Martin Strobel (2006). "Inequality aversion, efficiency, and maximin preferences in simple distribution experiments: Reply," *American Economic Review*, 96(5): 1918–1923.

Falk, Armin and Urs Fischbacker (2006). "A theory of reciprocity," *Games and Economic Behavior*, 54(2): 293–315.

Fehr, Ernst, Helen Bernhard, and Bettina Rockenbach (2008). "Egalitarianism in young children," *Nature*, 454(7208): 1079–1083.

Fehr, Ernst and Urs Fischbacher (2004). "Social norms and human cooperation," *Trends in Cognitive Sciences*, 8(4): 185–190.

Fehr, Ernst and Simon Gächter (2000). "Cooperation and punishment in public goods experiments," *American Economic Review*, 90(4): 980–994.

Fehr, Ernst, Daniela Glätzle-Rützler, and Matthias Sutter (2013). "The development of egalitarianism, altruism, spite and parochialism in childhood and adolescence," *European Economic Review*, 64(1): 369–383.

Fehr, Ernst, Michael Naef, and Klaus M. Schmidt (2006). "Inequality aversion, efficiency, and maximin preferences in simple distribution experiments: Comment," *American Economic Review*, 96(5): 1912–1917.

Gauri, Varun and Jorn Sonderholm (2012). "Global poverty: Four normative positions," *Journal Of Global Ethics*, 8: 193–213.

Hassoun, Nicole (2012). *Globalization andG Global Justice: Shrinking Distance, Expanding Obligations*, Cambridge University Press.

Henrich, Joseph Patrick (2004). *Foundations of human sociality: Economic experiments and ethnographic evidence from fifteen small-scale societies*, Oxford University Press.

Konow, James (1996). "A positive theory of economic fairness," *Journal of Economic Behavior and Organization*, 31(1): 13–35.

Konow, James (2000). "Fair Shares: Accountability and Cognitive Dissonance in Allocation Decisions," *American Economic Review*, 90(4): 1072–1091.

Malmendier, Ulrike and Klaus M. Schmidt (2017). "You owe me," *American Economic Review*, 107(2): 493–526.

Melis, Alicia P., Anna-Claire Schneider, and Michael Tomasello (2011). "Chimpanzees, pan troglodytes, share food in the same way after collaborative and individual food acquisitionchimpanzees,," *Animal*, 82(3): 485–493.

Rabbie, Jacob M and Murray Horwitz (1969). "Arousal of ingroup-outgroup bias by a chance win or loss," *Journal of personality and social psychology*, 13(3): 269–277.

Rawls, John (1971). *A Theory of Justice*, Harvard University Press.

Rawls, John (2001). *The Law of Peoples*, Harvard University Press.

Risse, Mathias (2012). *On Global Justice*, NJ: Princeton University Press.

Sen, Amartya (2009). *The Idea of Justice*, Harvard University Press.

Sherif, Muzafer (1967). *Group Conflict and Co-operation: Their Social Psychology*, Routledge & K. Paul.

Singer, Peter (2011). *The Expanding Circle: Ethics, Evolution, and Moral Progress*, Princeton, NJ: Princeton University Press.

Smeets, Paul, Rob Bauer, and Uri Gneezy (2015). "Giving behavior of millionaires," *Proceedings of the National Academy of Sciences*, 112(34): 10641–10644.

Starmans, Christina, Mark Sheskin, and Paul Bloom (2017). "Why people prefer unequal societies," *Nature Human Behaviour*, 1(82): 1–7.

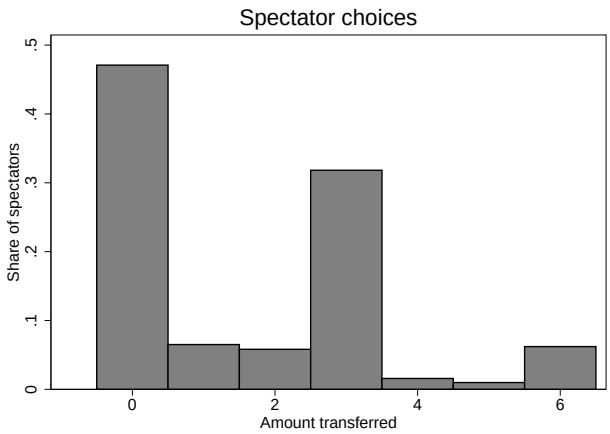
Tajfel, Henri (1970). "Experiments in intergroup discrimination," *Scientific American*, 223(5): 96–102.

Tajfel, Henri, Michael G Billig, Robert P Bundy, and Claude Flament (1971). "Social categorization and intergroup behaviour," *European Journal of Social Psychology*, 1(2): 149–178.

Tajfel, John, Henry & Turner (1979). "An integrative theory of intergroup conflict," in Stephen Austin, William G. & Worchel (ed.), "The social psychology of intergroup relations," chapter 3, Brooks/Cole Pub. Co.

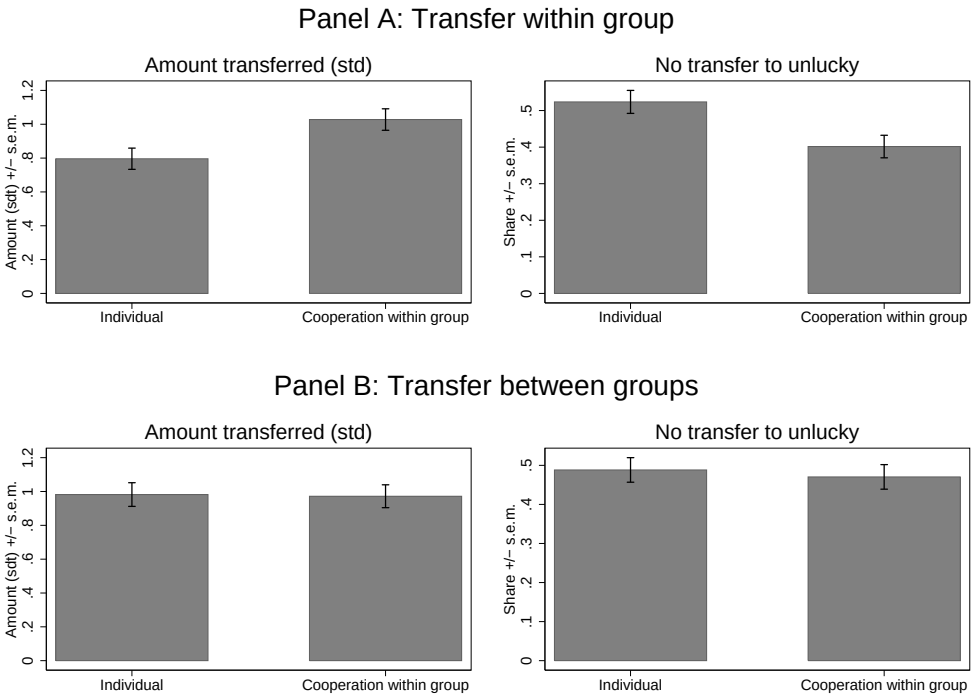
Wetherell, Margaret (1982). "Cross-cultural studies of minimal groups: Implications for the social identity theory of intergroup relations," in Henri Tajfel (ed.), "Social Identity and Intergroup Relations," Cambidge University Press.

Figure 1: Histogram of amount transferred



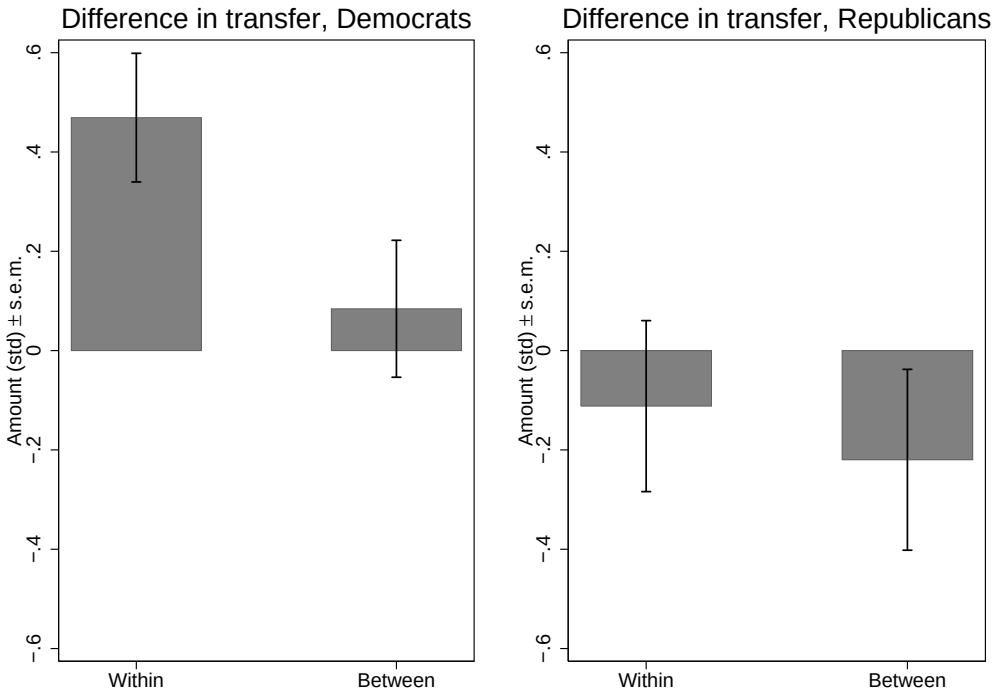
Note: The figure shows the histogram of amount transferred in USD.

Figure 2: Transfers to unlucky individuals, with and without cooperation



Note: The upper left panel shows the amount transferred (standardized) to the unlucky worker from another worker who belongs to the same group when the individuals worked independently or cooperated within the group. The upper right panel shows the share of spectators who transferred nothing to the unlucky worker in the same treatments. The lower panels show the corresponding results for the treatments where the transfer was between groups. The bars indicate standard errors.

Figure 3: Effect of cooperation on the amount transferred - within group and between groups



Note: The figure shows the difference in the amount transferred (standardized) to the unlucky worker when the workers worked independently and when they cooperated, for within group and between group transfers. The left panel shows the results for the Democrats and the right panel for the Republicans. The bars indicate standard errors.

Table 1: Overview of design

		Worker Production	
		Independent	Cooperation within group
Spectator Redistribution	Within group	T1	T2
	Between groups	T3	T4

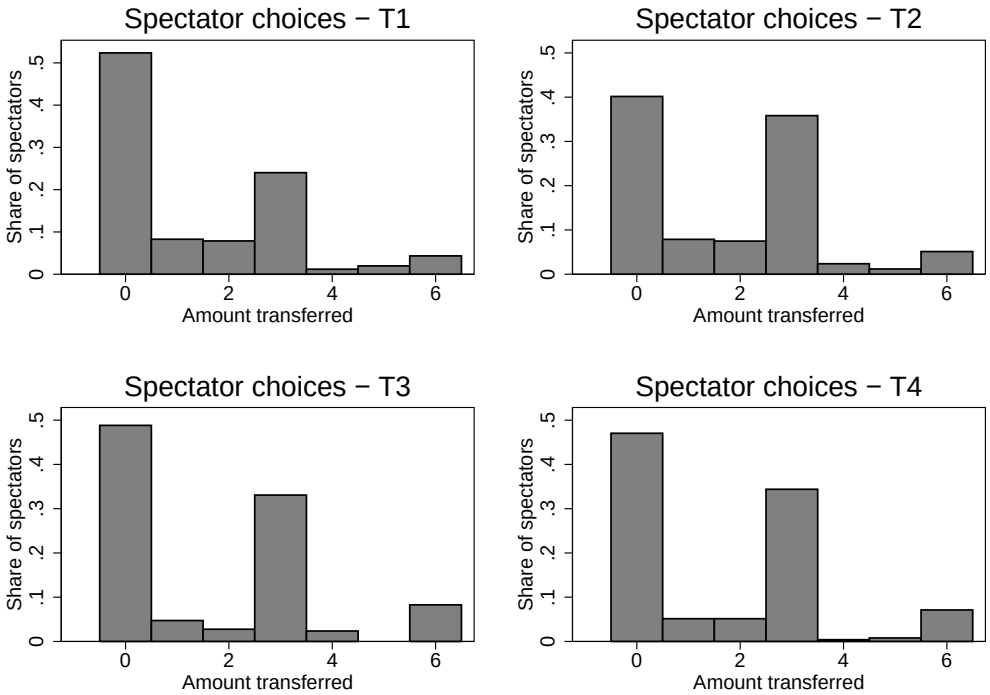
Note: The table provides an overview of the four treatments in the experiment, which differ in terms of production and redistribution. **Worker Production**: "Individual" implies that a worker's earnings was only determined by whether he or she completed the assignment; "Cooperation within group" implies that a worker's earnings also depended on whether the two other workers in the group completed the assignment. **Spectator Redistribution**: "Within group" implies that the spectator decision was about redistributing earnings between two workers from the same group; "Between group" implies that the spectator decision was about redistributing earnings between two workers from different groups.

A Appendix

In this appendix we provide supplementary figures and tables referred to in the text (A.1), and the instructions provided for the spectators in each of the four treatments (A.2).

A.1 Supplementary analysis

Figure A1: Histogram of amount transferred by treatment



Note: The figure shows the histogram of transferred amount in USD for each of the four treatments.

Table A1: Descriptive statistics - background variables for the spectator sample

	Full sample
Female (share)	0.52
Age (year)	
Median	41
p25	30
p75	53
Income (share)	
Less than 40 000	0.31
Between 40 000-75 000	0.28
More than 75 000	0.36
Republican (share)	0.31
Number of participants	1015

Note: The table displays the descriptive statistics for the background variables of the spectator sample.

Table A2: Regressions on transfer within group

	Amount transferred (std)		Transferred nothing	
	(1)	(2)	(3)	(4)
Cooperation	0.232***	0.237***	-0.122***	-0.123***
	(0.089)	(0.090)	(0.044)	(0.044)
Republican		-0.075		0.042
		(0.102)		(0.050)
High age		-0.030		0.129***
		(0.090)		(0.045)
Female		0.012		-0.014
		(0.091)		(0.044)
High income		-0.156*		0.087*
		(0.093)		(0.046)
Constant	0.796***	0.883***	0.524***	0.420***
	(0.063)	(0.088)	(0.031)	(0.047)
Observations	508	508	508	508
R^2	0.013	0.021	0.015	0.045

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The table reports OLS regressions on transfers when the two workers belong to the same group. The dependent variable in columns (1) and (2) is the standardized amount transferred to the unlucky worker. The dependent variable in columns (3) and (4) is an indicator for the spectator transferring nothing to the unlucky worker. "Cooperation" is an indicator for the spectator being assigned to a treatment where the workers cooperate within group. "Republican" is an indicator for the spectator self-reporting voting Republican. "High age" is an indicator for the spectator being above median age in the sample. "Female" is an indicator variable for the spectator being female. "High income" is an indicator for the spectator having an income above the median income in the sample. Standard errors in parentheses, where * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A3: Regressions on transfer between groups

	Amount transferred (std)		Transferred nothing	
	(1)	(2)	(3)	(4)
Cooperation	-0.010	-0.019	-0.018	-0.013
	(0.097)	(0.097)	(0.044)	(0.044)
Republican		-0.055		0.037
		(0.110)		(0.050)
High age		-0.277***		0.139***
		(0.098)		(0.045)
Female		-0.065		0.008
		(0.097)		(0.044)
High income		0.071		-0.039
		(0.101)		(0.046)
Constant	0.982***	1.143***	0.488***	0.418***
	(0.070)	(0.109)	(0.031)	(0.048)
Observations	507	507	507	507
R^2	0.000	0.019	0.000	0.023

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The table reports OLS regressions on transfers when the two workers belong to different groups. The dependent variable in columns (1) and (2) is the standardized amount transferred to the unlucky worker. The dependent variable in columns (3) and (4) is an indicator for the spectator transferring nothing to the unlucky worker. "Cooperation" is an indicator for the spectator being assigned to a treatment where the workers cooperate within group. "Republican" is an indicator for the spectator self-reporting voting Republican. "High age" is an indicator for the spectator being above median age in the sample. "Female" is an indicator variable for the spectator being female. "High income" is an indicator for the spectator having an income above the median income in the sample. Standard errors in parentheses, where * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A4: Regressions on transfer

	Amount transferred (std)		Transferred nothing	
	(1)	(2)	(3)	(4)
Cooperation	0.232***	0.234***	-0.122***	-0.122***
	(0.089)	(0.090)	(0.044)	(0.044)
Between	0.186**	0.183*	-0.035	-0.032
	(0.094)	(0.094)	(0.044)	(0.044)
Cooperation*Between	-0.242*	-0.251*	0.104*	0.109*
	(0.132)	(0.133)	(0.063)	(0.062)
Republican		-0.057		0.040
		(0.075)		(0.035)
High age		-0.156**		0.135***
		(0.067)		(0.032)
Female		-0.030		-0.001
		(0.066)		(0.031)
High income		-0.042		0.024
		(0.069)		(0.033)
Constant	0.796***	0.924***	0.524***	0.434***
	(0.063)	(0.079)	(0.031)	(0.040)
Observations	1015	1015	1015	1015
R^2	0.007	0.015	0.008	0.030

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The table reports OLS regressions on transfers. The dependent variable in columns (1) and (2) is the standardized amount transferred to the unlucky worker. The dependent variable in columns (3) and (4) is an indicator for the spectator transferring nothing to the unlucky worker. "Cooperation" is an indicator for the spectator being assigned to a treatment where the workers cooperate within group and "Between" is a dummy for the two workers belonging to different groups. "Republican" is an indicator for the spectator self-reporting voting Republican. "High age" is an indicator for the spectator being above median age in the sample. "Female" is an indicator variable for the spectator being female. "High income" is an indicator for the spectator having an income above the median income in the sample. Standard errors in parentheses, where * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A5: Heterogeneity - within group transfers

	Amount transferred (std)				
	1	2	3	4	5
Cooperation	0.387***	0.254**	0.135	0.251**	0.245
	(0.105)	(0.118)	(0.135)	(0.114)	(0.160)
Cooperation*Republican	-0.490**				-0.512**
	(0.200)				(0.204)
Cooperation*High age		-0.032			0.090
		(0.180)			(0.181)
Cooperation*Female			0.194		0.188
			(0.180)		(0.180)
Cooperation*High income				-0.039	0.014
				(0.186)	(0.186)
Republican	0.171	-0.074	-0.078	-0.073	0.177
	(0.147)	(0.102)	(0.102)	(0.103)	(0.147)
High age	-0.026	-0.014	-0.028	-0.030	-0.068
	(0.090)	(0.125)	(0.091)	(0.091)	(0.124)
Female	0.019	0.012	-0.084	0.013	-0.074
	(0.090)	(0.091)	(0.126)	(0.090)	(0.126)
High income	-0.136	-0.155*	-0.159*	-0.136	-0.147
	(0.093)	(0.093)	(0.092)	(0.131)	(0.129)
Constant	0.798***	0.875***	0.932***	0.875***	0.867***
	(0.092)	(0.096)	(0.095)	(0.096)	(0.107)
Observations	508	508	508	508	508
R^2	0.034	0.021	0.023	0.021	0.036

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The table reports OLS regressions on transfers when the two workers belong to the same group. The dependent variable is the standardized amount transferred to the unlucky worker. "Cooperation" is an indicator for the spectator being assigned to a treatment where the workers cooperate within group. "Republican" is an indicator for the spectator self-reporting voting Republican. "High age" is an indicator for the spectator being above median age in the sample. "Female" is an indicator variable for the spectator being female. "High income" is an indicator for the spectator having an income above the median income in the sample. Standard errors in parentheses, where * p < 0.10, ** p < 0.05, *** p < 0.01.

Table A6: Heterogeneity - between groups transfers

	Amount transferred (std)				
	1	2	3	4	5
C	0.065	-0.135	-0.222	-0.086	-0.336*
	(0.114)	(0.137)	(0.141)	(0.120)	(0.187)
Cooperation*Republican	-0.294				-0.335
	(0.214)				(0.218)
Cooperation*High age		0.242			0.288
		(0.193)			(0.195)
Cooperation*Female			0.395**		0.385**
			(0.194)		(0.194)
Cooperation*High income				0.187	0.218
				(0.202)	(0.202)
Republican	0.083	-0.061	-0.058	-0.062	0.083
	(0.156)	(0.110)	(0.110)	(0.110)	(0.157)
High age	-0.270***	-0.397***	-0.286***	-0.275***	-0.418***
	(0.098)	(0.139)	(0.098)	(0.098)	(0.139)
Female	-0.063	-0.070	-0.262*	-0.060	-0.257*
	(0.097)	(0.097)	(0.139)	(0.097)	(0.139)
High income	0.081	0.073	0.084	-0.022	-0.010
	(0.101)	(0.101)	(0.101)	(0.143)	(0.142)
Constant	1.092***	1.206***	1.246***	1.174***	1.297***
	(0.114)	(0.119)	(0.123)	(0.114)	(0.137)
Observations	507	507	507	507	507
R^2	0.022	0.022	0.027	0.020	0.036

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The table reports OLS regressions on transfers when the two workers belong to different groups. The dependent variable is the standardized amount transferred to the unlucky worker. "Cooperation" is an indicator for the spectator being assigned to a treatment where the workers cooperate within group. "Republican" is an indicator for the spectator self-reporting voting Republican. "High age" is an indicator for the spectator being above median age in the sample. "Female" is an indicator variable for the spectator being female. "High income" is an indicator for the spectator having an income above the median income in the sample. Standard errors in parentheses, where * p < 0.10, ** p < 0.05, *** p < 0.01.

A.2 Spectator instructions

TREATMENT 1

BACKGROUND SCREEN

We now ask you to make a choice that will have consequences for a real life situation. A few days ago, six individuals were independently recruited via an international online market place to conduct some work on their computers.

They were told that they could earn money if they succeeded in completing an assignment. For the assignment, the individuals were randomly matched in two groups, **group A** and **group B**, each consisting of **three individuals.**

Each group worked independently on the assignment in the following way:

- Each individual in the group was asked to complete a code recognition task, the same task for all individuals. If the individual completed the task, he or she succeeded in doing the assignment and earned $6.
- If one individual did not complete the task, that individual failed in doing the assignment and no one in the group earned anything.
- The individuals were anonymous and they could not communicate with each other.

The individuals were informed that after completion the assignment, one of the six individuals, chosen at random, would lose any earnings from the assignment. They were also told that another person (not one of the workers) would be informed about this and be given the opportunity to transfer money from one of the individuals who had not lost their earnings, chosen at random, to the individual who had lost his or her earnings. The individuals were not given any further information.

You are this other person and we will now tell you how these six individuals performed.

DECISION SCREEN

All three individuals in Group A **succeeded in completing the assignment.** As a result, each of the individuals in group A **earned $6.**

All three individuals in Group B **succeeded in completing the assignment.** As a result, each of the individuals in group B **earned $6.**

After the work was done, one individual in group A lost all his or her earnings. We now want you to choose whether to transfer money, from an individual in group A to the unlucky individual in group A.

The two individuals affected by your decision will receive the payment you decide within a few days. The four other individuals will be paid $6 for the assignment regardless of what you decide. None of the six individuals will receive any additional information.

Please state which of the following alternatives you choose:

I do not transfer:

- The unlucky individual in group A is paid \$0 and the selected individual in group A is paid \$6.

I do transfer:

- The unlucky individual in group A is paid \$1 and the selected individual in group A is paid \$5.
- The unlucky individual in group A is paid \$2 and the selected individual in group A is paid \$4.
- The unlucky individual in group A is paid \$3 and the selected individual in group A is paid \$3.
- The unlucky individual in group A is paid \$4 and the selected individual in group A is paid \$2.
- The unlucky individual in group A is paid \$5 and the selected individual in group A is paid \$1.
- The unlucky individual in group A is paid \$6 and the selected individual in group A is paid \$0.

TREATMENT 2

BACKGROUND SCREEN

We now ask you to make a choice that will have consequences for a real life situation. A few days ago, six individuals were independently recruited via an international online market place to conduct some work on their computers.

They were told that they could earn money if they succeeded in completing an assignment. For the assignment, the individuals were randomly matched in two groups, **group A** and **group B**, each consisting of **three individuals.**

Each group collaborated on the assignment in the following way:

- Each individual in the group was asked to complete a code recognition task, the same task for all individuals. If all three individuals in the group completed the task, the group succeeded in doing the assignment and each earned $6.
- If one individual in the group did not complete the task, the group failed in doing the assignment and no one in the group earned anything.
- The individuals in the group knew how their earnings depended on the others in the group, but they were anonymous and could not communicate with each other.

The individuals were informed that after completion the assignment, one of the six individuals, chosen at random, would lose any earnings from the assignment. They were also told that another person (not one of the workers) would be informed about this and be given the opportunity to transfer money from one of the individuals who had not lost their earnings, chosen at random, to the individual who had lost his or her earnings. The individuals were not given any further information.

You are this other person and we will now tell you how these six individuals performed.

DECISION SCREEN

Group A **succeeded in completing the assignment.** As a result of the successful collaboration, each of the individuals in group A **earned $6.**

Group B **succeeded in completing the assignment.** As a result of the successful collaboration, each of the individuals in group B **earned $6.**

After the work was done, one individual in group A lost all his or her earnings. We now want you to choose whether to transfer money, from an individual in group A to the unlucky individual in group A.

The two individuals affected by your decision will receive the payment you decide within a few days. The four other individuals will be paid $6 for the assignment regardless of what you decide. None of the six individuals will receive any additional information.

Please state which of the following alternatives you choose:

I do not transfer:

- The unlucky individual in group A is paid \$0 and the selected individual in group B is paid \$6.

I do transfer:

- The unlucky individual in group A is paid \$1 and the selected individual in group A is paid \$5.
- The unlucky individual in group A is paid \$2 and the selected individual in group A is paid \$4.
- The unlucky individual in group A is paid \$3 and the selected individual in group A is paid \$3.
- The unlucky individual in group A is paid \$4 and the selected individual in group A is paid \$2.
- The unlucky individual in group A is paid \$5 and the selected individual in group A is paid \$1.
- The unlucky individual in group A is paid \$6 and the selected individual in group A is paid \$0.

<u>TREATMENT 3</u>

BACKGROUND SCREEN

We now ask you to make a choice that will have consequences for a real life situation. A few days ago, six individuals were independently recruited via an international online market place to conduct some work on their computers.

They were told that they could earn money if they succeeded in completing an assignment. For the assignment, the individuals were randomly matched in two groups, **group A** and **group B**, each consisting of **three individuals.**

Each group worked independently on the assignment in the following way:

- Each individual in the group was asked to complete a code recognition task, the same task for all individuals. If the individual completed the task, he or she succeeded in doing the assignment and earned $6.
- If one individual did not complete the task, that individual failed in doing the assignment and no one in the group earned anything.
- The individuals were anonymous and they could not communicate with each other.

The individuals were informed that after completion the assignment, one of the six individuals, chosen at random, would lose any earnings from the assignment. They were also told that another person (not one of the workers) would be informed about this and be given the opportunity to transfer money from one of the individuals who had not lost their earnings, chosen at random, to the individual who had lost his or her earnings. The individuals were not given any further information.

You are this other person and we will now tell you how these six individuals performed.

DECISION SCREEN

All three individuals in Group A **succeeded in completing the assignment.** As a result, each of the individuals in group A **earned $6.**

All three individuals in Group B **succeeded in completing the assignment.** As a result, each of the individuals in group B **earned $6.**

After the work was done, one individual in group A lost all his or her earnings. We now want you to choose whether to transfer money, from an individual in group B to the unlucky individual in group A.

The two individuals affected by your decision will receive the payment you decide within a few days. The four other individuals will be paid $6 for the assignment regardless of what you decide. None of the six individuals will receive any additional information.

Please state which of the following alternatives you choose:

I do not transfer:

- The unlucky individual in group A is paid \$0 and the selected individual in group B is paid \$6.

I do transfer:

- The unlucky individual in group A is paid \$1 and the selected individual in group B is paid \$5.
- The unlucky individual in group A is paid \$2 and the selected individual in group B is paid \$4.
- The unlucky individual in group A is paid \$3 and the selected individual in group B is paid \$3.
- The unlucky individual in group A is paid \$4 and the selected individual in group B is paid \$2.
- The unlucky individual in group A is paid \$5 and the selected individual in group B is paid \$1.
- The unlucky individual in group A is paid \$6 and the selected individual in group B is paid \$0.

TREATMENT 4

BACKGROUND SCREEN

We now ask you to make a choice that will have consequences for a real life situation. A few days ago, six individuals were independently recruited via an international online market place to conduct some work on their computers.

They were told that they could earn money if they succeeded in completing an assignment. For the assignment, the individuals were randomly matched in two groups, **group A** and **group B**, each consisting of **three individuals.**

Each group collaborated on the assignment in the following way:

- Each individual in the group was asked to complete a code recognition task, the same task for all individuals. If all three individuals in the group completed the task, the group succeeded in doing the assignment and each earned $6.
- If one individual in the group did not complete the task, the group failed in doing the assignment and no one in the group earned anything.
- The individuals in the group knew how their earnings depended on the others in the group, but they were anonymous and could not communicate with each other.

The individuals were informed that after completion the assignment, one of the six individuals, chosen at random, would lose any earnings from the assignment. They were also told that another person (not one of the workers) would be informed about this and be given the opportunity to transfer money from one of the individuals who had not lost their earnings, chosen at random, to the individual who had lost his or her earnings. The individuals were not given any further information.

You are this other person and we will now tell you how these six individuals performed.

DECISION SCREEN

Group A **succeeded in completing the assignment.** As a result of the successful collaboration, each of the individuals in group A **earned $6.**

Group B **succeeded in completing the assignment.** As a result of the successful collaboration, each of the individuals in group B **earned $6.**

After the work was done, one individual in group A lost all his or her earnings. We now want you to choose whether to transfer money, from an individual in group B to the unlucky individual in group A.

The two individuals affected by your decision will receive the payment you decide within a few days. The four other individuals will be paid $6 for the assignment regardless of what you decide. None of the six individuals will receive any additional information.

Please state which of the following alternatives you choose:

I do not transfer:

- The unlucky individual in group A is paid \$0 and the selected individual in group B is paid \$6.

I do transfer:

- The unlucky individual in group A is paid \$1 and the selected individual in group B is paid \$5.
- The unlucky individual in group A is paid \$2 and the selected individual in group B is paid \$4.
- The unlucky individual in group A is paid \$3 and the selected individual in group B is paid \$3.
- The unlucky individual in group A is paid \$4 and the selected individual in group B is paid \$2.
- The unlucky individual in group A is paid \$5 and the selected individual in group B is paid \$1.
- The unlucky individual in group A is paid \$6 and the selected individual in group B is paid \$0.