



Substitution of social concerns under the Covid-19 pandemic

**Esther Blanco, Alexandra Baier, Felix Holzmeister, Tarek
Jaber-Lopez, Natalie Struwe**

Working Papers in Economics and Statistics

2020-30



University of Innsbruck
Working Papers in Economics and Statistics

The series is jointly edited and published by

- Department of Banking and Finance
- Department of Economics
- Department of Public Finance
- Department of Statistics

Contact address of the editor:
research platform "Empirical and Experimental Economics"
University of Innsbruck
Universitaetsstrasse 15
A-6020 Innsbruck
Austria
Tel: + 43 512 507 71022
Fax: + 43 512 507 2970
E-mail: eeecon@uibk.ac.at

The most recent version of all working papers can be downloaded at
<https://www.uibk.ac.at/eeecon/wopec/>

For a list of recent papers see the backpages of this paper.

Substitution of social concerns under the Covid-19 pandemic

Esther Blanco^{†,*} Alexandra Baier[†] Felix Holzmeister[‡]
Tarek Jaber-Lopez[§] Natalie Struwe[†]

[†] Department of Public Finance, University of Innsbruck

[‡] Department of Economics, University of Innsbruck

[§] EconomiX, Université Paris Nanterre

* Corresponding author: esther.blanco@uibk.ac.at

Abstract

Think tanks and political leaders have raised concerns about the implications that the Covid-19 response and reconstruction might have on other social objectives that were setting the international agenda before the Covid-19 pandemic. We present experimental evidence for eight consecutive weeks during April–May 2020 for Austria, testing the extent to which Covid-19 concerns might substitute other social concerns such as the climate crisis or the protection of vulnerable sectors of the society. We measure behavior in a simple donation task where participants receive €3 that they can distribute between themselves and different charities. While participants in one treatment have the opportunity to donate, if any, to eight different charities including a rich set of social concerns (*Baseline*), participants in a second treatment can choose to donate, if any, to the same charities and, in addition, to the *Covid-19 Solidarity Response Fund* for the World Health Organization (*Covid-19*). In a third treatment, participants can only decide on distributing the €3 between themselves and the *Covid-19 Solidarity Response Fund* (*Covid-19 Only*). Our results show that introducing the *Covid-19 Solidarity Response Fund* does not significantly change aggregate donations (donations represent 76.3% of endowment in *Baseline* and 70.2% in *Covid-19*, $t(584) = 1.938$, $p = 0.053$, $n = 585$). But, given positive donations to the *Covid-19 Solidarity Response Fund*, this entails significantly lower donations to the other eight charities (76.3% in *Baseline* and 60.8% in *Covid-19*, $t(584) = 5.868$, $p < 0.001$, $n = 585$). Moreover, our results point to a high support to the *WHO Covid-19 Fund*: In the treatment where the *WHO Covid-19 Fund* is the only available recipient, participants donate about 50% of their endowment (*Covid-19 Only*), while in the treatment where it is one out of nine recipients, donations are still 9.5% of endowment (*Covid-19*). Overall, our results indicate that donations to diverse social concerns are partially substituted by donations to the Covid-19 fund; yet, this substitution is far from replacing all other social concerns.

JEL: L3, D64, Q54, I3, D9

Keywords: Charitable donation, Covid-19 pandemic, climate crisis, poverty, substitution of social concerns.

Introduction

The Covid-19 pandemic is a dramatic event: As of October 10, 2020, there are more than 36 million confirmed cases in 235 countries with more than 1 Million confirmed deaths due to the disease (see the Statistics by the World Health Organization (*WHO*), <https://bit.ly/3gRoK9w>). These figures fall short to illustrate the suffering that the disease has brought: morbidity from milder cases, the economic struggle for citizens around the world losing their income, and the difficulty of access to basic needs such as education or regular health care. Simulations for the projections of the impact of the Covid-19 pandemic show the potential for enormous economic losses (1), severe implications in all *Sustainable Development Goals*, and an unprecedented negative change in the *Human Development Index* since 1990 (2).

Despite the dramatic effects driven by Covid-19, there are a collection of other pressing social issues affecting well-being. Scientists, supranational agencies, governments, charities, and numerous citizens around the world were devoting attention, effort, and financial resources to their social priorities (3). The United Nations' (*UN*) *Sustainable Development Goals* are a prime example of an ambitious initiative to transform the world by means of “*promoting prosperity while protecting the planet*” (2). Two overarching pre-Covid-19 social objectives were poverty alleviation (and good living conditions) and the climate crisis (and environmental conservation). These social objectives are interrelated with the Covid-19 pandemic (see the “Covid-19 Response” to each of the *UN Sustainable Development Goals*; 2). In short, environmental degradation (with the associated losses in wildlife habitats) and poverty place humans in greater contact with wildlife, increasing the chances of infectious disease spill-overs to humans (see, e.g. 4–8).

The interrelation of the Covid-19 pandemic, environmental degradation, and poverty, however, might be difficult to perceive for citizens concerned about Covid-19. This can translate into considering Covid-19 as an emergency independent of other social concerns, displacing the interest and actions of supranational agencies, national governments, charities, and citizens (9, 10). This substitution of social priorities, focusing on the Covid-19 pandemic at the expense of other social causes, has been a worry expressed recurrently during the Spring of 2020 by Think Tanks and political leaders. For example, the *Club of Rome* (11), political leaders such as those of the European Union (*EU*), and scientists (12) have raised the concern that the Covid-19 response and recovery could have a considerable impact on the mitigation of the climate crisis. Similarly, there have been worries about the continuation of the *Intergovernmental Panel on Climate Change* (*IPCC*) report (13). In addition, Mahler *et al.* (14) estimate that the Covid-19 pandemic might push about 40–60 million people into extreme poverty. Similarly, a common concern of scientists, governments and supra-national agencies is that the pandemic might induce a financial crisis amplifying inequality and severe poverty (15).

This study presents initial evidence on the substitution that concerns regarding the Covid-19 pandemic might have on other social priorities by means of a controlled experiment on donation to charities. These results respond to the call by the scientific community for economists to contribute to the understanding of the behavioral effects of the Covid-19 pandemic (16), contributing to the efforts by the economics discipline to generate cumulative evidence aiding policy-making (see <https://bit.ly/3jmBZk3>). We present results from a simple donation task where subjects are endowed with €3 that can be distributed between themselves and a list of charitable organizations which vary between treatments. In a *Baseline* setting, possible recipients are a list of eight charities representing diverse social concerns: *World Wide Fund for Nature* (*WWF*), *Doctors Without Borders* (*MSF*), *Amnesty International* (*AI*), *SOS Kinderdorf* (*SOS*),

Caritas (CAR), *Licht ins Dunkel (LID)*, *Oxfam (OXF)*, and the *Red Cross (RC)*. To measure potential substitution effects in donations between the various social concerns in the light of the Covid-19 pandemic, in a *Covid-19* treatment we include the *COVID-19 Solidarity Response Fund for WHO (WHO Covid-19 Fund)* in addition to these eight charities as a possible recipient for donations (for details about the fund, please refer to <https://covid19responsefund.org>.) Finally, in a *Covid-19 Only* treatment we include only the *WHO Covid-19 Fund* as a possible recipient. We add a 25% match to all donations to any charity whereby we donate an additional 25% to all donations made by participants. After the donation task, participants answer a questionnaire including questions on risk perceptions, actions, and motivations related to the Covid-19 pandemic, the climate crisis, and poverty. Our basic premise is that—during the early weeks of the Covid-19 pandemic in Europe—there would be a substitution of social concerns, with the Covid-19 pandemic capturing most of the attention. Moreover, we conjecture that risk perceptions regarding the Covid-19 pandemic would be the main mechanism explaining the attention placed to different social causes. The controlled experiment that we present allows us to test both conjectures.

We collected donations using an online experiment, starting on April 4, 2020 (week 1) on one day per week for eight consecutive weeks (Wednesday, Thursday or Friday depending on public holidays and semester deadlines). Each week, roughly 40 subjects participated in each treatment (*Baseline*: $n = 294$; *Covid-19*: $n = 291$; and *Covid-19 Only*: $n = 294$). Subjects participated in only one of the treatments and could only participate once. In addition, in week 2, we conducted a series of robustness tests (see further details in Materials and Methods).

Participants were students at the University of Innsbruck, Tyrol (Austria). Tyrol was the region worst affected by the Covid-19 pandemic in Austria, bordering the North of Italy and the South of Germany. The region reported the first cases on February 25, 2020 and entered a lock-down of all municipalities in the region for about seven weeks on March 16, 2020. Between end of March and mid April, there were roughly 2,000 active Covid-19 cases and by the end of the data collection on May 28, 2020 there had been a cumulative of 3,546 cases in a region with roughly 750,000 inhabitants. The data collection started one week before the lock-down of Tyrol lifted, on April 14th 2020. This entailed that people could go out of the house for a walk, a run, or cycling only accompanied with others inhabiting the same household and maintaining social distance. After the lock-down, people could as well start moving across municipalities in Tyrol. By the end of the data collection on May 28, 2020, a mask was mandatory in public spaces, and most aspects of daily live were in a "new normality" scenario (open schools, shops, restaurants and bars with accompanying safety regulation). Thus, the eight weeks of data collection comprised a time where the Covid-19 pandemic was highly relevant in subjects' daily life, the media, and government policy.

Results on substitution effects

In the treatment where participants can donate to the menu of eight charitable organizations (*Baseline*), the average donation is €2.29 ($sd = €1.08$; 76.3% of the endowment; see Fig. 1a). All charities receive positive donations on average, with values ranging from €0.09 ($sd = €0.29$) for *Caritas (CAR)* to €0.56 ($sd = €0.58$) for *Doctors Without Borders (MSF)* (see Fig. S7 in the Supplementary Material). Thus, participants' donation behaviour in *Baseline* embraces a diversity of social concerns. Once the *WHO Covid-19 Fund* is present in the menu of recipients (*Covid-19* treatment), the aggregate level of donations slightly

decreases to €2.11 ($sd = €1.12$; 70.2% of the endowment), with the difference not being statistically significant to that of the *Baseline* treatment ($t(584) = 1.938, p = 0.053, n = 585$).

When comparing the sum of donations to the eight charities, we observe significantly lower donations in *Covid-19* than in *Baseline* (see "Sum" in Fig. 1b). In the *Covid-19* treatment, the mean donation to the eight charities is €1.82 ($sd = €1.07$; 60.8% of the endowment), while in the *Baseline* condition ($n = 294$), the mean is €2.29 ($sd = €1.08$; 76.3% of the endowment; $t(584) = 5.868, p < 0.001, n = 585$). Therefore, introducing the *COVID-19 Solidarity Response Fund for WHO* significantly reduces the sum of donations to other social causes.

Separately considering the effect for each of the charities, we see a slight decrease for all (see Fig. 1b). These differences are statistically significant for half of the charitable organizations (*WWF*: $t(584) = 2.039, p = 0.042$; *AI*: $t(584) = 2.469, p = 0.014$; *CAR*: $t(584) = 2.830, p = 0.005$; and *OXF*: $t(584) = 3.377, p = 0.001$; $n = 585$ in all tests). Yet, we observe no significant differences on how donation levels across the different charities are affected by the presence of the *WHO Covid-19 Fund*. The only exception is a stronger reduction in donations for *Oxfam* as compared to the reduction in donations for *Doctors Without Borders* ($\chi^2(1) = 5.066, p = 0.024$) and the *Red Cross* ($\chi^2(1) = 6.496, p = 0.011$). Therefore, there is generally a similar decrease in donations for all other charities from introducing a specific Covid-19 response and relief charity.

In the treatment where participants could only donate to the *WHO Covid-19 Fund (Covid-19 Only)*, we see an average of €1.56 ($sd = €1.10$) donated (52.2% of the endowment; see Fig. 1a). This shows a high degree of interest in response and recovery to the Covid-19 pandemic. The average donation is significantly lower than the average donation in *Covid-19* where participants can split donations across a list of charitable organizations ($t(584) = 5.631, p < 0.001, n = 585$). Similarly, when the *WHO Covid-19 Fund* is one among several social causes, donations to the fund go down to €0.28 ($sd = €0.49$; 9.5% of the endowment), being significantly lower than donations in *Covid-19 Only* ($t(584) = 13.756, p < 0.001, n = 585$). This suggests that while subjects care about the Covid-19 pandemic, they also care about other social concerns and distribute donations among several charities.

Based on a robustness test conducted in week 2 with a smaller sample size ($n = 110$), all treatment results are robust to a 10-fold increase in the endowment to €30. Increasing the endowment increases aggregate donation and decreases percentage donations from the endowment, but does not significantly affect treatment differences reported in this section (see Section E in the Supplementary Materials).

Lastly, we explore the time evolution of total donations during the eight weeks of data collection (see Fig. S2 and additional tests in the Supplementary Materials). The evolution over time does not significantly differ between treatments and there is no monotonic time trend in the data during the period of 8 weeks that we study.

Results on risk perceptions, actions, and motivations

In this section we relate the data on participants' donations to their self-reported behavior, perceptions, and motivations from the questionnaires. The questionnaire included three separate blocks of questions, the first about the climate crisis, the second about the Covid-19 pandemic, and a third about poverty alleviation. For each of those we included sets of statements on participants' behavior, perceptions and motivations to which participants would state their agreement in a 5 Likert scale (see section C of the

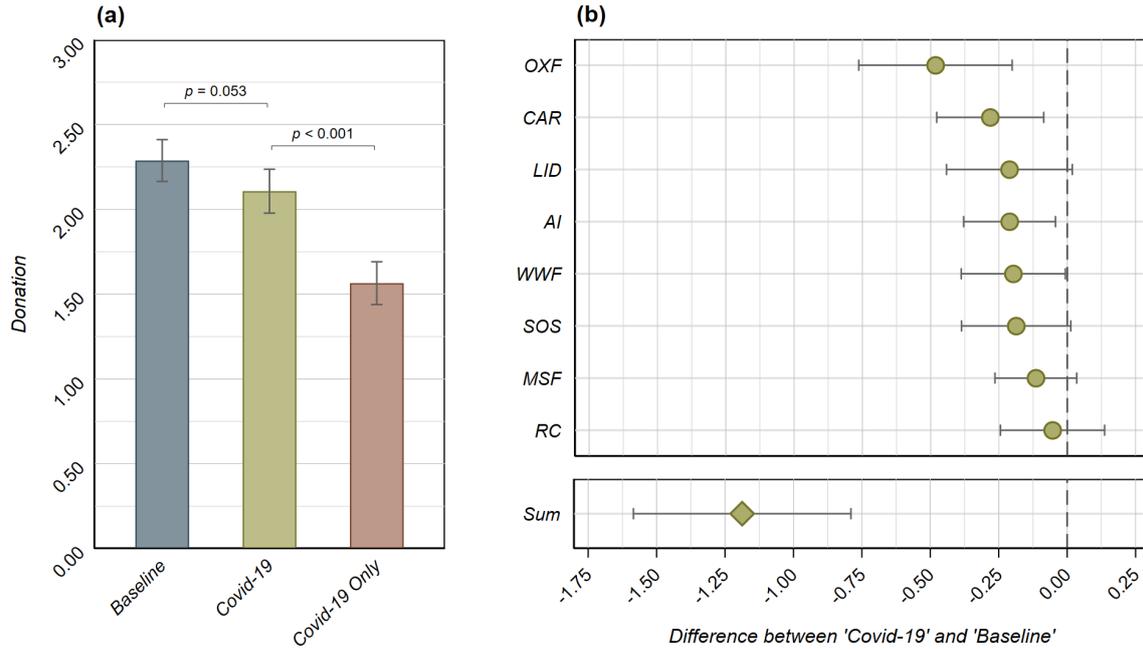


Figure 1: (a) Average donations (pooled across charities) per treatment in €. p -values are based on Tobit regressions with €0 and €3 as the lower and upper limit, respectively (endowment €3), and robust standard errors. (b) Point estimates and 95% confidence intervals (based on robust standard errors) of the differences in donations to the eight charities between the *Baseline* and the *Covid-19* treatment, based on Tobit regressions of the amount donated to the respective charitable organization on a treatment indicator for the *Covid-19* treatment (with €0 and €3 as the lower and upper limit, respectively, and robust standard errors). Negative values represent lower donations in the *Covid-19* treatment than the *Baseline* treatment. All pairwise comparisons between coefficients based on Wald tests after seemingly unrelated regressions (with robust standard errors) are insignificant, except for $OXF-MSF$ ($\chi^2(1) = 5.066$, $p = 0.024$) and $OXF-RC$ ($\chi^2(1) = 6.496$, $p = 0.011$). The estimate at the bottom indicates the difference in the sum of donations to the eight charitable organizations between the *Baseline* and the *Covid-19* treatment ($p < 0.001$).

Supplementary Material for further details). As expected, risk perceptions on the Covid-19 pandemic affect donations (see Tab. 1, column 1). When considering separately the perception of risk associated with other topics, risks perceptions associated with the climate crisis are also a significant driver of donation behavior, whereas risks related to poverty are not significant (see Tab. 1, columns 2 and 3 respectively). Moreover, once risk perceptions on the different topics are jointly considered, the perception of Covid-19-related risks is no longer significant (see Tab. 1, column 4).

Tab. 2 shows that once risk perceptions, actions, and motivations are considered jointly, actions associated with the three different topics are the only significant drivers of donation behavior prevalent in all topics, whereas risk perceptions are not. This holds true when considering each topic separately (Tab. 2, columns 1–3) as well as when considering all topics together (Tab. 2, column 4).

We also analyze the time evolution of survey responses (see Fig. S3). The same way that we did not see a clear reduction in the donations to the different charities, including not a clear pattern for the *WHO Covid-19 Fund* over time in the *Covid-19* nor in the *Covid-19 Only* treatment, we do not observe a systematic decrease in participants' risk perceptions, actions, nor motivations related to the Covid-19 pandemic for the eight weeks of our study (see Fig. S4–S5). Similarly, there is no monotonic pattern over time for the risk perceptions, actions nor motivations related to the climate crisis nor poverty.

Table 1: Tobit regressions of total donations on participants' risk perception regarding the Covid-19 pandemic, the climate crisis, and poverty (with €0 and €3 as lower and upper limit, respectively). All independent variables are z -standardized. Robust standard errors are provided in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

	(1)	(2)	(3)	(4)
Covid-19: Risk Perception	0.273** (0.097)			0.193 (0.100)
Climate: Risk Perception		0.358*** (0.098)		0.306** (0.103)
Poverty: Risk Perception			0.147 (0.097)	0.005 (0.099)
Constant	2.647*** (0.101)	2.648*** (0.101)	2.651*** (0.101)	2.646*** (0.100)
Observations	879	879	879	879
Pseudo R^2	0.003	0.006	0.001	0.008

Table 2: Tobit regressions of total donation on participants risk perception, actions, and motivations regarding the Covid-19 pandemic, the climate crisis, and poverty (with €0 and €3 as lower and upper limit, respectively). All independent variables are z -standardized. Robust standard errors are provided in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

	(1)	(2)	(3)	(4)
Covid-19: Risks	0.019 (0.108)			0.008 (0.107)
Covid-19: Actions	0.349** (0.111)			0.240* (0.110)
Covid-19: Motives	0.332** (0.114)			0.211 (0.123)
Climate: Risks		-0.030 (0.125)		0.023 (0.125)
Climate: Actions		0.518*** (0.114)		0.411*** (0.122)
Climate: Motives		0.258 (0.134)		-0.031 (0.156)
Poverty: Risks			-0.142 (0.108)	-0.104 (0.106)
Poverty: Actions			0.484*** (0.116)	0.260* (0.120)
Poverty: Motives			0.244* (0.124)	0.101 (0.144)
Constant	2.633*** (0.099)	2.630*** (0.099)	2.635*** (0.100)	2.620*** (0.098)
Observations	879	879	879	879
Pseudo R^2	0.017	0.022	0.017	0.033

Discussion & Conclusion

The results of this study are consistent with a partial substitution in donations to other social causes after the emergence of the Covid-19 pandemic. While results support a diversity of social concerns of respondents from Tyrol (Austria) during the early weeks after the lock-down during the Spring of 2020, there is some substitution: Measuring donations to eight charities, covering diverse social concerns, we see that donations to these charities significantly decrease when the *Covid-19 Solidarity Response Fund* is present as compared to when it is absent. This substitution effect derives from aggregate donations (including the eight charities and the *WHO Covid-19 Fund*) remaining stable, while donations to the *WHO Covid-19 Fund* being positive. Since aggregate pro-social behavior does not increase after incorporating the *WHO Covid-19 Fund*, and Covid-19 concerns are relevant to people, support to other causes decreases as a result. Overall, we find support for a partial substitution from donations to other charities to the *WHO Covid-19 Fund*, but far from overcoming support to other social concerns.

Our results also show that the possibility of donating to a Covid-19-specific recipient collects substantial funds to that cause. This illustrates a high degree of concern about Covid-19 among participants in our study, making pro-social efforts to support those in need. When the *WHO Covid-19 Fund* is the only possible recipient, donations account for more than half of the endowment. Yet, when considering Covid-19 concerns among the menu of social concerns, donations to the *WHO Covid-19 Fund* go down to 9.5% of endowment.

This study contributes to a large body of literature on the behavioral drivers of charitable donations (see, e.g., 17–23) and to ongoing projects specifically monitoring the Covid-19 pandemic impact on charitable organizations (see for example <https://bit.ly/3n1IjpQ> and <https://bit.ly/3cUQj12> listed at the Economics Observatory). Similarly, it relates to recent studies addressing how experience with the Covid-19 pandemic (24, 25) or information policies on the Covid-19 affect people’s pro-social behavior (26–28). More broadly, it contributes to the literature improving our understanding of the interconnections between the Covid-19 pandemic, economic well-being and environmental conservation (see, e.g. 29, 30). We provide initial evidence on the change in total donations, donations to the baseline set of eight charities covering a wide range of social concerns, and the distribution of donations across charities due to the introduction of an additional charitable recipient, the *WHO Covid-19 Fund*.

We also show that risk perceptions on the Covid-19 pandemic explain part of the variation in individual donations. However, these effects are no longer significant when including actions and motivations on the Covid-19 pandemic, the climate crisis, and poverty: Action on each of these topics turn out to be stronger drivers of donation behavior.

We interpret these results as illustrating society’s desire of keeping up the support for climate action and poverty alleviation jointly with fighting the direct and indirect consequences of the Covid-19 pandemic. This is consistent with the supranational policy for charitable action that was set during the Spring of 2020. For example, the *UN Sustainable Development Goals* have maintained their support in improving the living conditions of those less fortunate in society and for a healthier environment. During the course of our data collection (April and May, 2020), the United Nations have actually explicitly introduced the Covid-19 relation to each of the *UN Sustainable Development Goals*, highlighting the interrelation of the pandemic, economic well-being, as well as the environmental conservation. National governments have also followed this path of policy action, as illustrated, among others, by the *EU “Green Deal”* or the implementation of the universal basic income in Spain (31). Similarly, the scientific community has

been calling for policy design improving the relation of our economies with the natural environment and tackling inequalities (3, 9, 12, 15).

We hope that the initial evidence that we present here triggers further research in understanding the Covid-19 pandemic effects on social priorities and on the work and survival of charitable organizations. Beyond replication to other subject pools and lists of charities, future research could disentangle the role that the unit of operation of charities could have in the results. In a world of increasing focus within national (or regional) borders, the local, national or international orientation of charities could influence the support from donors. In addition, we look forward to statistical analyses on the funding of charities during 2020, including funding from private donors as well as from public agencies. Given restricted budgets and increasing needs from public administrations, reductions in public funding might be a stronger limitation for charities in a Covid-19 policy environment. Most importantly, we endorse the view (see also 16) that future research would benefit from multidisciplinary efforts to advance towards integrative rather than cumulative research from different disciplines in aiding policy-making during the challenging times of the Covid-19 pandemic.

References

1. D. Guan, D. Wang, S. Hallegatte, S. J. Davis, J. Huo, S. Li, Y. Bai, T. Lei, Q. Xue, D. M. Coffman, D. Cheng, P. Chen, X. Liang, B. Xu, X. Lu, S. Wang, K. Hubacek, P. Gong, Global supply-chain effects of COVID-19 control measures. *Nature Human Behaviour* **4**, 577–587 (2020).
2. United Nations, Sustainable development goals report 2020. (<https://bit.ly/3foFdks>) (2020).
3. H. H. Thorp, Time to pull together. *Science* **367**, 1282 (2020).
4. J. A. Patz, P. Daszak, G. M. Tabor, A. Aguirre, M. Pearl, J. Epstein, N. D. Wolfe, A. M. Kilpatrick, J. Foufopoulos, D. Molyneux, *et al.*, Unhealthy landscapes: Policy recommendations on land use change and infectious disease emergence. *Environmental Health Perspectives* **112**, 1092–1098 (2004).
5. K. E. Jones, N. G. Patel, M. A. Levy, A. Storeygard, D. Balk, J. L. Gittleman, P. Daszak, Global trends in emerging infectious diseases. *Nature* **451**, 990–993 (2008).
6. F. Keesing, L. K. Belden, P. Daszak, A. Dobson, C. Harvell, R. D. Holt, P. Hudson, A. Jolles, K. Jones, C. Mitchell, S. Myers, T. Bogich, R. Ostfeld, Impacts of biodiversity on the emergence and transmission of infectious diseases. *Nature* **468**, 647–652 (2010).
7. A. M. Kilpatrick, S. E. Randolph, Drivers, dynamics, and control of emerging vector-borne zoonotic diseases. *The Lancet* **380**, 1946–1955 (2012).
8. E. Dinerstein, A. R. Joshi, C. Vynne, A. T. L. Lee, F. Pharand-Deschenes, M. França, S. Fernando, T. Birch, K. Burkart, G. P. Asner, D. Olson, A “Global Safety Net” to reverse biodiversity loss and stabilize Earth’s climate. *Science Advances* **6**, eabb2824 (2020).
9. K. Hodges, J. Jackson, Pandemics and the global environment. *Science Advances* **6** (2020).
10. R. Naidoo, B. Fisher, Reset sustainable development goals for a pandemic world. *Nature* **583**, 198–201 (2020).
11. The Club of Rome, Open letter to global leaders — A healthy planet for healthy people. (<https://bit.ly/2DvreMp>) (2020).
12. D. Rosenbloom, J. Markard, A COVID-19 recovery for climate. *Science* **368**, 447 (2020).
13. J. Tollefson, Can the world’s most influential climate report carry on? *Nature News Q&A* (2020).
14. D. Mahler, C. Lakner, R. A. Castaneda-Aguilar, H. Wu, The impact of Covid-19 (Coronavirus) on global poverty: Why Sub-Saharan Africa might be the region hardest hit. *World Bank Blogs*, (<https://bit.ly/30wvyEl>).
15. J. von Braun, S. Zamagni, M. S. Sorondo, The moment to see the poor. *Science* **368**, 214 (2020).
16. D. Coyle, Economists must collaborate courageously. *Nature (World View)* **582**, 9 (2020).
17. J. Andreoni, Impure altruism and donations to public goods: A theory of warm-glow giving. *The Economic Journal* **100**, 464–477 (1990).
18. L. Vesterlund, The informational value of sequential fundraising. *Journal of public Economics* **87**, 627–657 (2003).
19. B. S. Frey, S. Meier, Social comparisons and pro-social behavior: Testing “conditional cooperation” in a field experiment. *American Economic Review* **94**, 1717–1722 (2004).
20. R. Bénabou, J. Tirole, Incentives and prosocial behavior. *American Economic Review* **96**, 1652–1678 (2006).

21. D. Ariely, A. Bracha, S. Meier, Doing good or doing well? Image motivation and monetary incentives in behaving prosocially. *American Economic Review* **99**, 544–55 (2009).
22. U. Gneezy, E. A. Keenan, A. Gneezy, Avoiding overhead aversion in charity. *Science* **346**, 632–635 (2014).
23. T. Garcia, S. Massoni, M. C. Villeval, Ambiguity and excuse-driven behavior in charitable giving. *European Economic Review* **124**, 103412 (2020).
24. P. Branas-Garza, D. Jorrat, A. Alfonso, A. Espín, T. Muñoz, J. Kovarik, Exposure to the Covid-19 pandemic and generosity in southern Spain. *Preprint* (2020).
25. J. Shachat, M. J. Walker, L. Wei, The impact of the Covid-19 pandemic on economic behaviours and preferences: Experimental evidence from Wuhan. *Working Paper*, 20–33 (2020).
26. M. Abel, W. Brown, Prosocial behavior in the time of COVID-19: The effect of private and public role models. *IZA Discussion Paper No. 13207* (2020).
27. M. Abel, T. Byker, J. Carpenter, Socially optimal mistakes? Debiasing COVID-19 mortality risk perceptions and prosocial behavior. *IZA Discussion Paper No. 13560* (2020).
28. Y. Guo, J. Shachat, M. J. Walker, L. Wei, Viral social media videos can raise pro-social behaviours when an epidemic arises. *ESI Working Paper 20-15*.
29. A. P. Dobson, S. L. Pimm, L. Hannah, L. Kaufman, J. A. Ahumada, A. W. Ando, A. Bernstein, J. Busch, P. Daszak, J. Engelmann, M. F. Kinnaird, B. V. Li, T. Loch-Temzelides, T. Lovejoy, K. Nowak, P. R. Roehrdanz, M. M. Vale, Ecology and economics for pandemic prevention. *Science* **369**, 379–381 (2020).
30. A. Goldthau, L. Hughes, Protect global supply chains for low-carbon technologies. *Nature (Comment)* **585**, 28–30 (2020).
31. C. Arnold, Pandemic speeds largest test yet of universal basic income. *Nature* **583**, 502–503 (2020).
32. O. Bock, I. Baetge, A. Nicklisch, hroot: Hamburg registration and organization online tool. *European Economic Review* **71**, 117–120 (2014).
33. LimeSurvey Project Team, *LimeSurvey: An open source survey tool*, LimeSurvey Project (Hamburg, Germany, 2012), (<http://www.limesurvey.org>).
34. C. C. Eckel, P. J. Grossman, Rebate versus matching: does how we subsidize charitable contributions matter? *Journal of Public Economics* **87**, 681–701 (2003).
35. C. C. Eckel, P. J. Grossman, R. M. Johnston, An experimental test of the crowding out hypothesis. *Journal of Public Economics* **89**, 1543–1560 (2005).
36. E. Blanco, T. Haller, J. Walker, Externalities in appropriation: Responses to probabilistic losses. *Experimental Economics* **20**, 793–808 (2017).

Acknowledgements: We thank all the participants in the sessions for their time and generous donations to the charities. We also thank Tobias Trojok for assistance in developing the questionnaire. We thank Loukas Balafoutas, Ivo Steimanis, Björn Vollan, and James M. Walker for their discussions and comments on previous drafts of the manuscript.

Funding: Funding was provided by FWF P 32859.

Data and materials availability: All data and materials are available at <https://osf.io/kgr74/>.

Supplementary Materials:

- Materials and Methods
- Experimental Instructions
- Survey questions
- Supplementary analysis
- Robustness checks
- Table S1
- Figs. S1–S7

Supplementary Material

Substitution of social concerns under the Covid-19 pandemic

Esther Blanco^{†,*} Alexandra Baier[†] Felix Holzmeister[‡]
Tarek Jaber-Lopez[§] Natalie Struwe[†]

[†] Department of Public Finance, University of Innsbruck

[‡] Department of Economics, University of Innsbruck

[§] EconomiX, Université Paris Nanterre

* Corresponding author: esther.blanco@uibk.ac.at

Contents

A	Materials and Methods	1
B	Experimental instructions	3
C	Survey questions	5
D	Supplementary analysis	9
E	Robustness checks	13

A. Materials and Methods

Procedure. Subjects were recruited from the standard student subject pool of the University of Innsbruck using *hroot* (32). Running online experiments implemented in *LimeSurvey* (33), we collected data on three main treatment conditions – *Baseline*, *Covid-19*, and *Covid-19 Only*– as well as several robustness treatments explained in detail below. Subjects only participated in one of the treatment conditions in a between-subjects design and could only participate once. Upon receiving the invitation, subjects were informed that this was an online experiment that would last approx. 20 minutes (on average it took 20 minutes). As payment options we offered transactions via PayPal or Amazon vouchers.

On one day of each week, for a total of eight consecutive weeks, we conducted three experimental sessions with up to 40 participants in each treatment, leading to a total number of 24 sessions and 879 subjects in three main treatments (*Baseline*: $n = 294$; *Covid-19*: $n = 291$; and *Covid-19 Only*: $n = 294$). In addition, in week 2, we collected data on 110 subjects in three high stakes treatments and 124 in three replication treatments. The average earnings of participants were €1.01 ($sd = €1.14$) in the main treatments, €12.15 ($sd = €10.79$) in the high stakes treatments, and €1.19 ($sd = €1.21$) in the replication treatments.

For each date at which data was collected, invitations were made for three identical, simultaneously running sessions. Subjects who registered for the experiment were randomly allocated to one of the three sessions. Subjects were told that they could participate in the experiment as soon as they received the link which was distributed at 10am, and that participation was possible until 8pm on the same day. After 8pm the experimental sessions would be closed and the links deactivated.

At the end of each experimental session, the sum of donations across all treatments was transferred to each of the organizations via bank transfers. A depersonalized summary of all individual donations as well as the total amount of money paid to each organization was made available on the website of the corresponding author (E. Blanco) after each experimental session. The payment to participants was transferred within three working days by one of the co-authors.

Experimental design. Each of the main treatments consisted of a donation-to-charity task, similar to Eckel and Grossman (34) and Eckel *et al.* (35), followed by a questionnaire. In the donation task, subjects were endowed with €3 to be distributed among themselves and various charitable organizations. The list of available charities varied between treatments. In the high stakes treatments, subjects had €30 to distribute between themselves and the charitable organizations.

In the *Baseline* treatment, the list of charitable organizations included eight charities, namely *World Wide Fund for Nature (WWF)*, *Doctors Without Borders (MSF)*, *Amnesty International (AI)*, *SOS Kinderdorf (SOS)*, *Caritas (CAR)*, *Licht ins Dunkel (LID)*, *Oxfam (OXF)*, and the *Red Cross (RC)*. This list was chosen to reflect a broad range of social concerns. In the *Covid-19* treatment, the *Covid-19 Solidarity Response Fund for WHO* was added to the list of charitable organizations used in *Baseline*, for a total of nine charities. In *Covid-19 Only*, the *WHO Covid-19 Fund* was the only available recipient.

In all treatments the decision screen included the mission statement of each of the charities. In the *Baseline* and *Covid-19* treatments, participants could distribute their endowment across multiple charities, if any, and themselves. In all treatments, donations were matched at a rate of 25%, i.e., we donated an additional 25% to all donations made by participants. The individual earnings of the experiment are defined by the amount of the €3 (€30 for high stakes) that subjects kept for themselves. The instructions of the experiment are presented in Section B of the Supplementary Material.

After completing the donation task, subjects answered a questionnaire containing several questions on risk perception, actions, and motivations regarding the Covid-19 pandemic, the climate crisis, and poverty, respectively (see section C of the Supplementary Material). All single survey items are z -standardized (across all three treatments in the main experiment). The measures used in the analyses are constructed as the sum of the standardized responses of the items belonging to the particular inventory; this measure is finally z -standardized again, such that all measures used in the analyses have a mean of zero and a standard deviation of one.

B. Experimental instructions

The instructions were in German. Below (in italics) we present English translations. We present here the instructions used in the *Baseline* and *Covid-19* treatments; for *Covid-19 Only* the wording was adapted such that it corresponds to a donation decision with a single charitable organization (rather than a set of charities). Fig. S1 presents a screenshot from the decision-making screen in *LimeSurvey* for the *Covid-19* treatment.

In this part of the experiment you will be paired with a set of charities. You will be making decisions for a total of 3 Euros; you must decide how many Euros (if any) you allocate to one or several of the charities below and how many Euros (if any) you take for yourself. For every euro you allocate to a charity, we will transfer in addition 25 cents to the charity.

At the end of today's experimental session, the principal investigator of this project, Dr. Esther Blanco, will pool the money all participants have allocated to each one of the charities and will make an online payment for the sum of money plus 25 cents for every Euro.

You will have available a list of all individual contributions to each charity (without participant names) as well as the total sum of money paid to each one of the charities on the personal webpage of Dr. Blanco.

*Anzahl Euro, die Sie zuweisen möchten (von 0 bis 3 Euro):

Die Summe muss gleich 3 sein.
Jede Antwort muss zwischen 0 und 3 sein

WWF	<input type="text"/>
Ärzte ohne Grenzen	<input type="text"/>
Amnesty International	<input type="text"/>
SOS Kinderdorf	<input type="text"/>
Caritas	<input type="text"/>
Licht ins Dunkle	<input type="text"/>
Oxfam	<input type="text"/>
Rotes Kreuz	<input type="text"/>
WHO Covid-19 Solidaritätsfond	<input type="text"/>
ICH SELBST	<input type="text"/>
Verbleibend:	3
Gesamt:	0

Figure S1: Decision-making screen in LimeSurvey for *Covid-19* treatment

Mission Statements:

WWF's mission is to conserve nature and reduce the most pressing threats to the diversity of life on Earth (<https://worldwildlife.org>).

Doctors Without Borders provides assistance to populations in distress, to victims of natural or man-made disasters and to victims of armed conflict (<https://doctorswithoutborders.org>).

Amnesty International is committed to the enforcement of the Universal Declaration of Human Rights and other rights which are part of international human rights agreements (<https://amnesty.at>).

In the center of **SOS Children's Villages** is the effort to provide children who have lost their parents or can no longer live with them, with a lasting and permanent home and a stable environment (<https://sos-kinderdorf.at>).

Independent from their social, national or religious affiliation, **Caritas** supports and accompanies people in difficult life situations, who suffer from illness or disability as a consequence of accidents or disasters (<https://caritas.at>).

The philosophy of the organization **Licht ins Dunkel** is the material and emotional support of disabled children and their families, physically and mentally disabled people in Austria, as well as the promotion of the objectives of its members as set in the organization charta. (<https://lichtinsdunkel.orf.at>).

Oxfam is an independent relief and development organization. We are convinced that poverty and injustice are preventable and can be overcome (<https://oxfam.de>).

The Red Cross mission is to improve the lives of people in need and vulnerable groups through the power of humanity (<https://roteskreuz.at>).

WHO Covid-19 Solidarity Response Fund: We are all affected by the growing COVID-19 pandemic. It's an unprecedented health challenge and we know people and organizations everywhere want to help. The World Health Organization is leading and coordinating the global effort, supporting countries to prevent, detect, and respond to the pandemic. (<https://covid19responsefund.org>).

C. Survey questions

The survey consisted of three main blocks, addressing participants' (a) perception of risks, (b) actions, and (c) motivations related to (i) the Covid-19 pandemic, (ii) the climate crisis, and (iii) poverty. The survey questions used in each of these inventories are provided below. Additionally, participants were asked to answer some general questions on socio-economic details, subjects' perception of how relevant a charity's work is regarding alleviating the consequences of the Covid-19 pandemic, as well as subjects' history of donation and charity work. The survey items were displayed to the participants via *LimeSurvey* using matrix questions (or open text field questions, where applicable). We report below the complete ex-post questionnaire. Questions Q1-Q8 and Q11-Q15 were part of the analyses reported in this study.

Questions on the Covid-19 pandemic

- **Risk perception: (Q1)** To what extent do you agree with the following statements about the Covid-19 disease? (Answers ranging from 1: "I fully disagree" ... to ... 5: "I fully agree"): (i) Covid-19 will limit our lives for months; (ii) The disease is worse than a conventional flu; (iii) The risk of becoming infected with the virus for me or my family and friends is high; (iv) I feel anxious when acquaintances are (were) infected with Covid-19; (v) I am not concerned with my generation, but with older people in society; (vi) A vaccine against the virus will be developed during the summer; (vii) There will be (have been) food shortages during the crisis; (viii) Due to the restrictions, there will be (has been) a severe economic recession; (ix) I am afraid of losing my job because of the situation.
- **Actions: (Q2)** For each of the following actions, please indicate the respective frequency at which you undertake them. (Answers ranging from 1: "Never" ... to ... 5: "Always"): (i) I wash my hands at least 20 seconds after having left the house; (ii) When I am not at home, I keep a minimum distance of 1.5 meters from other people; (iii) I help the group most at risk to do their shopping so that they do not have to leave the house; (iv) I am wearing a mask in public; (v) I make sure that hygienic measures are also implemented in my house; (vi) I try to avoid public transport; (vii) I try to go shopping rarely, and only when the shops are less crowded.

(Q3) How do you rate the following statements in relation to the measures taken in spring 2020 to contain the spread of Covid-19 (e.g., regional lock-downs)? (Answers ranging from 1: "Not true at all" ... to ... 5: "Completely true") (i) The measures are (were) annoying me; (ii) The measures taken are (were) important and appropriate; (iii) The measures taken are (have been) followed by the majority of the population.
- **Motives: (Q4)** To what extent do you agree with the following statements? It is important to me to help contain the spread of Covid-19, because... (Answers ranging from 1: "I fully disagree" ... to ... 5: "I fully agree"): (i) I want to protect my fellow human beings; (ii) otherwise, I fear that the virus will remain a constant companion; (iii) friends or family are (have been) already infected; (iv) I think that makes a good citizen; (v) I want life to return to normal as soon as possible; (vi) I want to follow governmental regulations; (vii) a further spread of the virus would threaten me financially; (viii) the collapse of the health system must be prevented; (ix) the pressure from family and friends has a huge impact on me; (x) my parents gave me these values; (xi) it is important for my religion.

Questions on the climate crisis

- **Risk perception: (Q5)** To what extent do you agree with the following statements? (Answers ranging from 1: “I fully disagree” ... to ... 5: “I fully agree”): (i) The risk of severe weather events will increase if society does not act against climate change; (ii) Our climate has already changed sustainably; (iii) I am afraid of climate change; (iv) Climate change will limit our lives; (v) Long periods of drought can lead to water shortages also for us; (vi) Due to climate change, there will be food shortages; (vii) Due to climate change, there will be a severe economic recession; (viii) I am afraid of losing my job due to climate change.
- **Actions: (Q6)** For each of the following actions, please indicate the respective frequency at which you undertake them. (Answers ranging from 1: “Never” ... to ... 5: “Always”): (i) I use the car; (ii) I use a bike or walk; (iii) I fly with an airplane; (iv) I use public transport; (v) I switch my devices to stand-by-mode; (vi) I eat meat; (vii) I buy seasonal and regional products; (viii) I conscientiously separate my waste; (ix) I pay a CO2 compensation when buying train, bus or plane tickets.

(Q7) How would you describe your behavior over the past 12 months on the following points? (Answers ranging from 1: “Reduced by a lot” ... to ... 5: “Increased a lot”): (i) The use of cars; (ii) The use of public transports; (iii) Flying on airplanes; (iv) My consumption of meat; (v) The production of waste; (vi) The payments of CO2 compensations; (vii) My consumption of regional and seasonal products.

(Q8) To what extent do you agree with the following statements? (Answers ranging from I fully disagree ... to ... I fully agree): (i) I try to make my consumption as sustainable as possible; (ii) I try to reduce my consumption in order to reduce my carbon footprint; (iii) Due to climate change, I changed the destination, the length or my general picture of vacations.

(Q9) For each of the following measures, please indicate whether you or your family have taken them. (Answer possibilities 1: “Yes”, 2: “Unsure”, 3: “No”): (i) Buying insurance due to the risk of flooding, storm and heat damage; (ii) Measures to reduce thermal stress e.g. Fan, air conditioning; (iii) Protection against flooding e.g. remove valuable items from the basement, sandbags, water pumps; (iv) Protection against increased UV radiation, e.g. by applying sun blockers, wearing long clothes or stay in areas protected from the sun.

(Q10) Have you or your family invested money in any of the above measures in the past 12 months? (Answers possibilities 1: “No, none of these measures have been taken”, 2: “No, the measures that were taken were free”, 3: “• Yes, in total approximately this amount:...”).
- **Motives: (Q11)** To what extent do you agree with the following statements? It is important to me to reduce my influence on climate change because... (Answers ranging from 1: “I fully disagree” ... to ... 5: “I fully agree”): (i) I care about the well-being of future generations; (ii) I represent values that rely on sustainability; (iii) I care about the planet’s biodiversity; (iv) I believe that climate protection makes a good citizen; (v) it is an important topic in my circle of friends; (vi) my parents gave me values that concern sustainability; (vii) it is important for my religion; (viii) Climate change may weaken our economy sustainably; (ix) I fear that environmental disasters will increase; (x) I care about the living conditions in the future; (xi) my family is directly affected by climate change; (xii) I want to continue planning my vacation regardless of climate change.

Questions on poverty

- **Risk perception: (Q12)** To what extent do you agree with the following statements? (Answers ranging from 1: “I fully disagree” ... to ... 5: “I fully agree”): (i) Severe poverty will lead to further refugee crises; (ii) Crime is a risk factor that arises from poverty; (iii) Global poverty has worsened in the past 12 months; (iv) I am afraid that the consequences of poverty will affect me; (v) Tourism is negatively impacted by the uncertainty that results from crime in low-income countries.
- **Actions: (Q13)** For each of the following statements, please indicate the respective frequency at which you have undertaken them in the past 12 months. (Answers ranging from 1: “Never” ... to ... 5: “Always”): (i) I gave money to poor people; (ii) I bought food for poor people; (iii) I bought fair produced products; (iv) I took vacations that are morally acceptable .

(Q14) To what extent do you agree with the following statements? (Answers ranging from 1: “I fully disagree” ... to ... 5: “I fully agree”): (i) I am worried about the poverty in the world; (ii) I am concerned about the poverty in my country; (iii) I am concerned about the refugee crisis; (iv) I think everyone should pay taxes to have a fair redistribution system; (v) I take care of the welfare of refugees.

- **Motives: (Q15)** To what extent do you agree with the following statements? It is important to me to participate in the fight against poverty because... (Answers ranging from 1: “I fully disagree” ... to ... 5: “I fully agree”): (i) I care about the well-being of future generations; (ii) My values stand for a fair world; (iii) I am aware that I was privileged growing up in a developed country; (iv) Many low-income countries will become even poorer without interventions; (v) I believe that participating in the fight against poverty makes a good citizen; (vi) My parents gave me values that encourage me to act against poverty; (vii) It is important for my religion; (viii) I am afraid that poverty will increase crime that can affect me; (ix) Poverty and refugee waves could weaken our economy sustainably; (x) I fear that otherwise there will be more refugee crises; (xi) I do not want to make my future vacation plans dependent on poverty problems in other countries.

Additional Questions

- **Socio-economic questions: (Q16)** (i) What is your gender?; (ii) How old are you?; (iii) What is your nationality?; (iv) What is your marital status?; (v) What is your field of study?; (vi) In which countries or regions have you been living since February 2020?; (vi) In which countries or regions have your family and close friends been living since February 2020?.
 - **History of donation and volunteering: (Q17)** (i) Are you a member of charity or non-governmental organizations (NGOs)?; (ii) Have you volunteered for charitable organization(s) in the past 12 months? ; (iii) Have you donated to one or more charities or NGOs during the past year? ;
 - **General questions to the organisations and questions on trust: (Q18)** How much do you trust the people in the following groups? (Answers ranging from 1: “Trust completely” ... to ... 5: “Do not trust at all”): (i) Your family; (ii) Your neighbors; (iii) Other students of the University of Innsbruck; (iv) Somebody you meet for the first time.
- (Q19)** I know the work of the organisation: (Answers ranging from 1: “Very well” ... to ... 5: “Never heard before”): (i) WWF; (ii) Doctors Without Borders; (iii) Amnesty International; (iv) SOS Kinderdorf; (v) Caritas; (vi) Licht ins Dunkel; (vii) Oxfam; (viii) Red Cross; (ix) WHO Covid-19 Response Fund.

(Q20) I trust the work of the organisation: (Answers ranging from 1: “Trust completely” ... to ... 5: “Do not trust at all”): (i) WWF; (ii) Doctors Without Borders; (iii) Amnesty International; (iv) SOS Kinderdorf; (v) Caritas; (vi) Licht ins Dunkel; (vii) Oxfam; (viii) Red Cross; (ix) WHO Covid-19 Response Fund.

(Q21) I think the organisation’s help is: (Answers ranging from 1: “Exclusively international” ... to ... 5: “Exclusively national”): (i) WWF; (ii) Doctors Without Borders; (iii) Amnesty International; (iv) SOS Kinderdorf; (v) Caritas; (vi) Licht ins Dunkel; (vii) Oxfam; (viii) Red Cross; (ix) WHO Covid-19 Response Fund.

(Q22) How relevant do you think is the work of the following organizations in relation to the Covid-19 disease?: (Answers ranging from 1: “Not at all relevant” ... to ... 5: “Very relevant”): (i) WWF; (ii) Doctors Without Borders; (iii) Amnesty International; (iv) SOS Kinderdorf; (v) Caritas; (vi) Licht ins Dunkel; (vii) Oxfam; (viii) Red Cross; (ix) WHO Covid-19 Response Fund.

D. Supplementary analysis

Looking into the time evolution of total donations during the eight weeks of data collection (see Fig. S2), we observe some variation over time, with the level of donations across the different treatments being correlated. A Tobit regression of total donations on treatment indicators, time, and the interaction terms thereof suggests that the evolution over time does not significantly differ between treatments (*Covid-19* \times *Time*: $t(874) = 0.194$, $p = 0.846$; *Covid-19 Only* \times *Time*: $t(784) = 0.369$; $p = 0.712$; $n = 879$). The (Spearman) correlations between mean donations (per date at which data has been collected) between treatments are high and statistically significant (*Baseline* vs. *Covid-19*: $\rho_S = 0.905$, $p = 0.002$; *Covid-19* vs. *Covid-19 Only*: $\rho_S = 0.810$, $p = 0.015$; $n = 8$).

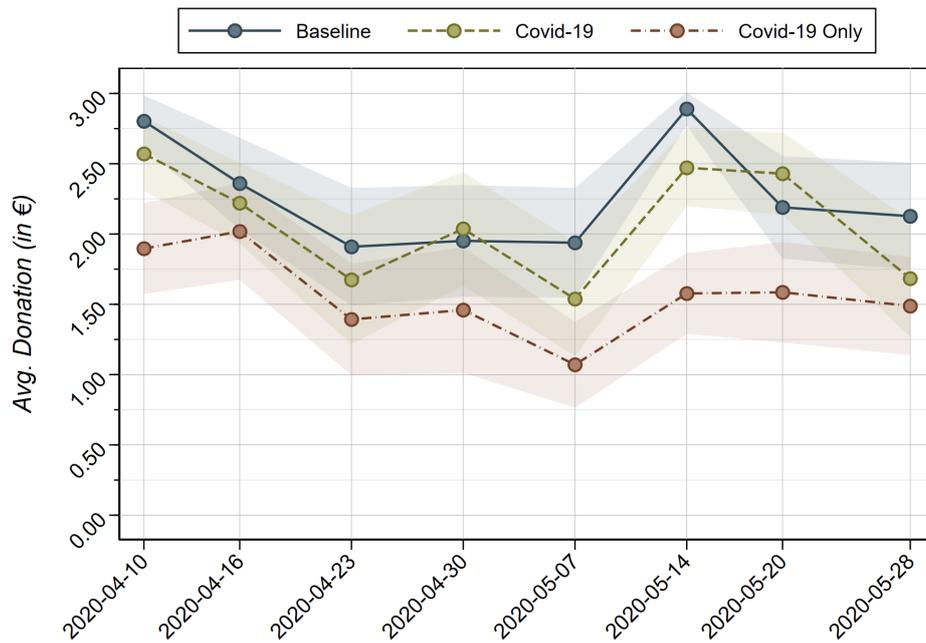


Figure S2: Evolution of average donations in € (pooled across charities) per treatment over the eight consecutive weeks of data collection. Shaded areas indicate 95% confidence intervals. The differences (based on Tobit regressions of total donations on a treatment indicator, with €0 and €3 as the lower and upper limit, respectively, and robust standard errors) between treatments *Baseline* and *Covid-19* are insignificant for each date, except for 2020-05-14 ($t(84) = 2.192$, $p = 0.031$). The differences between treatments *Covid-19* and *Covid-19 Only* are statistically significant on three dates: 2020-04-10 ($t(74) = 3.191$, $p = 0.002$), 2020-05-14 ($t(88) = 4.325$, $p < 0.001$), and 2020-05-20 ($t(69) = 3.307$, $p = 0.001$).

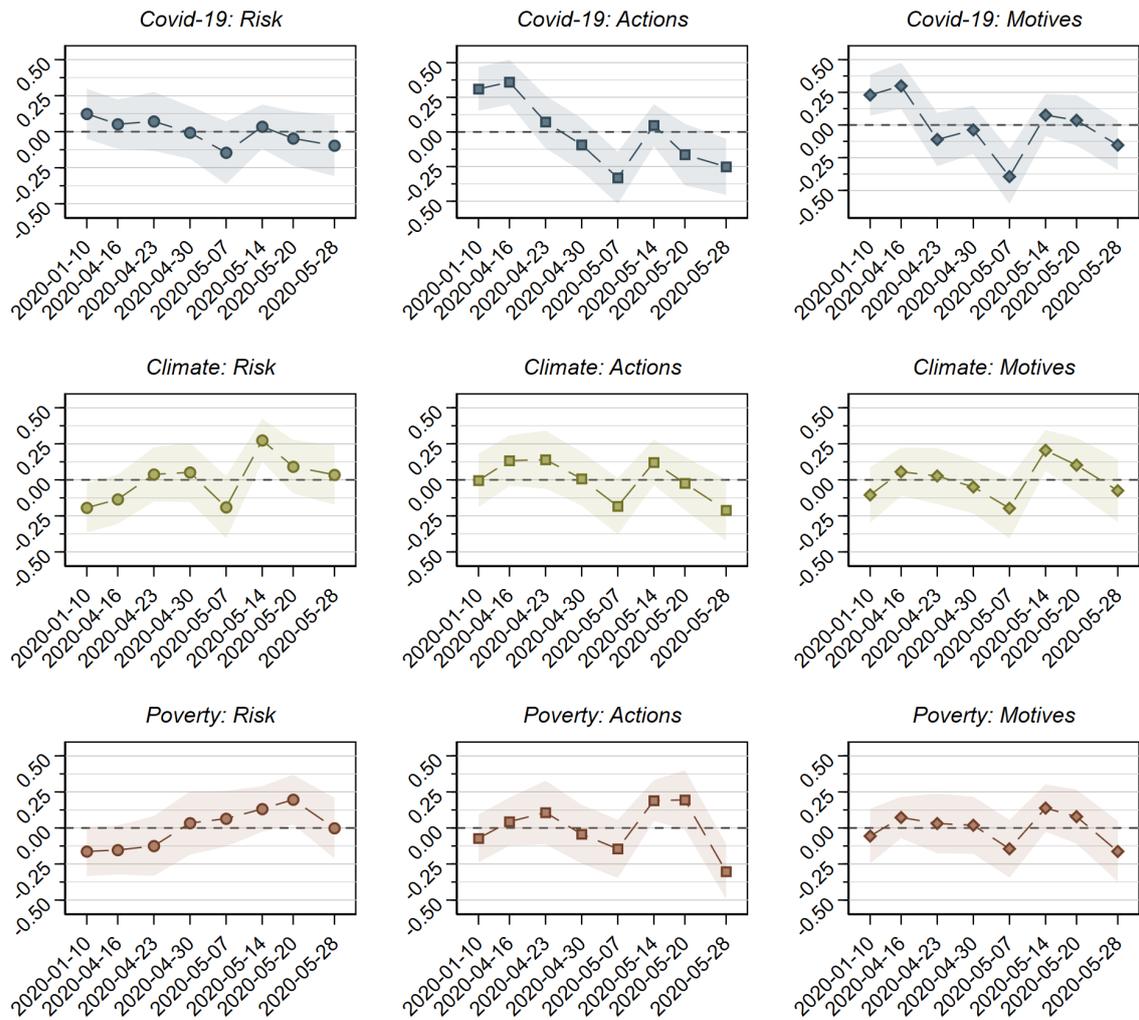


Figure S3: Evolution of average survey responses on risk perceptions, actions, and motives related to the Covid-19 pandemic, the climate crisis, and poverty, respectively for each date at which data has been collected. All survey items are z -standardized. Shaded areas indicate 95% confidence intervals.

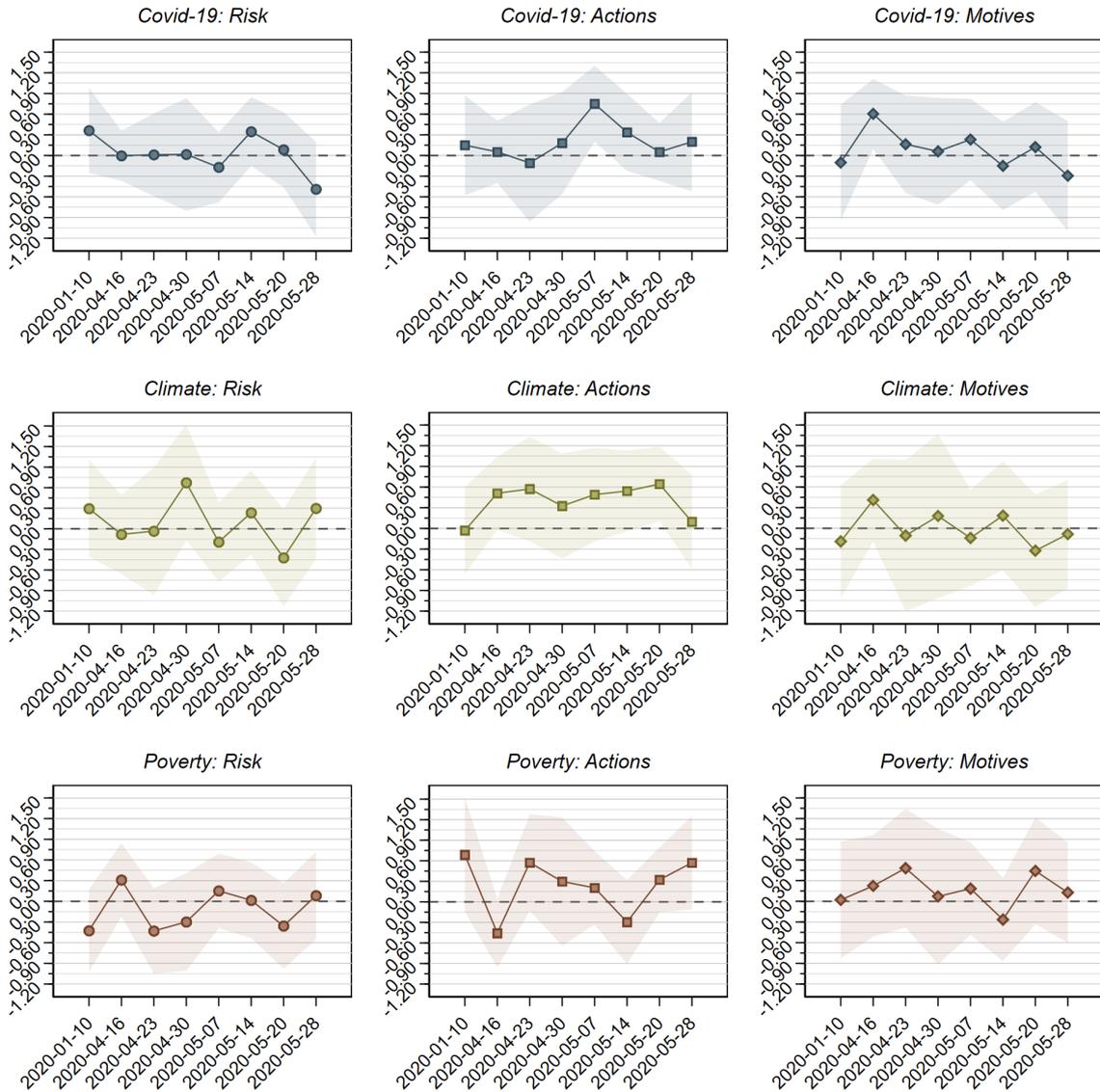


Figure S4: Coefficient plots of donations (pooled across charities) separated for each date at which data has been collected regressed on the survey instruments on risk perceptions, actions, and motivations related to the Covid-19 pandemic, the climate crisis, and poverty, respectively. Shaded areas indicate 95% confidence intervals. Point estimates and confidence intervals are based on Tobit regressions (with €0 and €3 as lower and upper limit, respectively, and robust standard error).

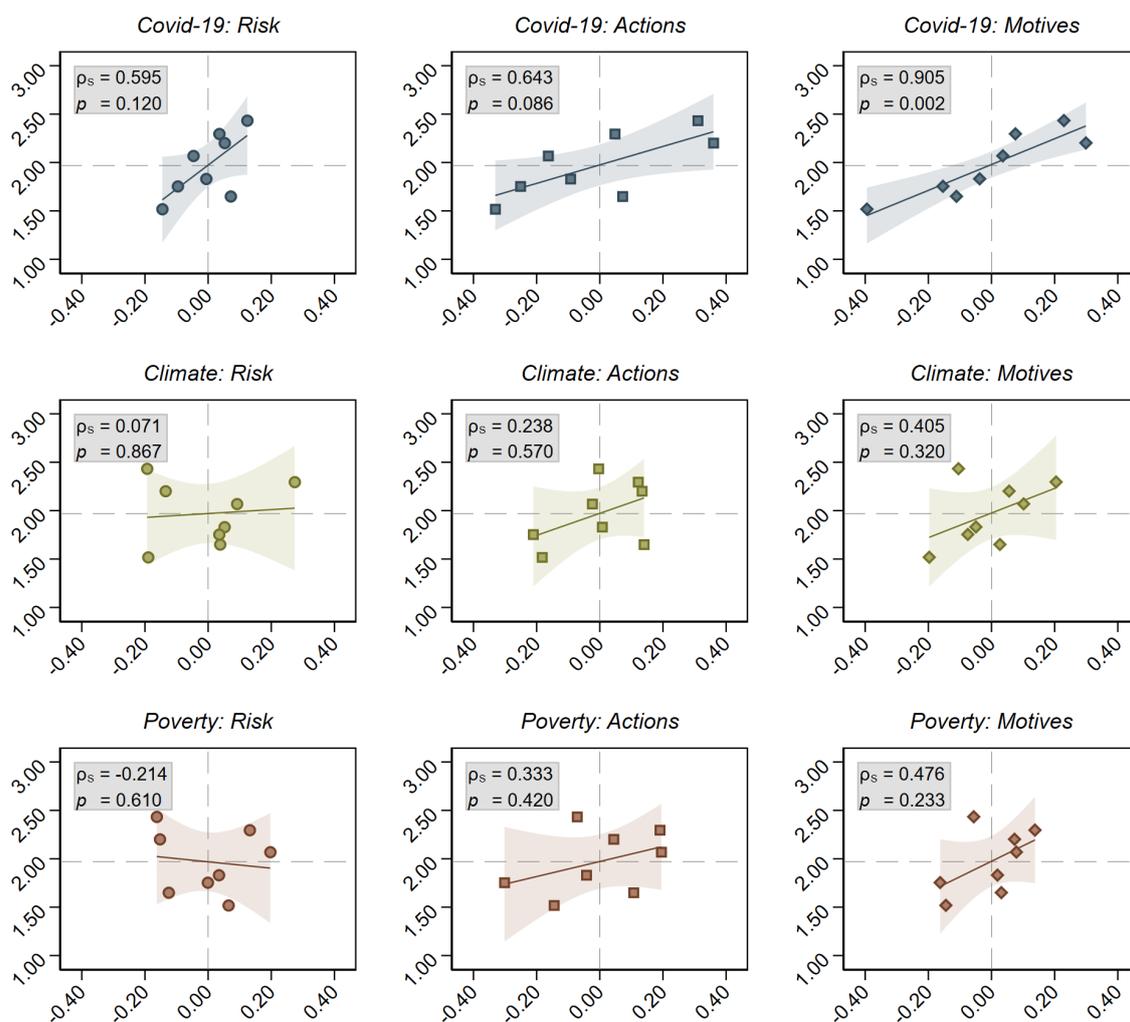


Figure S5: Scatter plot of mean donations (pooled across charities; vertical axis) and average survey responses on risk perceptions, actions, and motives related to the Covid-19 pandemic, the climate crisis, and poverty, respectively, aggregated for each date at which data has been collected. Solid lines indicate linear fitted lines; shaded areas indicate 95% confidence intervals ($n = 8$ in each panel). Spearman correlation coefficients (ρ_s) and the corresponding p -values are reported in the gray boxes.

E. Robustness checks

A first test to the robustness of the results was a 10-fold increase in the initial endowment, giving participants €30 to decide on how much to keep or donate in each of the treatments ($Baseline^{High}$, $Covid^{High}$, and $Covid-Only^{High}$). For sake of comparability, donations in the high-stakes treatments are divided by 10. In short, there is a level effect in donations while treatment effects remain robust to the high stakes environment.

Adjusted donations in the high-stakes treatment (divided by 10, to make it comparable to the endowment of €3 in the main experiment) are somewhat smaller than those in the main treatments: Pooling across treatments, donations in the high-stakes treatments amount to €1.78 ($sd = €1.08$; $n = 110$) as compared to €1.99 ($sd = €1.14$; $n = 879$) in the main experiment. This difference is statistically significant (Tobit regression of the amount donated on an indicator variable for the high-stakes treatment: $t(988) = 2.590$, $p = 0.010$, $n = 989$). While the pattern of lower (adjusted) donations in the high-stakes treatments also holds on a per-treatment perspective, only one of the three comparisons is statistically significant (probably due to inflated standard errors due to the small sample size): $Baseline$ ($m = €2.29$, $sd = €1.08$, $n = 294$) vs. $Baseline^{High}$ ($m = €2.09$, $sd = €0.97$, $n = 34$): $t(327) = 1.797$, $p = 0.073$; $Covid-19$ ($m = €2.11$, $sd = €1.12$, $n = 291$) vs. $Covid^{High}$ ($m = €1.89$, $sd = €1.04$, $n = 40$): $t(330) = 2.228$, $p = 0.027$; and $Covid-19 Only$ ($m = €1.56$, $sd = €1.10$, $n = 294$) vs. $Covid-Only^{High}$ ($m = €1.38$, $sd = €1.12$, $n = 36$): $t(329) = 0.858$, $p = 0.391$. Comparing donations between the main experiment and the high-stakes treatment for each of the charities (see Tab. S1) shows that neither the indicator for the high-stakes treatments nor the interaction term with the $Covid-19$ treatment dummy are significant for any of the charitable organizations. With respect to the differences in donation behavior between the main experiment and the high-stakes treatment in the $Covid-19 Only$ condition, neither the indicator variable for the high-stakes treatment ($b = -0.084$, $p = 0.556$) nor the interaction term with the $Covid-19 Only$ dummy ($b = -0.103$, $p = 0.618$) are statistically different from zero.

Table S1: Tobit regressions of donations on an indicator for the high-stakes treatment, an indicator for the $Covid-19$ treatment, and their interaction, separated for each of the eight charities (with €0 and €3 as lower and upper limit, respectively). All independent variables are z -standardized. Robust standard errors are provided in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>MSF</i>	<i>WWF</i>	<i>AI</i>	<i>RC</i>	<i>SOS</i>	<i>LID</i>	<i>CAR</i>	<i>OXF</i>
High Stakes	-0.043 (0.108)	0.278 (0.148)	0.094 (0.129)	0.270 (0.157)	0.241 (0.134)	0.221 (0.163)	-0.076 (0.155)	0.099 (0.182)
Covid-19	-0.111 (0.074)	-0.189* (0.093)	-0.203* (0.082)	-0.050 (0.093)	-0.172 (0.094)	-0.193 (0.107)	-0.261** (0.092)	-0.464** (0.136)
High×Covid-19	-0.095 (0.154)	-0.096 (0.203)	0.130 (0.174)	0.036 (0.208)	0.101 (0.188)	0.203 (0.218)	0.377 (0.211)	0.561 (0.306)
Constant	0.424*** (0.051)	0.014 (0.067)	0.001 (0.062)	-0.245** (0.075)	-0.335*** (0.077)	-0.540*** (0.097)	-0.523*** (0.098)	-0.752** (0.136)
Observations	659	659	659	659	659	659	659	659
Pseudo R^2	0.003	0.007	0.007	0.005	0.009	0.009	0.012	0.028

More importantly, the differences *between* the three high-stakes treatments are qualitatively similar to the treatment effects in the main experiment. In *Baseline^{High}* ($n = 40$), the average donation was €2.09 ($sd = €0.97$; 69.7% of the endowment; see Fig. S6a). All charities received positive donations on average, with values ranging from €0.07 ($sd = €0.12$) for *Caritas (CAR)* to €0.39 ($sd = €0.39$) for *Doctors Without Borders (MSF)*. Once the *WHO Covid-19 Fund* is present in the menu of possible charitable recipients (*Covid^{High}* treatment; $n = 34$), the aggregate level of donations slightly decreases to €1.89 ($sd = €1.04$; 63.1% of the endowment), with the difference not being statistically significant to that of the *Baseline^{High}* treatment ($t(73) = 1.095, p = 0.277, n = 74$).

When comparing the sum of donations to the eight charities, we observe significantly lower donations in *Covid^{High}* than in *Baseline^{High}*. In the *Covid^{High}* treatment ($n = 34$), the mean donation to the eight charities is €1.69 ($sd = €0.97$; 56.4% of the endowment), while in the *Baseline^{High}* condition ($n = 40$), the mean is €2.09 ($sd = €0.97$; 69.7% of the endowment; $t(73) = 2.009, p < 0.048, n = 74$). In line with the results reported for the main treatments, introducing the *COVID-19 Solidarity Response Fund for WHO* significantly reduces the sum of donations to other social causes, also in a decision setting with high-stakes endowments.

Comparing the donations to each of the eight charities between the treatment in which the *WHO Covid-19 Fund* is present (*Covid^{High}*) to the treatment it is absent (*Baseline^{High}*), we do not observe any systematic effects (see Fig. S6b). As for the main experiment, we observe no significant differences on how donation levels across the different charities are affected by the presence of the *WHO Covid-19 Fund*. In the treatment where participants could only donate to the *WHO Covid-19 Fund* (*Covid-Only^{High}*), we observe an adjusted-average of €1.38 ($sd = €1.12$) donated (45.9% of the endowment; see Fig. S6a). Although the average adjusted-donation in *Covid-Only^{High}* tends to be smaller than the average donation in *Covid^{High}*, the difference between treatments is not statistically significant ($t(75) = 1.742, p = 0.086, n = 76$).

As a second robustness of results, we compare the *Baseline* treatment in the main experiment to data collected in 2013 using the same donation task, published in Blanco *et al.* (36) with the same subject pool in this study (*Baseline* 2013). This allows to explore the longer-term stability of the social preferences in the subject pool. There can be no causal inference attributed to the Covid-19 pandemic from potential differences between the 2013 data and the *Baseline* treatment in the main experiment, as other events have occurred between 2013 and 2020 that could affect participants' decisions.

In addition, since the donation task in the 2013 data was a part D in a 5-part experiment, we collect new data in 2020 replicating the experimental design in Blanco *et al.* (36) in 2020 to assess whether the structure of the experimental design significantly affected behavior in the donation task. In Blanco *et al.* (36) and in the Replication 2020 treatment the experimental design include as part A a risky public good, part B a belief elicitation, part C a risk aversion task, part D the donation task and part E a questionnaire.

We observe that while there are similarities in donations in these tree treatments, there are also some significant differences. First, for the 2020 treatments, there are no significant differences between donations in *Baseline* and in Replication 2020 (varying the experimental design), with the only exception of *Caritas (CAR)*. When comparing donations in *Baseline* 2013 with Replication 2020 (varying the time of data collection while holding the experimental design constant), only *Amnesty International (AI)* and *Red Cross (RC)* are significantly different. When comparing *Baseline* with *Baseline* 2013 (varying the time of data collection and the experimental design), there are significant differences for *World Wide Fund for Nature (WWF)*, *Doctors Without Borders (MSF)*, *Amnesty International (AI)*, and the *Red Cross (RC)*.

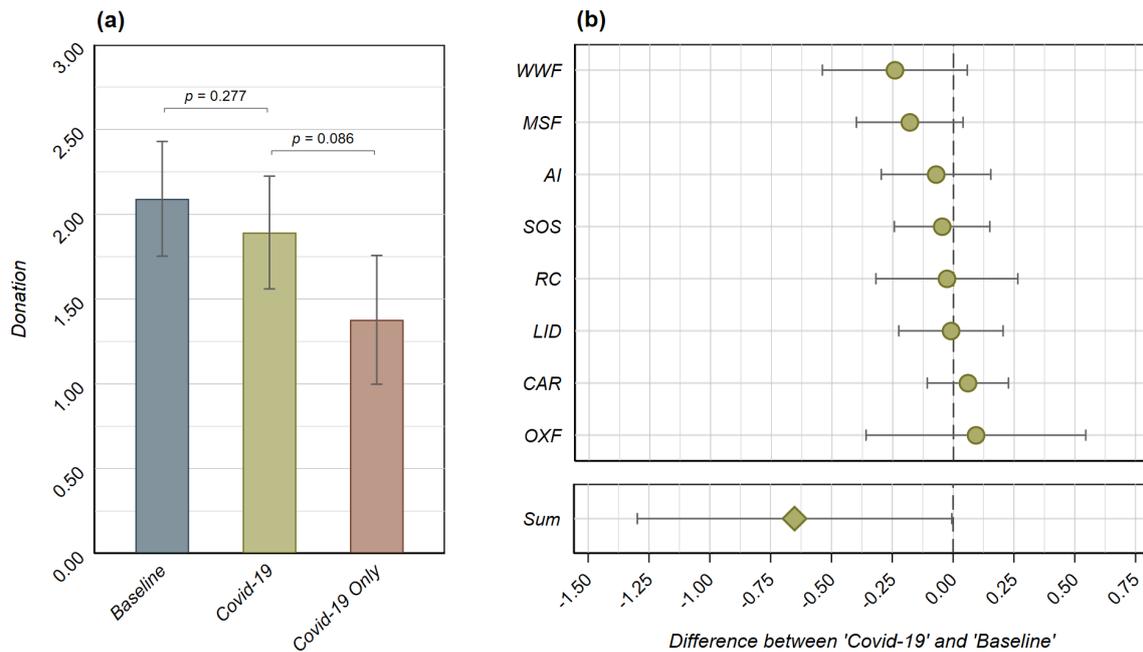


Figure S6: (a) Average donations (pooled across charities) per treatment in € in the high-stakes robustness treatments. p -values are based on Tobit regressions with €0 and €3 as the lower and upper limit, respectively, and robust standard errors. (b) Point estimates and 95% confidence intervals (based on robust standard errors) of the differences in donations to the eight charities between the *Baseline^{High}* and the *Covid^{High}* treatment, based on Tobit regressions of the amount donated to the respective charitable organization on a treatment indicator for the *Covid-19* treatment (with €0 and €3 as the lower and upper limit, respectively, and robust standard errors). Negative values represent lower donations in the *Covid^{High}* treatment than the *Baseline^{High}* treatment. All pairwise comparisons between coefficients based on Wald tests after seemingly unrelated regressions (with robust standard errors) are insignificant.

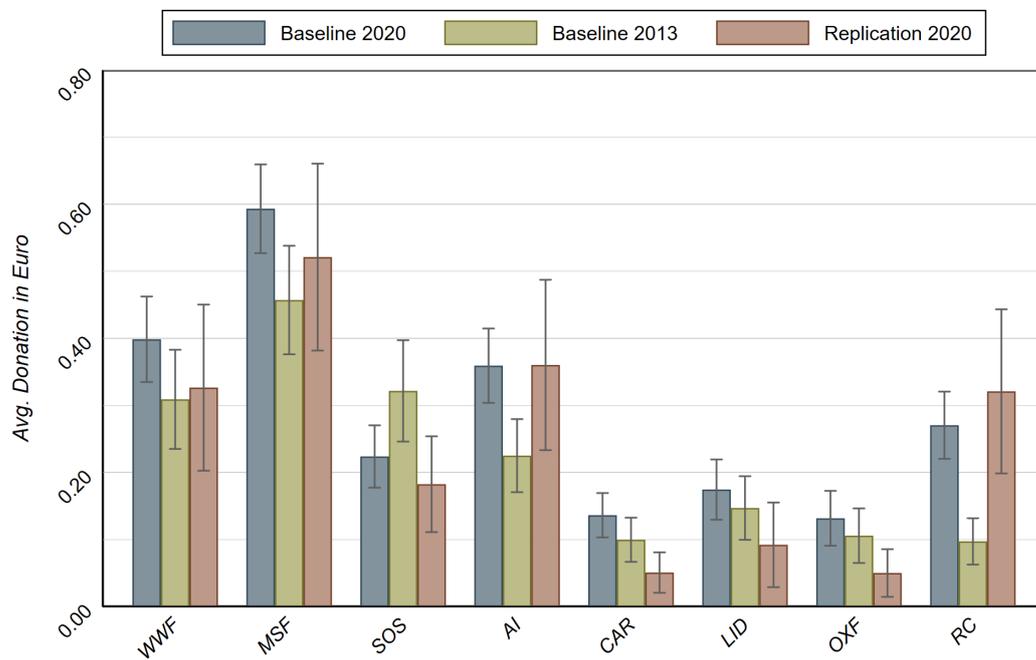


Figure S7: Average donations in € in the *Baseline* treatment of the main experiment, compared to the *Baseline* data collected in 2013 and the replication of Blanco *et al.* (36) as robustness checks, separated for the eight charities. Error bars indicate 95% confidence intervals.

University of Innsbruck - Working Papers in Economics and Statistics
Recent Papers can be accessed on the following webpage:

<https://www.uibk.ac.at/eeecon/wopec/>

- 2020-30 **Esther Blanco, Alexandra Baier, Felix Holzmeister, Tarek Jaber-Lopez, Natalie Struwe:** Substitution of social concerns under the Covid-19 pandemic
- 2020-29 **Andreas Hackethal, Michael Kirchler, Christine Laudénbach, Michael Razen, Annika Weber:** On the (ir)relevance of monetary incentives in risk preference elicitation experiments
- 2020-28 **Andrej Gill, Matthias Heinz, Heiner Schumacher, Matthias Sutter:** Trustworthiness in the Financial Industry
- 2020-27 **Matthias Sutter, Michael Weyland, Anna Untertrifaller, Manuel Froitzheim:** Financial literacy, risk and time preferences - Results from a randomized educational intervention
- 2020-26 **Rene Schwaiger, Jürgen Huber, Michael Kirchler, Daniel Kleinlercher, Utz Weitzel:** Unequal Opportunities, Social Groups, and Redistribution
- 2020-25 **Roman Inderst, Martin Obradovits:** Competitive Strategies when Consumers are Relative Thinkers: Implications for Pricing, Promotions, and Product Choice
- 2020-24 **Martin Obradovits, Philipp Plaickner:** Price-Directed Search and Collusion
- 2020-23 **Helena Fornwagner, Oliver P. Hauser:** Climate action for (my) children
- 2020-22 **Esther Blanco, Natalie Struwe, James M. Walker:** Incentivizing public good provision through outsider transfers: experimental evidence on sharing rules and additionality requirements
- 2020-21 **Loukas Balafoutas, Helena Fornwagner, Rudolf Kerschbamer, Matthias Sutter, Maryna Tverdostup:** Diagnostic Uncertainty and Insurance in Credence Goods Markets
- 2020-20 **Anna Ulrichshofer, Markus Walzl:** Customer Disputes, Misconduct, and Reputation Building in the Market for Financial Advice
- 2020-19 **Anna Ulrichshofer, Markus Walzl:** Social Comparison and Optimal Contracts in the Competition for Managerial Talent
- 2020-18 **Martin Obradovits, Philipp Plaickner:** Searching for Treatment
- 2020-17 **Jun Honda:** The Gender-Punishment Gap revisited

- 2020-16 **Jun Honda:** The Relation between Rankings and Risk-Taking in the Labor Market for Financial Advice
- 2020-15 **Christina Bannier, Eberhard Feess, Natalie Packham, Markus Walzl:** Differentiation and Risk-Aversion in Imperfectly Competitive Labor Markets
- 2020-14 **Felix Holzmeister, Rudolf Kerschbamer:** oTree: The Equality Equivalence Test
- 2020-13 **Parampreet Christopher Bindra, Graeme Pearce:** The effect of priming on fraud: Evidence from a natural field experiment
- 2020-12 **Alessandro De Chiara, Marco A. Schwarz:** A Dynamic Theory of Regulatory Capture
- 2020-11 **Christoph Huber, Jürgen Huber, Michael Kirchler:** Market shocks and professionals' investment behavior - Evidence from the COVID-19 crash
- 2020-10 **Elisabeth Gsottbauer, Daniel Müller, Samuel Müller, Stefan T. Trautmann, Galina Zudenkova:** Social class and (un)ethical behavior: Causal versus correlational evidence
- 2020-09 **Parampreet Christopher Bindra, Rudolf Kerschbamer, Daniel Neururer, Matthias Sutter:** Reveal it or conceal it: On the value of second opinions in a low-entry-barriers credence goods market
- 2020-08 **Robert Steiger, Eva Posch, Gottfried Tappeiner, Janette Walde:** Effects of climate change on tourism demand considering individual seasonal preferences
- 2020-07 **Fang Liu, Alexander Rasch, Marco A. Schwarz, Christian Waibel:** The role of diagnostic ability in markets for expert services
- 2020-06 **Matthias Stefan, Jürgen Huber, Michael Kirchler, Matthias Sutter, Markus Walzl:** Monetary and Social Incentives in Multi-Tasking: The Ranking Substitution Effect
- 2020-05 **Michael Razen, Jürgen Huber, Laura Hueber, Michael Kirchler, Matthias Stefan:** Financial Literacy, Economic Preferences, and Adolescents' Field Behavior
- 2020-04 **Christian König-Kersting, Johannes Lohse, Anna Louisa Merkel:** Active and Passive Risk-Taking
- 2020-03 **Christoph Huber, Jürgen Huber:** Bad bankers no more? Truth-telling and (dis)honesty in the finance industry
- 2020-02 **Dietmar Fehr, Daniel Müller, Marcel Preuss:** Social Mobility Perceptions and Inequality Acceptance
- 2020-01 **Loukas Balafoutas, Rudolf Kerschbamer:** Credence goods in the literature: What the past fifteen years have taught us about fraud, incentives, and the role of institutions

- 2019-21 **Felix Holzmeister, Martin Holmen, Michael Kirchler, Matthias Stefan, Erik Wengström:** Delegated Decision-Making in Finance
- 2019-20 **Julia Rose, Michael Kirchler, Stefan Palan:** Status and Reputation Nudging
- 2019-19 **Felix Holzmeister, Matthias Stefan:** The risk elicitation puzzle revisited: Across-methods (in)consistency?
- 2019-18 **Katharina Momsen, Markus Ohndorf:** Information Avoidance, Selective Exposure, and Fake(?) News-A Green Market Experiment
- 2019-17 **Stjepan Srhoj, Bruno Skrinjaric, Sonja Radas, Janette Walde:** Closing the Finance Gap by Nudging: Impact Assessment of Public Grants for Women Entrepreneurs
- 2019-16 **Adam Farago, Martin Holmen, Felix Holzmeister, Michael Kirchler, Michael Razen:** Cognitive Skills and Economic Preferences in the Fund Industry
- 2019-15 **Christopher Kah, Daniel Neururer:** Generiert der stationäre Buchhandel positive Nachfrageeffekte und verhilft dadurch dem Kulturgut Buch bei seiner Verbreitung? - Ein natürliches Experiment
- 2019-14 **Stjepan Srhoj, Michael Lapinski, Janette Walde:** Size matters? Impact evaluation of business development grants on SME performance
- 2019-13 **Andrea M. Leiter, Engelbert Theurl:** Determinants of prepaid systems of healthcare financing - A worldwide country-level perspective
- 2019-12 **Michael Razen, Michael Kirchler, Utz Weitzel:** Domain-Specific Risk-Taking Among Finance Professionals
- 2019-11 **Jonathan Hall, Rudolf Kerschbamer, Daniel Neururer, Eric Skoog:** Uncovering sophisticated discrimination with the help of credence goods markups - evidence from a natural field experiment
- 2019-10 **Daniela Glätzle-Rützler, Philipp Lergetporer, Matthias Sutter:** Collective intertemporal decisions and heterogeneity in groups
- 2019-09 **Morten Hedegaard, Rudolf Kerschbamer, Daniel Müller, Jean-Robert Tyran:** Distributional Preferences Explain Individual Behavior Across Games and Time
- 2019-08 **Daniel Müller, Sander Renes:** Fairness Views and Political Preferences - Evidence from a representative sample
- 2019-07 **Florian Lindner, Michael Kirchler, Stephanie Rosenkranz, Utze Weitzel:** Social Status and Risk-Taking in Investment Decisions
- 2019-06 **Christoph Huber, Julia Rose:** Individual attitudes and market dynamics towards imprecision

- 2019-05 **Felix Holzmeister, Jürgen Huber, Michael Kirchler, Florian Lindner, Utz Weitzel, Stefan Zeisberger:** What Drives Risk Perception? A Global Survey with Financial Professionals and Lay People
- 2019-04 **David M. McEvoy, Tobias Haller, Esther Blanco:** The Role of Non-Binding Pledges in Social Dilemmas with Mitigation and Adaptation
- 2019-03 **Katharina Momsen, Markus Ohndorf:** When do people exploit moral wiggle room? An experimental analysis in a market setup
- 2019-02 **Rudolf Kerschbamer, Daniel Neururer, Matthias Sutter:** Credence goods markets and the informational value of new media: A natural field experiment
- 2019-01 **Martin Geiger, Eric Mayer, Johann Scharler:** Inequality and the Business Cycle: Evidence from U.S. survey data

University of Innsbruck

Working Papers in Economics and Statistics

2020-30

Esther Blanco, Alexandra Baier, Felix Holzmeister, Tarek Jaber-Lopez, Natalie Struwe

Substitution of social concerns under the Covid-19 pandemic

Abstract

Think tanks and political leaders have raised concerns about the implications that the Covid-19 response and reconstruction might have on other social objectives that were setting the international agenda before the Covid-19 pandemic. We present experimental evidence for eight consecutive weeks during April-May 2020 for Austria, testing the extent to which Covid-19 concerns might substitute other social concerns such as the climate crisis or the protection of vulnerable sectors of the society. We measure behavior in a simple donation task where participants receive €3 that they can distribute between themselves and different charities. While participants in one treatment have the opportunity to donate, if any, to eight different charities including a rich set of social concerns (Baseline), participants in a second treatment can choose to donate, if any, to the same charities and, in addition, to the Covid-19 Solidarity Response Fund for the World Health Organization (Covid-19). In a third treatment, participants can only decide on distributing the €3 between themselves and the Covid-19 Solidarity Response Fund (Covid-19 Only). Our results show that introducing the Covid-19 Solidarity Response Fund does not significantly change aggregate donations (donations represent 76.3 % of endowment in Baseline and 70.2 % in Covid-19, $t(584) = 1.938$, $p = 0.053$, $n = 585$). But, given positive donations to the Covid-19 Solidarity Response Fund, this entails significantly lower donations to the other eight charities (76.3 % in Baseline and 60.8 % in Covid-19, $t(584) = 5.868$, $p < 0.001$, $n = 585$). Moreover, our results point to a high support to the WHO Covid-19 Fund: In the treatment where the WHO Covid-19 Fund is the only available recipient, participants donate about 50 % of their endowment (Covid-19 Only), while in the treatment where it is one out of nine recipients, donations are still 9.5 % of endowment (Covid-19). Overall, our results indicate that donations to diverse social concerns are partially substituted by donations to the Covid-19 fund; yet, this substitution is far from replacing all other social concerns.

ISSN 1993-4378 (Print)

ISSN 1993-6885 (Online)