Munich Personal RePEc Archive

Exposure to economic inequality at the age of 8 enhances prosocial behaviour in adult life

Brañas-Garza, Pablo and Caldentey, Pedro and Espín, Antonio M. and Garcia, Teresa and Hernández, Ana

Department of Economics, Universidad Loyola Andalucia, Spain, Loyola Behavioral Lab, Universidad Loyola Andalucía, Spain, Department of Social Anthropology, Universidad de Granada, Spain

26 May 2020

Online at https://mpra.ub.uni-muenchen.de/101567/
MPRA Paper No. 101567, posted 07 Jul 2020 07:21 UTC

Exposure to economic inequality at the age of 8 enhances prosocial behaviour in adult life

Pablo Brañas-Garza[1,2,3], Pedro Caldentey[2,3], Antonio M. Espín[2,4], Teresa García-Muñoz[2,5], Ana Hernández[2,3]

Abstract

Children as young as 3-4 years are already concerned about inequality and declare that equality is a norm that should be followed[1]. From 3 to 8 years they develop a strong preference for equality, which is typically reflected in both "envy" and "compassion"[2,3], that is, aversion to disadvantageous and advantageous inequality, respectively[4]. Further studies suggest that inequality aversion does not continue increasing after that age, but rather exhibit an inverse-U shape relation with age in childhood and adolescence, with a peak at 8 years old[3,5]. Since children are particularly sensitive to inequality at the age of 8, it is an open question how exposure to real economic inequality at this age modulates prosocial behavior in adult life. Here we link generosity in dictator game experiments conducted among Spanish university students (n>400) with existing macro-level data on income inequality within their region when they were children. The data show that individuals who were exposed to higher levels of inequality at the age of 8 are more generous in adult life. Interestingly, exposure at older ages has no impact on generosity. Our results extend previous findings on the development of egalitarianism by showing long-lasting effects of childhood inequality experience into adult life. If prosocial behaviour is (partly) developed as a reaction to an unequal environment then, in the future, inequality might be counteracted.

JEL codes: D31, D64, I32

Keywords: income inequality, prosocial behavior, dictator game experiments, early exposure.

[1] Corresponding author: Pablo Brañas-Garza, LoyolaBehLAB & Department of Economics, Universidad Loyola Andalucia, Escritor Castilla Aguayo, 4, 14004 Córdoba, Spain, email: pablob@uloyola.es.
[2] Loyola Behavioral Lab, Universidad Loyola Andalucia, Spain.
[3] Economics Department, Universidad Loyola Andalucia, Spain.
[4] Department of Social Anthropology, Universidad de Granada, Spain.
[5] Department of Quantitative Methods, Universidad de Granada, Spain.

MOTIVATION

Children as young as 3-4 years of age are already concerned about inequality. Indeed, at 3 years old they explicitly declare that equality is a norm that should be followed (although they often do not follow it)[1,6]. They, even from 2 years old, are also surprised when witnessing resources distributed unequally[7-9]. However, at these ages, they are happy to receive more than others but upset at receiving less[10] and, in fact, are willing to pay a cost to prevent others from getting more.

Recent studies using economic experiments to measure preferences for equality among children show that inequality aversion reaches a maximum at the age of 8, but also highlight the existence of asymmetric developmental patterns depending on whether inequality is advantageous or disadvantageous[11,12].

In “envy” games, children are asked to choose between an allocation where both the decision maker and the partner get $1 reward and another allocation where the decision maker gets $1 and the partner receives $2: choosing 1/1 (vs. 1/2) reflects envy since it prevents the partner from earning more. About 40% of 3-4 years children select the equal distribution; while at the age of 8, nearly 80% do so. This implies that envy increases with age from 3 to 8 years old. A related study[3] continues the analysis for 8 to 15 years kids. At 8, 80% prefer the equal distribution – they are envious – while this fraction decreases to 40% at the age of 15.

In “sharing” games, designed to measure “compassion” or aversion to advantageous inequality, the choice is between the fair division (1/1) and the unequal division (2/0). At the age of 3 almost no kid selects to share, while at 8 the fraction reaches about 50%. After the age of 8, the second study[3] shows again very low values, below 10%. Hence, compassion also displays an inverted-U shape with age until adolescence. Similar results are shown in another study[5] which shows that the share of egalitarian children decreases from 9 years (63%) to 17 (22%).

All these studies and further advances suggest that preferences for strict equality are particularly relevant at the age of 8, after which children begin to develop more complex patterns such as meritocratic, ingroup-biased and altruistic preferences[3,11], leading to cross-cultural differences[13,14].

It has been demonstrated that the local socioecological (environmental) conditions which people are exposed to during childhood shape adult life in many facets[15-17], including social behaviour[18-22]. Indeed, recent research indicates that by 8 years old, and even earlier, children understand local economic inequality and perceive it as unfair[23,24].

Following the existing evidence we hypothesised that, given that children are particularly concerned about equality at the age of 8, then they must be also sensitive to the surrounding (real) inequality at that age.

Here, therefore, we test whether exposure to economic inequality at young age modulates social behaviour in adult life. In particular, we argue that the level of inequality observed during childhood, and more specifically at age 8, impacts on children's social cognition and perception[25], and this results in shaping their adult social behaviour.

Yet there are reasons to expect either a negative or a positive impact of early inequality exposure on prosocial behaviour. To the extent that local inequality serves as a cue for the harshness and unpredictability of the socioecological environment, a prominent strand of the literature suggests that individuals should adaptatively respond to inequality experience by reducing their cooperativeness and increasing their aggressive behaviour, partly, due to a higher preference for short-term outcomes and risk-taking[20,26,27]. Since one's ability to gather the future gains from prosociality (e.g. from others' reciprocity) is reduced in harsh and unpredictable environments, individuals exposed to inequality should be less willing to cultivate long-term social relationships, thus developing uncooperative and aggressive patterns[29,30]. These arguments suggest a negative effect of childhood inequality experience on adult prosocial behaviour.

A more recent account[21], however, posits that individuals raised in uncertain environments develop/internalise strategies for uncertainty management which, in the arena of social behaviour, translate into risk-pooling through cooperation with other individuals to protect themselves from future shocks[31]. This account is to a large extent related to the classical notion of "choice behind the veil of ignorance" in distributive justice theory[32,33]: if one does not know which position will herself occupy in the social ranking in the future, then she should take actions that reduce the variance in outcomes between low- and high-rank individuals, thus distributing resources as equally as possible. The prediction of this framework is, therefore, that childhood inequality exposure yields a positive effect on adult prosociality.

In sum, our main research question is, do children raised in unequal environments become more or less prosocial adults than those raised in equal environments? And, furthermore, is it at age 8 when childhood inequality exposure displays the strongest effect on adult prosocial behaviour?

To answer these questions, we link behavioural data from economic experiments conducted among Spanish university students (N=448; mean age = 19.01 ± 2.26 (SD), range 18-44; 49.29% females) with existing macro-level data on economic inequality (S80/S20 index) within the participants' geographic region during their childhood.

The Eurostat S80/S20 index reflects the ratio between the average income in the top and bottom quintiles of the income distribution in a particular region for a particular year and is the most robust measure of inequality available for the regions and periods

of interest (see Supplementary Information, SI). The higher the index, thus, the higher the income inequality.

We use the oldest available wave of the S80/S20 index (from 2004 to 2012; see SI). The majority of the participants (65%) of this experiment were 5 years old at the starting year, 2004, and 13 years old at the final year, 2012 (see the age distribution in SI, Table S2). The latter implies that reverse causality is not possible since, while our participants were exposed to different levels of inequality during that period, they could not affect the local income distribution themselves due to their young age. Importantly, even if our participants display a limited range of ages, there is enough variability to disentangle the effect of exposure to inequality at a particular age (our variable of interest) from the effect of the inequality observed in a particular year.

Prosocial behaviour is measured through an economic experiment conducted in December 2017 and January 2018. Participants were 1st year university students from 37 different universities all around Spain, distributed in 17 regions. The entire experimental setup was implemented online using real monetary incentives.

An important feature of our study is that all the participants belong to the same country. This implies that the macro-level data employed are solely reflecting within- and between-region differences in income and income inequality, respectively, but not differences in other variables like access to education, health system, etc. This is hardly achieved in cross-country comparisons. Moreover, our data also allow us to control for the participants' socioeconomic status.

Our key output variable, reflecting the participants' prosocial behaviour, is giving in a dictator game[34]. In the DG, player 1 (the dictator) is endowed with a certain amount of money and asked to split it with a second, passive player (the recipient). Since there are no strategic reasons to share, any positive donation is interpreted as a signal of altruism or generosity[35]. In our experiments, the dictator's endowment was €100. It has been systematically reported[35-37] that only a fraction of dictators keep the entire pie and many of them give half of it to the recipient (i.e. the equal division is a modal response). Our data provide figures comparable to previous experiments: 6.67% share nothing and 50.22% split the pie equally, with an average giving of 40.37±18.59(SD) of the endowment (see SI, Table S1).

RESULTS

Given the period considered due to data availability (2004-2012), the distribution of ages among participants (all were born in 1999 or before), and that our focus is at 8 years old, we restrict our main analyses to inequality exposure at ages 6-10. Figure 1 shows, from left to right, the estimated impact of the inequality observed within the participants' region at the age of 6, 7, 8, 9 and 10 on DG giving. In each case, we set

DG giving as the dependent variable in an Ordinary Least Squares (OLS) regression with the standardised S20/S80 index for that age as the explanatory variable (see SI, Table S3). All regressions control for gender, household income and experimental session. Sampling weights are enabled in all regressions.

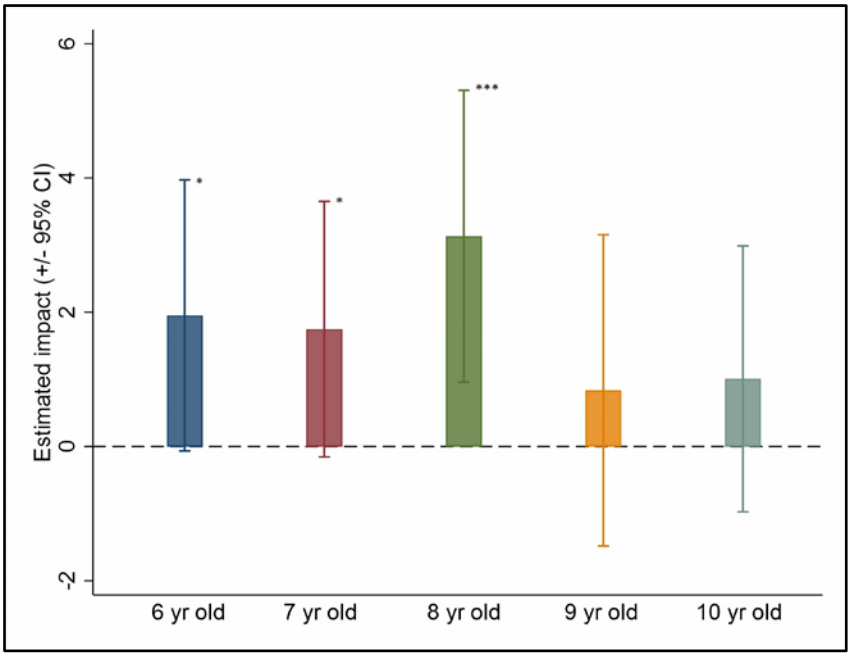

Figure 1| Estimated impact of childhood inequality exposure at different ages on DG giving. The figure depicts the estimated coefficients (and 95% confidence intervals) for the impact of local economic inequality during childhood on prosocial behaviour. From left to right, we show the estimated effect of the standardised regional S80/S20 index at the age of 6 ($\widehat{\beta_6}$=1.95, p=0.06, n=353), 7 ($\widehat{\beta_7}$=1.75, p=0.07, n=391), 8 ($\widehat{\beta_8}$=3.13, p=0.005, n=413), 9 ($\widehat{\beta_9}$=0.84, p=0.48, n=422) and 10 ($\widehat{\beta_{10}}$=1.01, p=0.32, n=430) on DG giving. See SI, Table S3 for full regression results. *, **, *** denote significance at the 10%, 5% and 1% level, respectively.

While the estimated impacts of inequality exposure at 6 and 7 years old on DG giving are positive and marginally significant (p=0.06 and 0.07, respectively), those for 9 and 10 years are smaller and not significant (p>0.31). In sharp contrast, the estimated effect of local inequality at the age of 8 is the largest one and yields significance at standard levels (p=0.005). Therefore, those participants who were exposed to higher inequality at the age of 8 were more generous.

This effect is displayed in Figure 2. Specifically, an increase of 0.51 units in the inequality index (one standard deviation) at the age of 8 translates into an increase of 3.13 euros in DG giving (over €100). This estimated value, 3.13, represents a 16.68%

of the SD at the individual level and 62.47% of the SD at the regional level, that is, when we consider the variance of donations across regions.

Figure 2| Scatterplot (and linear fit) of the mean giving for each value of the inequality index at the age of 8 (given by region + year). The size of the bubbles reflects the number of observations. $\widehat{\beta_8}$=3.13, *p*=0.005, *n*=413. See model 3 in SI, Table S3 for full regression results.

To account for potential problems arising from multiple testing, we corrected our estimations using the Bonferroni and Romano-Wolf[38] procedures. With Bonferroni correction, which is arguably too conservative when the tests are not independent (as it is our case), the estimated effect of local inequality at the age of 8 remains significant (*p*=0.025) while those for inequality exposure at either 6 or 7 years old become not significant (*p*=0.29 and *p*=0.36, respectively). The Romano-Wolf correction yields more power than Bonferroni to detect false null hypotheses since it incorporates the dependence structure of the test statistics. Using the Romano-Wolf correction, the adjusted p-values for the estimated effect of local inequality at the ages of 6, 7 and 8 years old become 0.08, 0.08 and 0.007, respectively. In short, after both corrections, the estimated effect of local inequality at the age of 8 remains largely significant, while the effects at age 6 and 7 are either non-significant or marginally significant, depending on the correction used.

To alleviate concerns about potential confounds, we run several robustness checks. First, we use a different measurement of economic inequality based on an estimation of the Gini index for Spanish regions (see SI). Note that there are no official statistics for regional-level Gini index, so that we need to stick to available calculations by

individual researchers[39]. These data can be used for ages 7 to 10 but not 6, given that the regional Gini index is not available before 2006 (which also implies that the sample is reduced for all ages considered). The effect of the standardized regional Gini index at age 8 on DG giving is positive and marginally significant ($\widehat{\beta_8}$=1.567, p=0.091). Exposure at the ages of 7, 9 and 10 never yield significant estimates (p>0.13; see SI, Table S4).

Second, and in order to disentangle whether the impact of inequality is due to the age of the children or instead to the particular year considered (note that those participants of 18 years at the time of the experiment were 8 in 2007) we run a new analysis (see SI, Table 5). The regressions shown in Figure 1 are repeated, firstly, for students with 18 (65% of the sample) or 19 years old (14%) and, secondly, for students older than 18 (35%). The results are qualitatively similar. Exposure to inequality at the age of 8 has a positive and significant, or marginally significant, effect on giving in both groups ($\widehat{\beta_8^1}$=3.311, p=0.003; $\widehat{\beta_8^2}$=2.995, p=0.089). Inequality at the remaining ages considered does not yield significant estimates in any case (p>0.12), except for a marginally significant positive effect found at age 6 for the 18-19 years old group ($\widehat{\beta_6^1}$=1.953, p=0.058). Therefore, we can conclude that the observed effect is driven by the age of inequality exposure and not by the inequality existing in a particular year.

Third, we performed a "variable selection" method[40] on a regression model with the same specification as above, where the S80/S20 inequality index was included for all ages from 6 to 10. The model reporting the best fit, as reflected by the Bayesian Information Criterion, is that including only the inequality index at age 8.

For the sake of completeness, we also tested the effect of the inequality index for ages 11-15 on giving and find that none of them is significant (p>0.19) when that for 8 years is accounted for (which remains significant in all cases; p-values between 0.004 and 0.041). Finally, we tested the effect of the inequality index for the year of the experiment (i.e., 2017), but it does not yield significance (p>0.64).

DISCUSSION

Our findings support the hypothesis that exposure to economic inequality at the age of 8 has a long-lasting effect on social behaviour in adult life. Those individuals exposed to higher inequality are more generous in adult life. Given that the effect is positive, these results favour the uncertainty management interpretation of the impact of childhood experience on adult social behaviour[21].

This study has two important implications. First, our results extend previous findings on the development of egalitarian behaviour[1-3,5-14]. These papers show that inequality aversion exhibits at inverse-U shape relation with age in childhood and adolescence, with a peak at the age of 8. We find that exposure to inequality at young age, in particular at 8, has an impact on social preferences in adult life.

Second, the observation that inequality exposure at young age promotes prosocial behaviour in adult life is a particularly relevant result in the current world context of increasing within-country inequality[41,42]. If social preferences (partially) emerge as a reaction to the existing unequal environment, as our results suggest, then individuals who are raised in unequal environments will be more prosocial in the future and will therefore promote more equal societies in the future, thus counteracting existing inequality.

Supplementary Information is available at the end of the paper.

Acknowledgements Financial support from MINECO-FEDER (PGC2018-093506-B-I00), Excelencia—Andalucía (PY18-FR-0007, P12-SEJ-1436). Antonio Espín acknowledges funding from the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant agreement No. 754446 and UGR Research and Knowledge Transfer Fund – Athenea3i.

Ethics: This study was approved by the Ethics Committee of Middlesex University Business School. All participants signed an informed consent prior to participate.

REFERENCES

1. McAuliffe, K., Blake, P. R., Steinbeis, N. & Warneken, F. The developmental foundations of human fairness. *Nature Human Behaviour* **1**, 0042 (2017).
2. Fehr, E., Bernhard, H. & Rockenbach, B. Egalitarianism in young children. *Nature* **454**, 1079–1083 (2008).
3. Fehr, E., Glätzle-Rützler, D. & Sutter, M. The development of egalitarianism, altruism, spite and parochialism in childhood and adolescence. *European Economic Review* **64**, 369–383. (2013)
4. Fehr, E., Schmidt, K.M. A Theory of Fairness, Competition, and Cooperation. *The Quarterly Journal of Economics*, Volume **114**(3), 817–868 (1999).
5. Almås, I., Cappelen, A. W., Sørensen, E. Ø. & Tungodden, B. Fairness and the development of inequality acceptance. *Science* **328**, 1176–1178 (2010).
6. Smith, C. E., Blake, P. R. & Harris, P. L. I should but I won't: why young children endorse norms of fair sharing but do not follow them. *PLoS ONE* **8**, e59510 (2013).
7. Geraci, A. & Surian, L. The developmental roots of fairness: infants' reactions to equal and unequal distributions of resources. *Development Science* **14**, 1012–1020 (2011).
8. Schmidt, M. F. H. & Sommerville, J. A. Fairness expectations and altruistic sharing in 15-month-old human infants. *PLoS ONE* **6**, 1–7 (2011).

9. Sloane, S., Baillargeon, R. & Premack, D. Do infants have a sense of fairness? *Psychological Science* **23**, 196–204 (2012).
10. LoBue, V., Nishida, T., Chiong, C., DeLoache, J. S. & Haidt, J. When getting something good is bad: even three-year-olds react to inequality. *Social Development* **20**, 154–170 (2010).
11. Warneken, F. How children solve the two challenges of cooperation. *Annual Review of Psychology* **69**, 205-229. (2018).
12. Blake, P. R. & McAuliffe, K. I had so much it didn't seem fair: Eight-year-olds reject two forms of inequity. *Cognition* **120**(2), 215-224 (2011).
13. House, B. R., Silk, J. B., Henrich, J., Barrett, H. C., Scelza, B. A., Boyette, A. H., Hewlett, B. S., McElreath, R. & Laurence, S. Ontogeny of prosocial behaviour across diverse societies. *Proceedings of the National Academy of Sciences* **110**(36), 14586-14591 (2013).
14. Blake, P. R., McAuliffe, K., Corbit, J., Callaghan, T. C., Barry, O., Bowie, A., ... & Wrangham, R. The ontogeny of fairness in seven societies. *Nature* **528**(7581), 258-261 (2015).
15. Martín, J., Branas-Garza, P., Espín, A. M., Gamella, J. F. & Herrmann, B. The appropriate response of Spanish Gitanos: short-run orientation beyond current socio-economic status. *Evolution and Human Behavior*, **40**(1), 12-22 (2019).
16. Griskevicius, V., Tybur, J. M., Delton, A. W. & Robertson, T. E. The influence of mortality and socioeconomic status on risk and delayed rewards: a life history theory approach. *Journal of Personality and Social Psychology* **100**(6), 1015 (2011).
17. Frankenhuis, W. E., Panchanathan, K. & Nettle, D. Cognition in harsh and unpredictable environments. *Current Opinion in Psychology* **7**, 76-80 (2016).
18. Van Lange, P. A. M., De Bruin, E. M. N., Otten, W. & Joireman, J. A. Development of prosocial, individualistic, and competitive orientations: Theory and preliminary evidence. *Journal of Personality and Social Psychology* **73**(4), 733–746 (1999).
19. Pollak, S. D. Mechanisms linking early experience and the emergence of emotions: Illustrations from the study of maltreated children. *Current Directions in Psychological Science* **17**(6), 370-375 (2008)
20. McCullough, M. E., Pedersen, E. J., Schroder, J. M., Tabak, B. A. & Carver, C. S. Harsh childhood environmental characteristics predict exploitation and retaliation in humans. *Proceedings of the Royal Society B: Biological Sciences* **280**(1750), 20122104 (2013).
21. Amir, D., Jordan, M. R. & Rand, D. G. An uncertainty management perspective on long-run impacts of adversity: The influence of childhood socioeconomic status on risk, time, and social preferences. *Journal of Experimental Social Psychology* **79**, 217-226 (2018).

22. Kajanus, A., McAuliffe, K., Warneken, F. & Blake, P. R. Children's fairness in two Chinese schools: A combined ethnographic and experimental study. *Journal of Experimental Child Psychology* **177**, 282-296 (2019).
23. Hazelbaker, T., Griffin, K. M., Nenadal, L. & Mistry, R. S. Early elementary school children's conceptions of neighborhood social stratification and fairness. *Translational Issues in Psychological Science* **4**(2), 153–164 (2018).
24. Elenbaas, L. Perceptions of economic inequality are related to children's judgments about access to opportunities. *Developmental Psychology* **55**(3), 471–481 (2019).
25. Fiske, S. T. Social cognition and social perception. *Annual Review of Psychology* **44**(1), 155-194 (1993).
26. Glenn, A. L., Kurzban, R. & Raine, A. Evolutionary theory and psychopathy. *Aggression and Violent Behavior* **16**(5): 371-380 (2011).
27. Carver, C. S., Johnson, S. L., McCullough, M. E., Forster, D. E. & Joormann, J. Adulthood personality correlates of childhood adversity. *Frontiers in Psychology* **5**, 1357 (2014).
28. Nettle, D., Colléony, A. & Cockerill, M. Variation in cooperative behaviour within a single city. *PloS ONE* **6** (10), (2011).
29. Belsky, J., Steinberg, L. & Draper, P. Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development* **62**(4), 647-670 (1991).
30. Del Giudice, M., Gangestad, S. W. & Kaplan, H. S. Life history theory and evolutionary psychology. In D.M. Buss (ed.) *The Handbook of Evolutionary Psychology* (2nd edition), 88-114. New York, NY: Wiley. (2015).
31. Winterhalder, B. Diet choice, risk, and food sharing in a stochastic environment. *Journal of Anthropological Archaeology* **5**(4), 369-392 (1986).
32. Harsanyi, J. C. Cardinal utility in welfare economics and in the theory of risk-taking. *Journal of Political Economy* **61**(5), 434-435 (1953).
33. Rawls, J. *A theory of justice*. Cambridge, MA: Harvard University Press (1971).
34. Forsythe, R., Horowitz, J. L., Savin, N. E. & Sefton, M. Fairness in simple bargaining experiments. *Games and Economic Behavior* **6**(3), 347-369 (1994).
35. Camerer, C. F. *Behavioral game theory: Experiments in strategic interaction*. Russell Sage Foundation (2003).
36. Engel, C. Dictator games: A meta study. *Experimental Economics* **14**(4), 583-610 (2011).
37. Brañas-Garza, P., Espín, A. M., Exadaktylos, F. & Herrmann, B. Fair and unfair punishers coexist in the Ultimatum Game. *Scientific Reports* **4**(1), 1-4 (2014).
38. Romano, J. P. & Wolf, M. Stepwise Multiple Testing as Formalized Data Snooping. *Econometrica* **73**(4), 1237–1282 (2005).
39. Herrero Blanco, C., Soler Guillén, Á. & Villar Notario, A. Desarrollo y pobreza en España y sus comunidades autónomas: el impacto de la crisis, *Papeles de Economía Española* **138**: 98-113. (2013).

40. Furnival, G. M. & Wilson, R.W. Regressions by leaps and bounds. *Technometrics* **16**(4), 499-511 (1974).
41. Piketty, T. & Saez, E. Inequality in the long run. *Science* **344**(6186), 838-843 (2014).
42. Milanovic, B. *Global inequality: A new approach for the age of globalization*. Harvard University Press (2016).

SUPPLEMENTARY INFORMATION

S80/S20 index

As a measure of economic inequality within Spanish regions, we use the S80/S20 ratio (or income quintile share ratio). This ratio is a measure of the inequality of income distribution and is calculated as the ratio of total income received by the 20 % of the population with the highest income (the top quintile) to that received by the 20 % of the population with the lowest income (the bottom quintile). All incomes are compiled as equivalised disposable incomes, that is, the total income of a household, after tax and other deductions, that is available for spending or saving, divided by the number of household members converted into equalised adults; household members are equalised or made equivalent by weighting each according to their age, using the so-called modified OECD equivalence scale. The first adult in the household is assigned a weight of 1, the other adults a weight of 0.5 and a weight of 0.3 for children under 14 years of age. Our data comes from the Living Conditions Survey carried out by the Spanish National Statistics Institute.

Gini Index

The Gini index is the most widely used index of income inequality. It is a gauge of economic inequality, measuring income distribution among a population**.** This index comes from the Lorenz curve, which relates the accumulated percentages of population (x-axis) to the accumulated percentages of income (y-axis). The diagonal line represents perfect income equality (10% of the population receives 10% of income, etc.). From a geometric point of view, the value of the Gini Index associated with a given income distribution is equal to twice the area between the Lorenz curve of the distribution and the diagonal. In the situation of maximum equality or distributive equity, the Gini Coefficient is equal to zero and as inequality increases, its value approaches 1. The data on the Gini index have been obtained from Herrero et al. (2013), ref. 39.

Table S1. Distribution of DG giving

DG giving (€)	Frequency	Percent	Percent (weighted)
0	36	8.04	6.67
10	32	7.14	7.62
20	32	7.14	6.39
30	27	6.03	5.62
40	75	16.74	16.86
50	214	47.77	50.22
60	20	4.46	3.95
70	4	0.89	0.50
80	3	0.67	0.51
90	0	0	0
100	5	1.12	1.66
Total	448	100	100

Table S2. Distribution of participants' age in year 2017 (since the experiments were run in the last days of 2017 and first days of 2018, the age reported by the participants is assumed to reflect their age in 2017)

Age in 2017	Frequency	Percent	Percent (weighted)
18	291	64.96	65.30
19	62	13.84	12.22
20	38	8.48	8.82
21	22	4.91	6.77
22	9	2.01	1.72
23	8	1.79	1.19
24	4	0.89	0.88
25	2	0.45	0.28
26	4	0.89	0.99
27	2	0.45	0.39
29	3	0.67	0.85
32	1	0.22	0.10
35	1	0.22	0.39
44	1	0.22	0.10
Total	448	100	100

Table S3. OLS regression models. Impact of childhood inequality exposure on DG giving (S80/S20 index)

Inequality index when:	Model 1	Model 2	Model 3	Model 4	Model 6
6 years-old	1.9531*				
	(1.0266)				
7 years-old		1.7485*			
		(0.9677)			
8 years-old			3.1333***		
			(1.1056)		
9 years-old				0.8374	
				(1.1973)	
10 years-old					1.0098
					(1.0077)
Female	-0.5358	-0.6323	-0.1969	-0.3437	-0.2969
	(1.2555)	(1.1989)	(1.1643)	(1.1538)	(1.1292)
HHS-Income	-1.1809	-0.8326	-0.3977	-0.5682	-0.6613
	(1.1442)	(1.0820)	(0.9951)	(1.1011)	(1.0401)
Sample size	353	391	413	422	430

Notes: Robust standard errors in parentheses. *, **, *** denote significance at the 10%, 5% and 1% level, respectively. All regressions control for experimental session (either 9AM or 8PM session). Sampling weights are enabled in all regressions. HHS-Income refers to household income.

Table S4. OLS regression models. Impact of childhood inequality exposure on DG giving (Gini index)

Inequality index when:	Model 1	Model 2	Model 3	Model 4
7 years-old	1.6967			
	(1.1251)			
8 years-old		1.5672*		
		(0.9254)		
9 years-old			0.2167	
			(1.0009)	
10 years-old				-0.3850
				(1.2660)
Female	-0.8331	-0.4640	-0.6248	-0.5697
	(1.3792)	(1.2667)	(1.2233)	(1.1899)
HHS-Income	-0.9887	-1.0551	-1.1803	-0.7798
	(1.2277)	(1.1819)	(1.1317)	(1.1249)
Sample size	291	353	391	413

Notes: Robust standard errors in parentheses. *, **, *** denote significance at the 10%, 5% and 1% level, respectively. All regressions control for experimental session (either 9AM or 8PM session). Sampling weights are enabled in all regression

Table S5. OLS regression models. S80/S20 index. For participants with 18-19 years old and for participants older than 18

Inequality index when:	Model 1a (18-19)	Model 1b (>18)	Model 2a (18-19)	Model 2b (>18)	Model 3a (18-19)	Model 3b (>18)	Model 4a (18-19)	Model 4b (>18)	Model 5a (18-19)	Model 5b (>18)
6 years-old	1.9531*	-0.0487								
	(1.0266)	(2.0533)								
7 years-old			1.5862	-0.0894						
			(1.0341)	(2.1472)						
8 years-old					3.3107***	2.9952*				
					(1.1439)	(1.7490)				
9 years-old							0.4588	3.8087		
							(1.2554)	(2.4996)		
10 years-old									0.8233	2.9256
									(1.1041)	(2.1695)
Female	-0.5358	1.8534	-0.4756	0.0163	-0.3248	1.4716	-0.5019	1.2829	-0.5224	1.4157
	(1.2544)	(2.8466)	(1.2591)	(2.1119)	(1.2598)	(1.9856)	(1.2795)	(1.8463)	(1.2704)	(1.8051)
HHS-Income	-1.1809	-1.0212	-0.8883	-1.2018	-0.8359	0.9988	-1.1181	1.0135	-1.0800	0.3478
	(1.1442)	(3.3672)	(1.1584)	(2.4038)	(1.1063)	(1.9169)	(1.2340)	(1.8824)	(1.1041)	(1.8567)
Sample size	353	62	353	100	353	122	353	131	353	139

Notes: Robust standard errors in parentheses. *, **, *** denote significance at the 10%, 5% and 1% level, respectively. Sampling weights are enabled in all regressions. All regressions control for experimental session (either 9AM or 8PM session).