COVID-19 within families amplifies the prosociality gap between adolescents of high and low socioeconomic status

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Abstract

COVID-19 has had worse health, education or labor market effects on groups with low socio-economic status (SES) than on those with high SES. Little is known, however, about whether COVID-19 has also had differential effects on non-cognitive skills that are important for life outcomes. Using panel data from before and during the pandemic, we show that COVID-19 affects one key non-cognitive skill, i.e., prosociality. While prosociality is already lower for low-SES students prior to the pandemic, we show that COVID-19 within families amplifies the prosociality gap between French high-school students of high- and low-SES by almost tripling its size in comparison to pre-COVID-19 levels. This shock on low-SES students' prosociality is likely to have long-term negative consequences on future life-outcomes, in particular on labor markets.

Significance statement

Non-cognitive skills are important for lifetime-outcomes. Here we study how COVID-19 infections affect the prosociality – one key non-cognitive skills with important relations to labor market outcomes – of French high school students. We put a major focus on the question whether COVID-19 has a differential effect on students from low or high socio-economic status (SES). While it is known by now that COVID-19 has had more negative health and economic effects on people with low SES, the effects on non-cognitive skills have not been studied so far. We find that COVID-19 within families amplifies the gap in prosociality between adolescents of high and low socioeconomic status tremendously, which may yield long-term negative effects on low-SES students.

Introduction

The COVID-19 pandemic has been hitting poorer and less educated adults much more than their richer and better educated counterparts, both with respect to health conditions and economic outcomes[1-6]. While the evidence for adults of different socio-economic status (SES) yields a consistent pattern, there is less evidence on the effects on children and adolescents. It seems that the pandemic has induced worse mental health[7], lower educational attainment, academic aspirations, and larger dropout rates from school for children and adolescents from low-SES families[8-9]. However, evidence of how the pandemic affects non-cognitive skills is almost nonexistent. Yet, such non-cognitive skills and their formation in childhood and adolescence have been shown to have long-term effects on life outcomes, including education, labor-market outcomes and health[10-15]. Studying the effects of the pandemic in general on non-cognitive skills of children and adolescents is challenging, not least because the pandemic, with its plethora of health, social, and economic consequences, is so multifaceted that it is difficult to identify the specific aspects of it that affect these skills. For this reason, we take a straightforward approach and study with a panel how COVID-19 infections within a family affect non-cognitive skills of adolescents.

We focus on prosociality as one important non-cognitive skill that has large predictive power for labor market outcomes as adults[16]. Independent of and prior to the pandemic, prosociality (typically covering cooperation, altruistic behavior, and trust) has been shown to be related to socio-economic status. Children from poorer and less educated families have been found to be significantly less altruistic, more selfish, and less cooperative and trusting[17-19]. Given this relationship between prosociality and SES, recent research has investigated ways of reducing the social gap in children's prosociality, finding that interventions in families and schools, including mentoring programs and parent academies, can substantially narrow the prosociality gap by increasing low-SES students' prosociality by as much as 0.4-0.6 standard deviations[20-21]. While such research confirms that well-designed interventions can level the playing field between low- and high-SES students, malleability of preferences also implies that disrupting life events[22] could play out in the other direction and thus reinforce social inequalities.

We are the first to provide evidence on how a COVID-19 infection within families affects the prosociality of high- and low-SES students. More specifically, we ask whether COVID-19 exposure, measured by an adolescent or a family member having COVID-19, reinforces inequalities in prosociality between high- and low-SES adolescents. There are several reasons as to why COVID-19 could affect the prosociality of low- and high-SES adolescents in different ways. One reason is medical: conditional on having COVID-19, chances of being hospitalized might differ for low-SES and high-SES students' families (due to differences in comorbidities or distance to hospitals, for instance). Hospitalization may affect prosociality through fear, which can affect ethical decision-making[23]. Other reasons relate to concomitant effects of an infection, since it might be related to unemployment, which can affect preferences[24-25] and by which low-SES families have been struck more heavily. Finally, another channel may be the presence of a comforting parent at home during lockdown, which can contain mental health issues associated with COVID-19 [26], such as stress, depression, or anxiety, which may affect one's preferences[27]. Considering that parents from a high-SES background might have more opportunities to work from home during the pandemic, this channel might also induce differences in adolescents' prosociality. We investigate the role played by each channel.

Data

In October and November 2019, we set up a panel to measure high school students' prosociality in three regions of France (Nantes, Montpellier, and Créteil). Initially, 67 schools agreed to participate, which meant that over 5,000 students, aged 15 to 17 years (grades 10 to 12), participated in the first wave of data collection in fall 2019. With the advent of COVID-19 in France in March 2020, all schools were closed from March 16, 2020 to June 22. 2020. Most schools from our first wave preferred to delay a second wave of data collection until after the pandemic. Yet, some schools suggested to contact students electronically and let them participate remotely from home during lockdown. Thus, 363 students from the first wave participated also in May and June 2020, meaning that we have data for them for two waves, allowing us to identify the effects of COVID-19 on prosociality. Our study of these students relies on merging three data sources: (i) data on prosociality comes from incentivized experiments that adolescents played both in fall 2019 and spring 2020 on a novel online platform that we created, (ii) data on the effects of COVID-19 on students and their families comes from a survey we designed and administered online in May and June 2020 (at the end of the incentivized games); and (iii) the French Ministry of Education provided administrative data on parents' socio-economic status.

In order to reduce measurement error[28], we used multiple components to construct a measure for a subject's prosociality. We considered an adolescent's behavior in four different games or tasks (see the Supplementary Information, SI, for details): (i) the relative frequency of cooperation in a repeated prisoner's dilemma game; (ii) trust as the amount a first mover transfers to a second mover in a standard trust game[29]; (iii) altruism as the frequency with which subjects donate a fixed amount of money to a vaccination campaign (against measles), run by UNICEF[30], rather than taking a (successively) increasing amount of money for themselves; and (iv) generosity as the share of each student's total payoff from all tasks that he or she decides to donate to an NGO. All tasks were incentivized by converting the students' credits into gift vouchers. In both waves, students were given the same instructions that we would randomly draw 300 students to receive the vouchers. In order to construct the dependent variable of prosociality, we transform our four different measures (cooperation, trust, altruism, and generosity) into a single principal component index of prosociality so as to get an encompassing measure of prosociality that does not rely only on a single game.

In May and June 2020, the majority of students filled in an extensive survey on COVID-19 (however, since this was at the end of the incentivized games, some students skipped that part). The survey included questions on whether parents had a job that exposed them to COVID-19 (e.g., working in the health sector or in a supermarket), whether anyone in the family (including the student, parents, siblings, grandparents, or other family members) had COVID-19 and, if so, whether the family member was hospitalized. We also asked whether parents (and siblings) stayed at home during the French lockdown, whether any parent lost their job (at least temporarily), how much time students spent reading COVID-19-related news (which we use as a proxy for knowledge about the disease and measures to protect against it), and to which extent they complied with safety rules to avoid an infection.

Finally, we matched our experimental and survey data with administrative data on students which was provided by the French Ministry of Education. This dataset contains extensive information on students' demographic characteristics (including gender and parents' profession). Following the guidelines from the French Statistical Office, we define a student as having low-SES if the occupation of the parent who is the head of household is either a manual worker

("ouvrier" in French) or non-manual worker ("employé").† 12.4% of the students in our sample have a household head who is a non-manual worker and 17.9% a household head who is a manual worker.

Methods

Establishing whether having COVID-19 in one's family has any effect on adolescents' prosociality is difficult because of potential reverse causality, as prosociality might determine COVID-19 exposure levels[31]. We assuage this potential selection problem by employing panel regression models to construct estimates of the effect of COVID-19 exposure in the family. Our prosociality measures, available *before* the onset of COVID-19 and *during* the first lockdown, allows us to examine changes in prosociality *within* adolescents over time (instead of using cross-sectional comparisons *between* adolescents). Our econometric approach therefore controls for differences in students' characteristics that are fixed over time and might have endogenously determined COVID-19 exposure.‡ Our estimating equation is:

$$Y_{it} = \alpha_i + \gamma_t + \beta \cdot COVID19_{it} + \gamma \cdot COVID19_{it} \cdot LowSES_{it} + \delta X_{it} + \varepsilon_{it},$$

where Y_{it} is the outcome of student i at time t (and t = 1 for Pre-COVID-19 in October and November 2019 and t = 2 in May and June 2020), α_i is a student fixed effect, γ_t is a time fixed effect (taking the value 1 for the second wave and 0 for the first wave), $COVID19_{it}$ is whether the student or a family member had COVID-19. X_{it} is a vector of control variables that includes gender, region, and grade (which is included as a linear variable, ranging from 10th grade—when students are 15 years old—to 12th grade—when students are 17 years old), all separately interacted with COVID-19 exposure. We cluster standard errors at the class level.

Results

Pre-COVID-19 differences in prosociality between high- and low-SES adolescents and development during the pandemic (Panels A and B of Table 1). In fall 2019, students of different SES already differed significantly in their prosociality, which confirms previous findings[17]. The principal component index for prosociality is significantly lower (-0.33 points) for low-SES students than for high-SES students, a difference that represents 0.27 standard deviations. In the four different games, low-SES students were, on average, less cooperative, less trusting, less altruistic, and less generous than high-SES students. Panel B of Table 1 shows that these differences in prosociality get even larger (with the exception of altruism) during the COVID-19 pandemic. The principal component index of low-SES students is 0.39 points lower in May/June 2020 than the index of high-SES students (representing about 0.32 standard deviations), and except for altruism the differences between low- and high-SES students are significant for cooperation, trust, and generosity.

Survey evidence on differential effects of COVID-19 on high- and low-SES families (Panel C of Table 1). Families of high-SES students were more likely to experience a COVID-19 infection

† The French statistical agency (INSEE) classifies professions in six categories: (1) farmers: 1.4% of the employed population in 2020; (2) craftsmen, small business owners, and CEOs: 6.8%; (3) managers and intellectual professions: 20.4%; (4) intermediate professions: 26.0%; (5) employees: 25.8%; (6) manual workers: 19.2%; and (7) undefined: 0.4%. The two categories "employees" and "manual workers" are commonly used by INSEE as a proxy for social background of the worker. See https://www.insee.fr/fr/statistiques/2489546#tableau-figure1_radio1 for further statistics, notably by gender.

‡ Our identification relies on the assumption that time-varying student characteristics are independent from COVID-19 exposure.

(27.4% vs. 15.6%; p=0.042)[§], and they were also more often treated in hospital (8.9% vs. 1/6%). One explanation for these differences could be that high-SES families may have better access to both testing and health care in case of an infection[33].

Parents of low-SES students had a considerably higher likelihood of having a job where they are regularly in contact with others and thus potentially with COVID-19 (0.766 vs. 0.49 parents per family on average; p<0.05). This might explain why students of low-SES reported significantly higher compliance with safety rules than high-SES students (p=0.01), since their parents are more exposed and hence may emphasize the importance of compliance more. The fact that low-SES students spent more time reading COVID-19 related news fits into this picture as well.

Concerning the economic effects of COVID-19 on students' families, parents of low-SES students were significantly more likely to have lost their job or be on a partial unemployment scheme than parents of high-SES students (0.475 vs. 0.307 parents per family on average; p=0.077).[#] Despite more frequent job losses in families of low-SES students, their parents stayed less frequently at home during the lockdown than parents of high-SES students (1.00 parents vs. 1.31 parents; p=0.005). This can be explained by more ample opportunities for high-SES families to work from home. The difference in the number of parents staying at home is caused by differences for fathers (0.37 vs. 0.60 fathers at home during lockdown; p=0.002), while for mothers there is no significant difference between students of high- or low-SES. Families of different SES also do not differ with respect to the number of siblings at home during the lockdown or the average family size.

Association between COVID-19 infections in families and adolescents' prosociality. While panel B of Table 1 has already shown that the gap in prosociality has widened, in general, between low- and high-SES students during the pandemic, we now zero in on how COVID-19 infections within families affect the prosociality of students of different SES. Figure 1 presents our main result. We show, for different model specifications, the coefficient of an interaction term between a COVID-19 infection within an adolescent's family and having low SES. In all models, the interaction term is significantly negative, ranging from 0.81 to about 1.22 points of the principal component index. This is equivalent to 0.61 to 0.94 of a standard deviation of the prosociality index. These are very strong effects, considering the *pre*-COVID-19 difference of 0.27 standard deviations between high- and low-SES adolescents. This means that COVID-19 infections within families dramatically amplify the difference in prosociality between high- and low-SES students, by increasing the gap by a factor of two to three. Putting this result in perspective, having a COVID-19 in a low-SES family has approximately two times the effect – in absolute terms, but in *reverse* direction – of a mentoring program studied previously[21].

Taking into account the potential effects of parental job loss, contact job, home office, and hospitalizations. In Figure 1, we show as the baseline model a specification where we control for gender, age, and region of students (i.e., their interaction with COVID-19 infection). In the following models (from top to bottom), we add single control variables to the baseline model,

[§] Overall, we have 24% of adolescents with a COVID-19 infection in their families. Estimations for France projected 4.4% of the population having been infected with COVID-19 by May 2020 [32]. This implies that the likelihood of having an infection within a household of 4 to 5 people (which reflects our sample) was about 20%. Since we were asking also about grandparents and other family members, our slightly higher fraction of families with a COVID-19 case seems a good representation of the French situation in spring 2020.

[#] In May 2020, 45.1% of the low-SES workers reported being unemployed in France, according to the French statistical agency (36.3% for non-manual workers and 53.9% for manual workers). Source: https://www.insee.fr/fr/statistiques/4801313#titre-bloc-8

considering hospitalizations (model 2), whether parents have a job with lots of potential contact during the pandemic (model 3), whether any parent lost (at least temporarily) their job in the pandemic (model 4), and how many parents stayed at home during the lockdown (model 5). In model 6 (at the bottom), we add all of those controls to the baseline model. In all models, the negative effect of a COVID-19 infection on the prosociality of adolescents with low-SES remains significant and sizable, thus confirming the baseline model's result.

Interestingly, none of the control variables included in the models (job loss, contact job, home office, hospitalization) themselves have a main effect on adolescents' prosociality (see Table S1 in SI). Taken together, the evidence in Figure 1 and Table S1 suggests, first, that a COVID-19 infection in a family is the main driver of the increasing social gap in prosociality and, second, that, in contrast, the large differences we observe between high- and low-SES adolescents in terms of job loss, contact job, or ability to work from home do not reinforce inequalities in prosociality.

Conclusion

Our paper is the first to measure the effects of COVID-19 infections within families on adolescents' prosociality in a longitudinal panel, by matching experimental choices with survey data and administrative records on adolescents' socio-economic background. Accounting for likely channels through which the COVID-19 pandemic might have affected high- and low-SES adolescents' prosociality (e.g., parents' having high-contact job or losing their job), our study is better positioned to examine questions of inequality in terms of socio-economic status and the likely causal pathways than earlier analyses of COVID-19 and prosociality, which relied on cross-sectional analyses or priming the salience of COVID-19 [27,34-36].

Overall, our study suggests that the current pandemic widens the prosociality gap between low- and high-SES students, therefore amplifying an already pre-existing gap before the onset of the pandemic[17]. Considering the importance of non-cognitive skills in general and of prosociality in particular[10-16], the negative effects of COVID-19 infections on adolescents from low-SES families are likely to have severe negative long-term consequences for these adolescents, in particular since the pandemic appears to revert any attempts at closing the gap in non-cognitive skills between high- and low-SES adolescents[20-21]. Future research should be directed at ascertaining whether the effects that we report here persist over the longer run and whether and how potential interventions may undo the increased gap in prosociality of low-SES and high-SES adolescents through COVID-19.

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Table 1: Prosociality before and during the pandemic and survey on COVID-19

	All (1)	Low SES (2)	High SES (3)	Difference (4)=(2)–(3)	p-value
Panel A: Pre-COVID-19 prosociality (October/November 2019)[a]					
Prosociality index (principal components analysis)	0.046	-0.183	0.145	-0.328***	0.001
Cooperation	0.474	0.465	0.478	-0.014	0.565
Trust	2.489	2.335	2.556	-0.221	0.117
Altruism	3.261	3.078	3.342	-0.264**	0.024
Generosity	0.467	0.365	0.509	-0.144***	0.000
Panel B: Prosociality during COVID-19 pandemic (May/June 2020)					
Prosociality index (principal components analysis)	-0.043	-0.316	0.070	-0.386**	0.002
Cooperation	0.485	0.446	0.502	-0.056**	0.013
Trust	2.650	2.428	2.738	-0.311**	0.023
Altruism	3.167	3.115	3.189	-0.075	0.556
Generosity	0.407	0.301	0.448	-0.147***	0.000
Number of observations in each wave	363	110	253		
Panel C: Survey on COVID-19 (May/June 2020)[b]					
COVID-19 infection in family	0.240	0.156	0.274	-0.118**	0.042
Hospitalization	0.068	0.016	0.089	-0.074***	0.008
Compliance with safety rules[c]	0.853	0.934	0.821	0.114**	0.010
Time reading COVID-19 related news[d]	1.833	1.968	1.778	0.190	0.235
Number (#) of parents with contact job	0.571	0.766	0.490	0.275**	0.012
At least one parent with contact job	0.457	0.562	0.413	0.150**	0.043
# of parents losing job in pandemic	0.355	0.475	0.307	0.169*	0.077
At least one parent losing job	0.313	0.377	0.287	0.090	0.213
# of parents at home during lockdown	1.223	1.000	1.314	-0.314***	0.005
At least one parent home in lockdown	0.791	0.726	0.817	-0.091	0.161
Father at home during lockdown	0.535	0.371	0.601	-0.230***	0.002
Mother at home during lockdown	0.688	0.629	0.712	-0.083	0.245
Number of siblings at home	1.075	0.970	1.122	-0.152	0.308
Family size (members)	4.258	4.177	4.291	-0.114	0.511

[a] The four different tasks/games are described in detail in the supplementary information (SI) that also includes the experimental instructions.

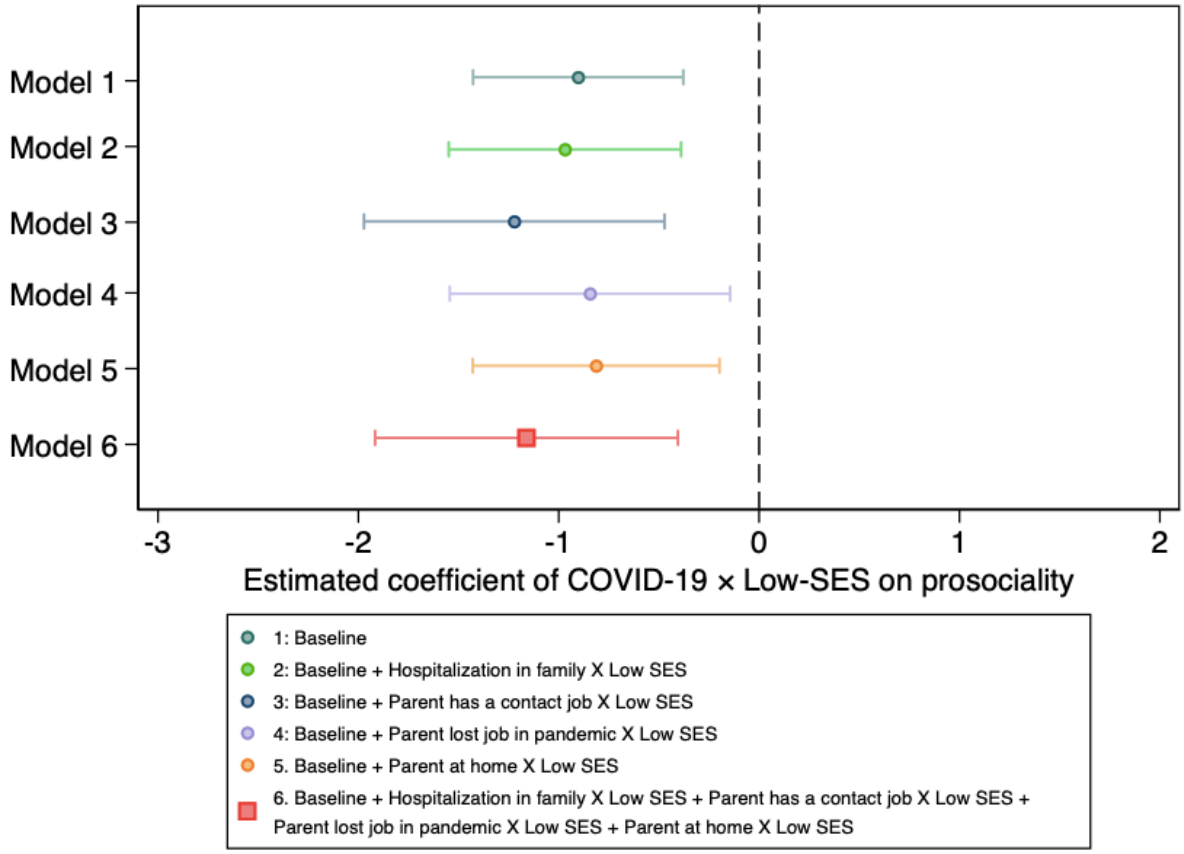
[b] The survey can be found in the supplementary information (SI).

[c] This is a dummy variable coded as 1 if a student answered "all the time" to any of the questions about the frequency of complying with safety conditions (for washing hands/social distancing/distance greetings/wearing a mask); the variable is 0 otherwise.

[d] This scale was coded as follows: 1 = less than 15 min; 2 = btw 15 to 30 min; 3 = btw 30 min and 1h; 4 = btw 1h and 2h; 5 = more than 5h per day

***/**/*: significant at p-level of 0.01/0.05/0.1.

Figure 1: Effect of COVID-19 infections on prosociality of adolescents from low-SES families (relative to high-SES adolescents)



Notes: The figure shows the estimated coefficient of the interaction term COVID-19 × Low-SES background on adolescents' prosociality index. The whiskers denote the 95%-confidence interval. Standard errors are clustered at the class levels. From top to bottom we present the estimated coefficient for six different models. The dependent variable is always an adolescent's prosociality index. Model 1 corresponds to the baseline model whose results are discussed in the paper. The independent variables include a student fixed effect, a time fixed effect, a binary variable for COVID infection in the family (COVID), the interaction term COVID × Low-SES background (whose coefficient is reported in this figure), as well as the following control variables: COVID × Gender, COVID × Grade, COVID × region, whether the student participated from a mobile phone, whether the partner for cooperation and trust games was from the same class (versus from another school or region), and the number of games/tasks included in the composite index. Model 2 adds the following control variables to model 1: "at least one family member hospitalized" and the interaction term "hospitalization" × Low-SES. Model 3 adds the following control variables to model 1: "at least one parent has a contact job" and the interaction term "parent has a contact job" × Low-SES. Model 4 adds the following control variables to model 1: "at least one parent has lost job in the pandemic" and the interaction term "parent has lost job in the pandemic" × Low-SES. Model 5 adds the following control variables to model 1: "at least one parent at home during lockdown" and the interaction term "parent at home during lockdown" × Low-SES. Model 6 includes all variables considered in models 1 to 5. Tables S.1 in the supplementary information shows the regression results for all six models in detail.

SUPPLEMENTARY INFORMATION

Regression tables

Table S.1. Regressions supporting Figure 1 in the main text

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Relatives with covid	-0.732	-0.885	-0.637	-0.893	-0.981	-1.115
	(0.826)	(0.846)	(0.831)	(0.843)	(0.888)	(0.929)
Relatives with covid x Low SES	**-0.903*** **	**-0.969*** **	**-1.222*** **	**-0.844** **	**-0.813** **	**-1.161*** **
	(0.263)	**(0.291)**	**(0.377)**	**(0.351)**	**(0.309)**	**(0.379)**
Hospitalization in family		0.256				0.419
		(0.464)				(0.460)
Hospitalization in family x Low SES		1.026*				1.475**
		(0.586)				(0.641)
Parent has a contact job			0.241			0.264
			(0.192)			(0.224)
Parent has a contact job x Low SES			0.434			0.675
			(0.395)			(0.437)
Parent at home				0.027		0.345
				(0.302)		(0.291)
Parent at home x Low SES				-0.126		-0.446
				(0.238)		(0.341)
Parent lost job					-0.076	-0.045
					(0.243)	(0.242)
Parent lost job x Low SES					-0.180	0.077
					(0.346)	(0.372)
R2	0.767	0.768	0.772	0.771	0.770	0.780
Number of observations	414	414	410	402	396	390

Notes: The Table shows the estimated coefficient for six different models. The dependent variable is always an adolescent's prosociality index. Model 1 corresponds to the baseline model whose results are discussed in the paper. The independent variables include a student fixed effect, a time fixed effect, a binary variable for COVID infection in the family (COVID), the interaction term COVID × Low-SES background, as well as the following control variables: COVID × Gender, COVID × Grade, COVID × Region, whether the student participated from a mobile phone, whether the partner for cooperation and trust games was from the same class (versus from another school or region), and the number of games/tasks included in the composite index. Model 2 adds the following control variables to model 1: "at least one family member hospitalized" and the interaction term "hospitalization" × Low-SES. Model 3 adds the following control variables to model 1: "at least one parent has a contact job" and the interaction term "parent has a contact job" × Low-SES. Model 4 adds the following control variables to model 1: "at least one parent has lost job in the pandemic" and the interaction term "parent has lost job in the pandemic" × Low-SES. Model 5 adds the following control variables to model 1: "at least one parent at home during lockdown" and the interaction term "parent at home during lockdown" × Low-SES. Model 6 includes all variables considered in models 1 to 5. Standard errors are clustered at the class levels.
***/**/*: significant at p-level of 0.01/0.05/0.1

Tasks and games used to construct the prosociality index through PCA

Cooperation

- **Game:** This game is composed of 4 rounds. In each round, each participant owns 1 credit and has to decide how much to send to an anonymous partner (in steps of 0.1 credits). The credits sent to the partner are doubled. The partner has to take the same decision simultaneously. Total gains of the participant are the sum kept plus the (doubled) amount received from the partner. At the end of each round, both participants are informed of their partner's decision.
- **Variable:** The *cooperation* variable represents the average amount sent by a participant to his/her partner across all rounds. *Score 0-1.* Higher scores indicate more prosociality.

Trust

- **Game:** The participant can send from 0 to 5 credits (in increments of 0.5 credits) to the other player (decision 1). The amount sent is tripled. The partner decides how much to send back. This amount isn't tripled.
- **Variable:** The *trust* variable represents the amount sent by a participant to his/her partner on the first move (decision 1). *Score 0-5.* Higher scores indicate more prosociality.

Altruism

- **Task:** Participants can choose five times between a donation to UNICEF for vaccinations against measles (always worth 10 credits) and an increasing amount of credits for him- or herself. The latter amount increases from 2 credits for the participant (in the first choice) in increments of 2 credits up to 10 credits (in the fifth decision). One choice is randomly drawn for implementation.
- **Variable:** The *altruism* variable represents the number of times a student chooses the option to donate to UNICEF. *Score 0-5.* Higher scores indicate more prosociality.

Generosity

- **Task:** At the end of all games and tasks in the experiment, participants were informed about the total amount of credits earned throughout. They then had the option of donating nothing, a part or all of their earnings to one of five charities.
- **Variable:** The *generosity* variable represents the share of a participant's total earnings given to a charity. *Score 0-1*. Higher scores indicate more prosociality.

Experimental instructions

Cooperation game

We offer you to play with another participant for 4 rounds.

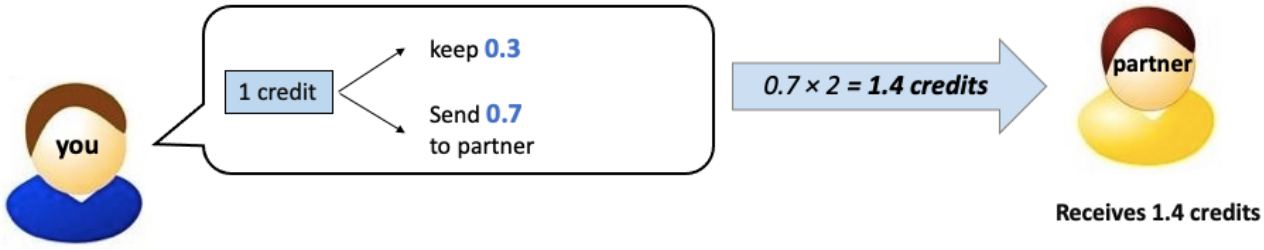
You keep the same partner during the 4 rounds.

In each round, you both receive an initial prize of 1 credit.

Your decision

You have to decide how much of this initial endowment you want to transfer to the other participant (between 0 and 1 credit). The transferred amount will be doubled and the other participant will receive this doubled amount. What you choose not to transfer remains in your possession but will not be doubled.

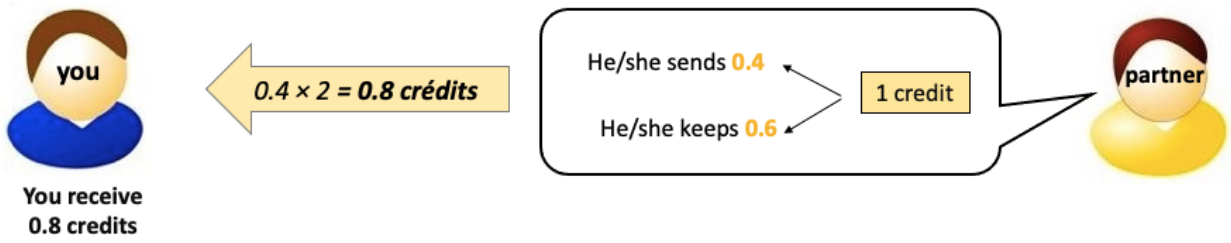
Exemple of your decision



(Simultaneous) decision by your partner

The other participant makes the same decision simultaneously. He decides how much of his initial endowment he wants to transfer to you (between 0 and 1 credit). You will receive double the amount transferred.

Example of your partner's decision



Your winnings on a round are calculated as the sum of what you keep (from your initial prize pool) plus double what the other participant transfers to you.

At the end of each round, you will be able to see the decision made by the other participant and how many credits you have won on that round.

start

Trust game

In this game, you will interact with another participant.

You will both have to make 2 decisions.[1]

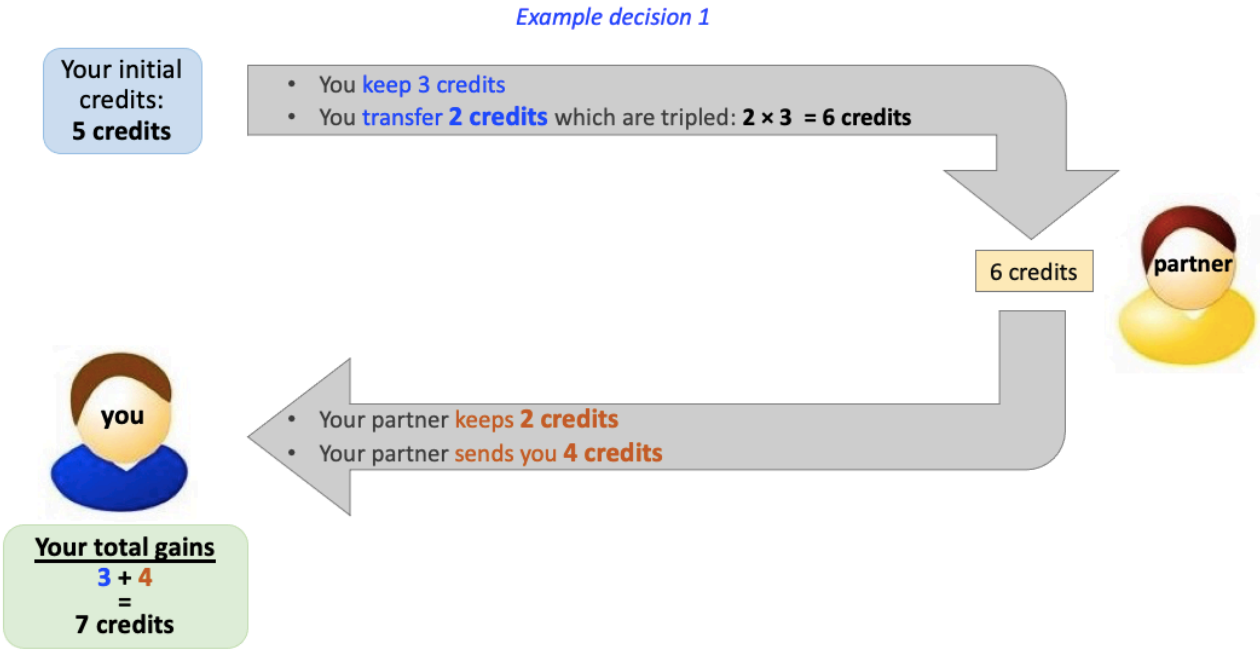
Decision 1

We allocate you 5 credits.

1/ ou can send between 0 and 5 of these credits to the other participant. The amount you send will be tripled.

2/ From this tripled amount, the other participant has to decide how much he wants to send back to you. The quantity sent back to you by the other participant is not tripled.

Your final credits are calculated as follows: Your initial 5 credits **minus** your transfer to the other participant **plus** what the other participant sent back to you



[1] Unfortunately, the computer program for the second decision in the trust game–in the role of second-mover–contained a bug that overwrote participants' actual decisions with a fixed number (5). For this reason, we were unable to take this second decision–which one could interpret as level of trustworthiness–into account in our index of prosociality.

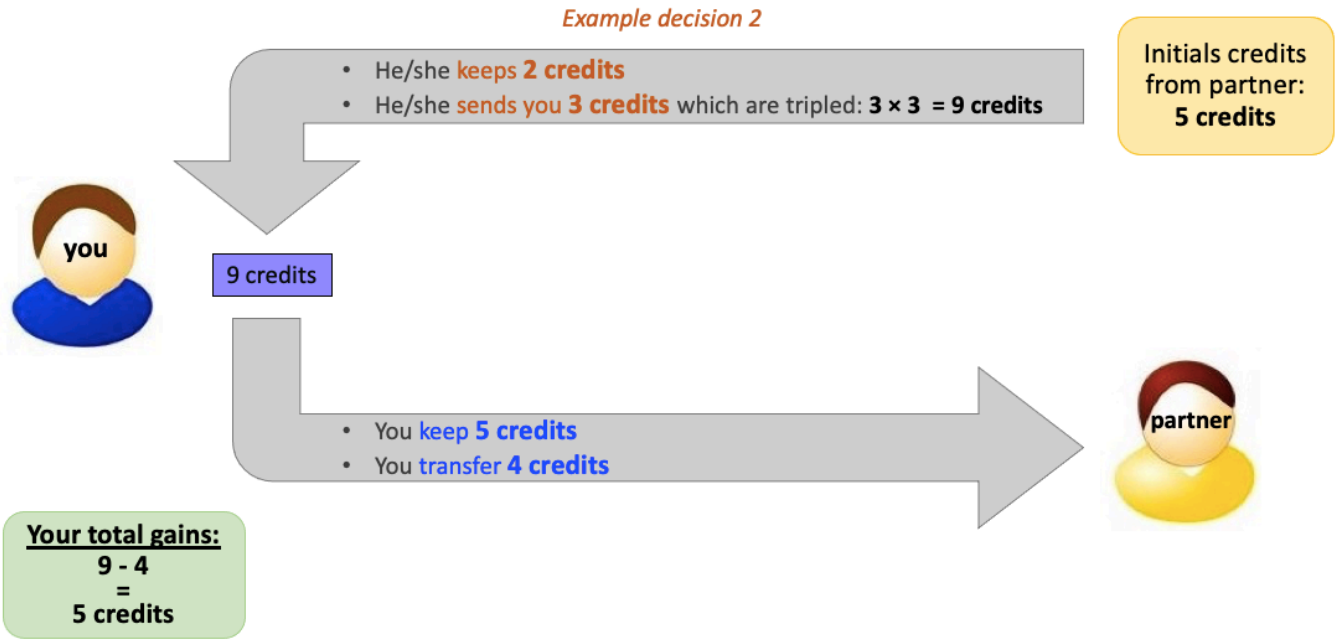
Decision 2

Now the other participant receives an endowment of 5 credits.

1/ He chooses the quantity he wants to send to you (between 0 and 5 credits). This quantity is tripled and sent to you.

2/ You then decide how much you want to send back to the other participant. This returned quantity is not tripled.

Your final credits are calculated as follows: The credits sent by the other participant tripled **minus** what you sent back to the other participant.



When you are ready to start with decision 1, press the start button.

start

Altruism task

In this game, you will be asked to make 5 choices. Only one of these choices will determine the credits you receive if you are drawn.

For each choice, you must choose whether to receive the credits or to donate the credits to UNICEF. If you are drawn, we will transfer your donation to UNICEF and purchase measles vaccines.

Measles is a highly infectious disease that spreads very quickly in densely populated areas. For vulnerable children, the disease is often fatal (more than 100,000 deaths per year worldwide), and can cause long-term physical or mental damage. UNICEF conducts extensive immunization campaigns, particularly after natural disasters and in other emergencies, to prevent the spread of the disease.

For each line, please choose one of the two options:

1)	☐ I receive 2 credits, no donation to UNICEF	☐ Donation of 10 credits to UNICEF, no credit for me
2)	☐ I receive 4 credits, no donation to UNICEF	☐ Donation of 10 credits to UNICEF, no credit for me
3)	☐ I receive 6 credits, no donation to UNICEF	☐ Donation of 10 credits to UNICEF, no credit for me
4)	☐ I receive 8 credits, no donation to UNICEF	☐ Donation of 10 credits to UNICEF, no credit for me
5)	☐ I receive 10 credits, no donation to UNICEF	☐ Donation of 10 credits to UNICEF, no credit for me

confirm

Generosity task

In most of the games you have accumulated credits. Once all students have participated in the games, 300 of you will be drawn. These students can either transfer the credits to an NGO of their choice or keep the credits and convert them into cultural vouchers (for books, concerts, etc.).

You have earned X credit(s) in this session.

If you are drawn, how would you like to use your credits (1 credit = 1 euro)?

Options:

a) Donate all my credits to an NGO

b) Donate part of my credits to an NGO

c) Keep my credits which will be converted into gift vouchers

confirm

COVID-19 Survey

During lockdown, did any of your parents continue to work in an occupation requiring contact with other potential COVID-19 carriers (such as medical staff, cashiers, …; this list is not exhaustive)?

- □ Yes, my mother
- □ Yes, my father
- □ No

Have any of the following people around you had COVID-19?

- □ You
- □ Your parents or siblings
- □ Your grand-parents
- □ Another family member
- □ A friend
- □ Someone in your class
- □ One of your teachers

Have any of the following people in your family been hospitalized as a result of COVID-19?

- □ You
- □ Your parents or siblings
- □ Your grand-parents
- □ Another family member
- □ A friend
- □ Someone in your class
- □ One of your teachers

On average, during the lockdown, how many hours per day do you read information related to COVID-19?

- □ Less than 15 minutes
- □ Between 15 and 30 minutes
- □ Between 30 minutes and 1 hour
- □ Between 1 and 2 hours
- □ More than 2 hours

Since the beginning of the lockdown, is one of your parents also confined at home?

- □ Yes, my father
- □ Yes, my mother
- □ No

Since the beginning of the lockdown, are some of your siblings also confined at home?

- □ Yes, an older brother or sister
- □ Yes, a younger sibling

□ I have no sibling(s)

How many people (including yourself) live in your home?

Were any of your parents partially unemployed as a result of the crisis?

□ Yes, my father
□ Yes, my mother
□ No