

ONLINE APPENDICES

APPENDIX A: Pairwise correlations

Below we display correlations between our variables used from CEOs in the Yangzi delta region study. Figure A1 shows scatterplots between the prisoner's dilemma and each of the five norm vignettes used to measure norm enforcement.

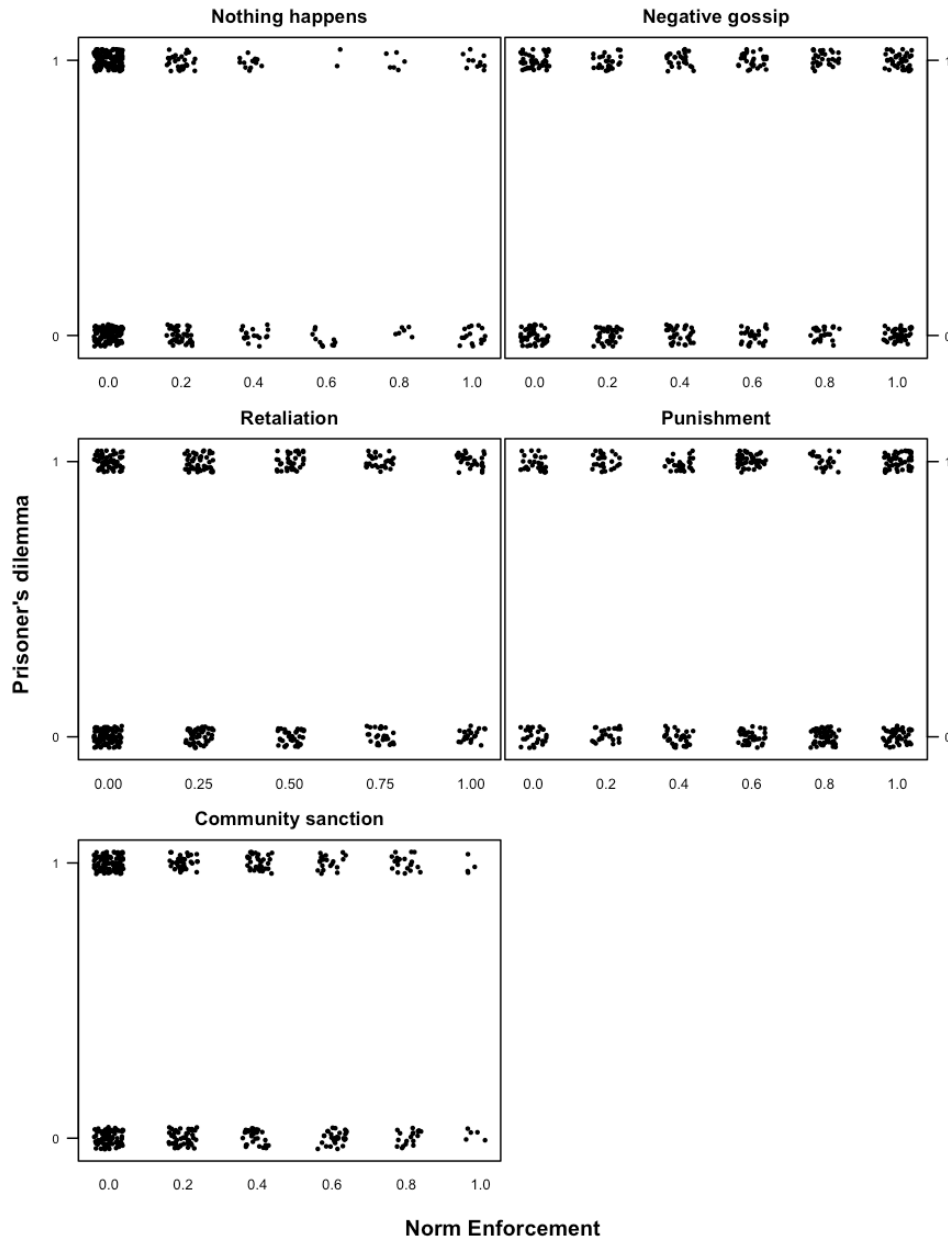


Figure A1: Scatterplot between norm vignettes and prisoner's dilemma among CEOs in the Yangzi delta region.

Table A1 shows pairwise correlations between all variables used, including control variables (see table 2).

Table A1: Pairwise correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Prisoner's dilemma	1.000										
(2) Nothing will happen	-0.09*	1.000									
(3) Negative gossip	0.031	-0.485***	1.000								
(4) Retaliation	0.109**	-0.35***	0.134***	1.000							
(5) Punishment	-0.028	-0.525***	0.078	0.13***	1.000						
(6) Community	-0.033	-0.243***	0.081*	-0.068	0.179***	1.000					
(7) Male	-0.01	-0.065	0.047	0.042	0.067	0.038	1.000				
(8) Income	0.017	-0.02	0.03	0.058	-0.047	-0.08	-0.005	1.000			
(9) Rural	0.107**	-0.038	0.057	-0.003	-0.108**	-0.062	-0.121**	0.056	1.000		
(10) Education	0.1**	0.015	0.007	-0.026	-0.172***	-0.036	-0.038	0.129***	0.31***	1.000	
(11) Age	0.002	-0.039	-0.011	0.05	0.064	-0.021	0.053*	-0.025	0.091*	-0.128***	1.000

* p<0.1; ** p<0.05; *** p<0.01

APPENDIX B: Full tables

Tables 3, 4, and 5 in the main text are displayed below with all covariates as tables B1, B2, and B3, respectively.

Table B1: Prisoner's Dilemma and Norm Enforcement (Weak and Strong Norms)

	Cooperation									
	M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Nothing happens	-0.65* (0.34)	-0.59 (0.37)								
Negative Gossip			0.21 (0.28)	0.01 (0.34)						
Retaliation					0.67** (0.31)	0.62* (0.34)				
Punishment							0.01 (0.31)	0.36 (0.39)		
Community Sanction									-0.13 (0.40)	0.05 (0.45)
Male		0.10 (0.30)		0.12 (0.30)		0.10 (0.30)		0.12 (0.30)		0.12 (0.30)
Income		-0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)
Rural		0.17 (0.24)		0.16 (0.24)		0.17 (0.24)		0.17 (0.24)		0.16 (0.24)
Education		0.01 (0.04)		0.01 (0.04)		0.00 (0.04)		0.01 (0.04)		0.01 (0.04)
Age		-0.19 (0.12)		-0.18 (0.12)		-0.19 (0.12)		-0.18 (0.12)		-0.18 (0.12)
Age ²		0.002 (0.001)		0.002 (0.001)		0.002 (0.001)		0.002 (0.001)		0.002 (0.001)

Hangzhou	0.42 (0.35)	0.30 (0.36)	0.29 (0.34)	0.31 (0.34)	0.29 (0.34)					
Nanjing	1.02*** (0.35)	1.00*** (0.35)	0.99*** (0.35)	1.00*** (0.35)	1.00*** (0.35)					
Shanghai	1.51*** (0.40)	1.51*** (0.40)	1.52*** (0.40)	1.57*** (0.40)	1.52*** (0.40)					
Wenzhou	0.81* (0.35)	0.78** (0.35)	0.71** (0.35)	0.75** (0.35)	0.78* (0.35)					
Mechanical Industry	-0.21 (0.32)	-0.22 (0.32)	-0.17 (0.33)	-0.23 (0.32)	-0.22 (0.32)					
Medical Industry	-0.16 (0.35)	-0.13 (0.35)	-0.09 (0.35)	-0.14 (0.35)	-0.13 (0.35)					
Textile Industry	0.32 (0.39)	0.28 (0.39)	0.32 (0.39)	0.30 (0.39)	0.28 (0.39)					
Transportation Industry	0.17 (0.32)	0.17 (0.32)	0.16 (0.33)	0.18 (0.32)	0.17 (0.32)					
Nothing all		-0.21 (0.46)	0.03 (0.45)	-0.00 (0.49)	-0.20 (0.44)					
Constant	0.06 (0.12)	3.58 (2.97)	-0.17 (0.16)	3.25 (2.97)	-0.31** (0.15)	3.34 (2.97)	-0.08 (0.19)	3.16 (2.96)	-0.05 (0.13)	3.27 (2.95)
N	412	412	412	412	412	412	412	412	412	412
Akaike Inf. Crit.	570.72	565.41	573.96	569.78	569.84	566.49	574.53	568.90	574.43	569.77

Reference city is Changzhou; Reference industry is Electronics.

*p < 0.1; ** p < 0.05; ***p < 0.01

Table B2: Prisoner's Dilemma and Norm Enforcement (Only Strong Norms)

	Cooperation									
	M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Nothing happens	-0.63* (0.35)	-0.51 (0.37)								
Negative Gossip			0.17 (0.27)	-0.09 (0.32)						
Retaliation					0.63** (0.29)	0.63** (0.31)				
Punishment							-0.16 (0.29)	0.10 (0.36)		
Community Sanction									-0.22 (0.34)	-0.11 (0.38)
Male		0.10 (0.30)		0.12 (0.30)		0.11 (0.30)		0.12 (0.30)		0.12 (0.30)
Income		-0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)
Rural		0.16 (0.24)		0.16 (0.24)		0.16 (0.24)		0.16 (0.24)		0.15 (0.24)
Education		0.01 (0.04)		0.01 (0.04)		0.00 (0.04)		0.01 (0.04)		0.01 (0.04)
Age		-0.18 (0.12)		-0.18 (0.12)		-0.19 (0.12)		-0.18 (0.12)		-0.17 (0.12)

Age ²	0.002			0.002		0.002		0.002		0.002
	(0.001)			(0.001)		(0.001)		(0.001)		(0.001)
Hangzhou	0.36			0.26		0.28		0.29		0.31
	(0.34)			(0.36)		(0.34)		(0.34)		(0.34)
Nanjing	1.01***			1.00***		1.01***		1.00***		1.01***
	(0.35)			(0.35)		(0.35)		(0.35)		(0.35)
Shanghai	1.49***			1.52***		1.54***		1.53***		1.51***
	(0.40)			(0.40)		(0.40)		(0.40)		(0.40)
Wenzhou	0.79**			0.77**		0.72**		0.77**		0.78**
	(0.35)			(0.35)		(0.35)		(0.35)		(0.35)
Mechanical Industry	-0.22			-0.22		-0.18		-0.23		-0.22
	(0.32)			(0.32)		(0.33)		(0.32)		(0.32)
Medical Industry	-0.16			-0.14		-0.09		-0.14		-0.13
	(0.35)			(0.35)		(0.35)		(0.35)		(0.35)
Textile Industry	0.28			0.28		0.30		0.27		0.28
	(0.39)			(0.39)		(0.39)		(0.39)		(0.39)
Transportation Industry	0.15			0.16		0.14		0.17		0.17
	(0.32)			(0.32)		(0.33)		(0.32)		(0.32)
Nothing all				-0.26		0.04		-0.15		-0.25
				(0.46)		(0.45)		(0.49)		(0.44)
Constant	0.03	3.47	-0.16	3.35	-0.31**	3.31	0.02	3.20	-0.02	3.23
	(0.11)	(2.96)	(0.16)	(2.97)	(0.14)	(2.97)	(0.19)	(2.96)	(0.13)	(2.95)
N	412	412	412	412	412	412	412	412	412	412
Akaike Inf. Crit.	571.12	566.12	574.13	569.71	569.64	565.73	574.21	569.71	574.09	569.70

Reference city is Changzhou; Reference industry is Electronics.

*p < 0.1; ** p < 0.05; ***p < 0.01

Table B3: Prisoner's Dilemma and Norm Enforcement by City (Only Strong Norms)

	Cooperation									
	M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Nothing happens	-1.42	-1.65								
	(1.17)	(1.21)								
Nothing happens: Hangzhou	0.84	0.97								
	(1.38)	(1.43)								
Nothing happens: Nanjing	1.74	2.03								
	(1.43)	(1.49)								
Nothing happens: Shanghai	3.86*	4.13*								
	(2.10)	(2.13)								
Nothing happens: Wenzhou	-0.46	-0.15								
	(1.46)	(1.50)								
Negative Gossip			0.54	0.57						
			(0.62)	(0.63)						
Negative Gossip: Hangzhou			-0.66	-0.80						
			(1.03)	(1.04)						
Negative Gossip: Nanjing			-1.21	-1.37						
			(0.91)	(0.94)						

Negative Gossip:			-1.13	-1.32							
Shanghai			(0.91)	(0.93)							
Negative Gossip:			0.10	-0.08							
Wenzhou			(0.87)	(0.90)							
Retaliation					-1.06	-1.12					
					(0.73)	(0.74)					
Retaliation:					1.54	1.63					
Hangzhou					(1.05)	(1.07)					
Retaliation:					2.99***	3.13***					
Nanjing					(1.00)	(1.03)					
Retaliation:					1.28	1.33					
Shanghai					(1.11)	(1.13)					
Retaliation:					2.09**	2.14**					
Wenzhou					(0.91)	(0.92)					
Punishment							0.50	0.69			
							(0.71)	(0.74)			
Punishment:							0.78	0.80			
Hangzhou							(1.08)	(1.11)			
Punishment:							-1.44	-1.54			
Nanjing							(1.02)	(1.05)			
Punishment:							-1.91*	-2.11**			
Shanghai							(1.03)	(1.05)			
Punishment:							0.59	0.49			
Wenzhou							(0.97)	(1.02)			
Community Sanction									0.60	0.75	
									(0.72)	(0.74)	
Community Sanction:									0.35	0.34	
Hangzhou									(1.08)	(1.11)	
Community Sanction:									-1.40	-1.67	
Nanjing									(1.02)	(1.05)	
Community Sanction:									-2.48**	-2.87**	
Shanghai									(1.23)	(1.27)	
Community Sanction:									-0.51	-0.73	
Wenzhou									(1.12)	(1.16)	
Hangzhou	0.33	0.31	0.68	0.71	-0.18	-0.26	-0.14	-0.17	0.10	0.08	
	(0.40)	(0.41)	(0.55)	(0.56)	(0.47)	(0.49)	(0.73)	(0.76)	(0.49)	(0.51)	
Nanjing	0.82**	0.77**	1.72***	1.81***	0.03	0.005	1.90***	1.91***	1.44***	1.50***	
	(0.36)	(0.39)	(0.62)	(0.66)	(0.45)	(0.47)	(0.70)	(0.73)	(0.45)	(0.47)	
Shanghai	1.24***	1.13***	2.25***	2.33***	1.17**	1.19**	2.48***	2.49***	2.09***	2.11***	
	(0.37)	(0.43)	(0.65)	(0.70)	(0.50)	(0.54)	(0.65)	(0.70)	(0.44)	(0.50)	
Wenzhou	0.78**	0.87**	0.67	0.91	-0.13	-0.04	0.20	0.39	0.77*	1.01**	
	(0.36)	(0.38)	(0.58)	(0.61)	(0.45)	(0.48)	(0.71)	(0.76)	(0.41)	(0.44)	
Male		0.17		0.16		0.22		0.14		0.13	
		(0.30)		(0.30)		(0.31)		(0.30)		(0.30)	

Income	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Rural	0.15	0.15	0.15	0.15	0.15	0.21	0.21	0.16	0.16	0.16
	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)
Education	0.01	0.00	-0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Age	-0.16	-0.16	-0.20*	-0.16	-0.16	-0.17	-0.17	-0.19	-0.19	-0.19
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Age2	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Mechanical Industry	-0.26	-0.25	-0.17	-0.26	-0.25	-0.19	-0.19	-0.18	-0.18	-0.18
	(0.33)	(0.32)	(0.33)	(0.33)	(0.32)	(0.33)	(0.33)	(0.33)	(0.33)	(0.33)
Medical Industry	-0.12	-0.12	-0.11	-0.12	-0.12	-0.08	-0.08	-0.07	-0.07	-0.07
	(0.35)	(0.35)	(0.36)	(0.35)	(0.35)	(0.36)	(0.36)	(0.35)	(0.35)	(0.35)
Textile Industry	0.31	0.33	0.30	0.31	0.33	0.33	0.33	0.46	0.46	0.46
	(0.40)	(0.39)	(0.40)	(0.40)	(0.39)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)
Transportation Industry	0.19	0.17	0.08	0.19	0.17	0.21	0.21	0.24	0.24	0.24
	(0.33)	(0.33)	(0.33)	(0.33)	(0.33)	(0.33)	(0.33)	(0.33)	(0.33)	(0.33)
Nothing all		-0.25	0.10		-0.25	0.19	0.19	-0.22	-0.22	-0.22
		(0.48)	(0.45)		(0.48)	(0.55)	(0.55)	(0.46)	(0.46)	(0.46)
Constant	-0.63**	2.98	-1.11**	2.68	-0.46	4.35	-1.08**	2.53	-0.93***	3.04
	(0.26)	(2.99)	(0.45)	(3.01)	(0.32)	(3.03)	(0.50)	(3.02)	(0.30)	(3.01)
Observations	412	412	412	412	412	412	412	412	412	412
Akaike Inf. Crit.	550.15	564.19	558.07	573.66	546.57	562.79	550.13	565.98	554.78	569.15

Reference city is Changzhou; Reference industry is Electronics.

*p<0.1; **p<0.05; ***p<0.01

APPENDIX C: Cooperation in the Prisoner's Dilemma and Trust

Nee et al. (2018) study how general trust in strangers is learned. In that study, the dependent variable is an incentivized measure of trust which is elicited in 2009 and thus three years earlier than the PD was played. We will here briefly describe how trust can be related to cooperation. PD has some strategic similarities to the trust game (for the player having the “trustor” role), and previous research has documented some statistical relationship between behaviors in the two strategic situations (see Chaudhuri et al., 2002). To illustrate the similarities and also to explain the important differences in these situations we have constructed a binary trust game in Figure A2 using the same payoffs as the ones used in our PD.

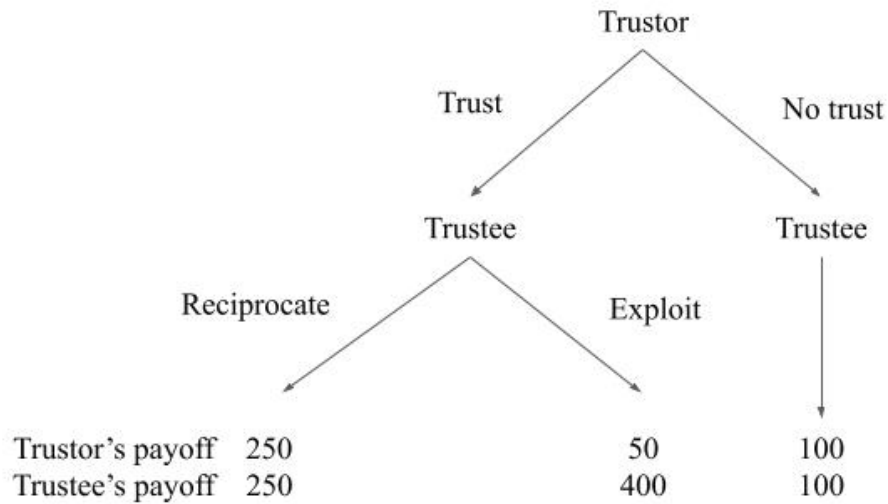


Figure C1: Binary Trust Game

In the binary trust game, the Trustor (he) can choose between Trust and No Trust and where the Trustee (she) has a choice only if the Trustor chooses to trust. The equilibrium (here the subgame perfect Nash equilibrium) is for the Trustor to choose No Trust, since if he chooses Trust the Trustee's best reply will be to choose Exploit, which only gives 50 to the Trustor. The Trustor foresees this response in equilibrium and therefore chooses No Trust, which corresponds to the equilibrium in PD, where both players defect.

There are some important differences between the games. The trust game is sequential, which means that the Trustee knows if the Trustor places trust in her or not, and (importantly) the Trustor knows that the Trustee will have this information. This reduces the overall strategic uncertainty in the situation in two important ways. The Trustee will act under certainty since either she has no choice or she determines the outcome completely by her decision. In contrast, in PD, which is symmetric both players act under strategic uncertainty since they choose simultaneously without information about the other player's choice. Secondly, since the Trustee will get information (about the Trustor's choice) and the Trustor

knows this, the latter can reduce his uncertainty by relying on strong behavioral mechanisms like conditional cooperation, which is not available in the one-shot PD. Hence, if the Trustor strongly believes that most other people are conditional cooperators, he will find it relatively safe to Trust in the binary Trust game above, but not necessarily in the PD.

From the analysis above it should be clear that even if the Trustor's choice in binary trust game is somewhat similar to the players' choices in the PD, there are important differences. The strategic uncertainty and vulnerability in PD are larger since a player cannot reveal his potential good intentions in such a game. Still, both types of strategic situations are highly relevant in exchange situations with strangers. Contextual factors will matter if a situation can be organized so that decisions are taken sequentially (as in the trust game) or simultaneously, as in the PD. Furthermore, it may be that norms affect different dimensions of the strategic uncertainty that entrepreneurs experience.

The trust elicitation in Nee et al. (2018) had the sequential structure where the Trustor knew that the Trustee made her choices conditional on the information of what the Trustor had chosen. Furthermore, the elicitation utilized a multiple price list method, which is quite different from the PD situation used in this paper. The correlation coefficient between trust elicited in 2009 and cooperation in 2012 is only 0.068 and not statistically significant, which indicates that the trust elicitation and PD pick up different behaviors. The surprisingly weak correlation is probably due to the substantial differences in elicitation methods used and the time lap between the elicitations.

APPENDIX D: Online Experiment in the United States

To obtain additional insights on the links between norms and cooperative behavior, we conducted an online experiment on Amazon Mechanical Turk (AMT), where we experimentally manipulated our norm vignettes and tested whether exposure to community norms increased the probability of cooperation

with strangers¹. Although MTurkers are very different from our unique sample of CEOs, an online experiment allows us to causally test if norm inducement will increase cooperation in this particular group. Based on our main results, we formulated the following two hypotheses:

H1: *Reciprocity norms of cooperation increase cooperation among MTurkers with strangers relative to a situation where norm violation is not sanctioned.*

H2: *Community norms of cooperation increase cooperation among MTurkers with strangers relative to a situation where norm violation is not sanctioned.*

In order to expose MTurkers to norm violations that are more natural to them, we incorporated common complaints against requesters on the Mturk community on Reddit and framed our norm vignettes accordingly. We had three experimental conditions where the key manipulation induced different cooperation norms among workers on AMT through the presence or absence of sanctioning mechanisms. In the control group, respondents were primed with the absence of social sanctions. In the treatment group **a**, respondents were primed with the use of retaliatory sanctions. And in the treatment group **b**, respondents were primed with the use of community sanctions. In each condition, participants had to unscramble seven sentences (Hafenbrädl and Waeger 2017; Feinberg and Willer 2011), four of which included primes with presence or absence of social sanctions following our experimental manipulations. Then, they played a one-shot prisoner's dilemma against an unknown person "who lives in the United States." We recruited 619 participants located in the United States and assigned them randomly to one of these three conditions (we excluded 9 participants who played twice)².

¹ We pre-registered our hypotheses and experimental design before conducting the experiment at the Center for Open Science (for more details, see <https://osf.io/5mkz4>). Our design was reviewed and approved by the Institutional Review Board at Cornell University. The protocol ID for this experimental task was 2006009649. Informed consent was collected from all participants before participation in the study.

² Control group had 195 participants, treatment **a** had 228 participants, and treatment **b** had 187 participants.

We then collected sociodemographics data at the end of the study.³

Table D1 shows the main results of the experiment based on a logistic regression of the one-shot PD on our experimental conditions. As shown, we do not observe any differences between the control group (primed with absence of sanctions) and our groups **a** (primed with retaliatory sanctions) and **b** (primed with community sanctions), thus rejecting both H1 and H2.

Table D1: Cooperation Norms and Prisoner’s Dilemma

	Cooperation	
	Model 1	Model 2
Community Norms	0.003 (0.21)	-0.08 (0.22)
Reciprocity Norms	0.27 (0.2)	0.19 (0.21)
Graduate or Professional Degree		-0.02 (0.24)
High School		-0.09 (0.30)
Less Than High School		0.35 (1.46)
Some College		-0.01 (0.23)
Income < 25k		0.14 (0.30)
Income 25k – 50k		-0.12 (0.23)
Income 50k – 75k		0.07 (0.23)
Female		0.28 (0.17)
Political Orientation		0.05 (0.03)
American Indian or Alaska Native		0.5 (1.03)
Asian		-0.51 (0.36)
Black or African American		0.31 (0.31)
Latino		-0.13 (0.41)
Other (race)		-0.13 (0.65)
Age		0.01 (0.01)
Catholic		0.34

³ Socio-demographic variables included: year of birth, highest level of education, gender, race, annual family income, religion, and political orientation.

		(0.24)
Lutheran		0.41 (0.70)
Muslim		-1.05 (0.81)
Other		-0.01 (0.33)
Protestant		-0.18 (0.24)
Constant	-0.45*** (0.15)	-1.05*** (0.4)
Observations	610	599
AIC	831.26	837.41

*p<0.1; **p<0.05; ***p<0.01

While it is very difficult to explain null results and why we do not find similar results as detected among Chinese CEOs, we want to point to two features of the study that may weaken a potential link between norms and cooperative behavior in the online experiment. One is the relatively large difference between MTurkers and Chinese CEOs in many dimensions such as nationality, occupation, and strategic thinking. Holm et al. (2020) report that the group of Chinese CEOs cooperated significantly more than a comparison group of non-CEOs, which suggest that mechanisms promoting cooperation are stronger among CEOs. Another is that the artificial norm-inducement method used in the online experiment may be too mild to affect incentivized behavior in the PD among MTurkers. For instance, MTurk workers have a vertical relationship with MTurk requesters as employees and employers, respectively, and therefore do not respond the same way to ‘demand-side’ incentives as Chinese CEOs when they learn of novel ideas and knowhow from strangers, nor do MTurkers routinely reach out beyond their local communities to compete for market share. In fact, when we do a manipulation check, we do not find that the MTurkers’ norms were affected in the way intended. The institutional environment of lab-in-the-field behavioral games appears to matter in the results obtained.