



**HAL**  
open science

## Teaching Norms: Direct Evidence of Parental Transmission

Thijs Brouwer, Fabio Galeotti, Marie Claire Villeval

► **To cite this version:**

Thijs Brouwer, Fabio Galeotti, Marie Claire Villeval. Teaching Norms: Direct Evidence of Parental Transmission. *The Economic Journal*, 2023, 133 (650), pp.872-887. 10.1093/ej/ueac074. hal-03793652

**HAL Id: hal-03793652**

**<https://hal.science/hal-03793652v1>**

Submitted on 1 Oct 2022

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Teaching Norms: Direct Evidence of Parental Transmission  
(*Short title: Teaching norms and parental transmission*)\*

Thijs Brouwer<sup>†</sup>      Fabio Galeotti<sup>‡</sup>      Marie Claire Villeval<sup>‡</sup>

August 19, 2022

**Abstract**

We examine the educative role played by parents in social norm transmission. Using a field experiment, we study whether parents enforce and comply more with norms when their children are present compared to when they are not. We compare similar parents when or after they bring or pick up their children at school. We find that parents accompanying children, in contrast to parents alone, are more likely to punish norm violators and to provide help to strangers when there is no violation. They also tend to substitute more direct punishment with withholding help as a means of indirect punishment.

**Keywords:** Field Experiment, Social Norms, Transmission, Parenting, Norm Enforcement.

**JEL codes:** C93, D1, D63.

---

\* *Acknowledgements:* We thank the Editor and the reviewers for their excellent guidance in the revision of this paper. We express our gratitude to the actors and research assistants for their excellent assistance in the project. We thank C. Bicchieri, S. Gaechter, E. Fatas, N. Jacquemet, P. Moffatt, H. Schildberg-Hörisch, R. Sugden, M. Sutter, B. Tungodden, and participants at the ANZWEE Conference in Melbourne, at the NOBEC Talks at the University of Pennsylvania, the Workshop on Norms and Image Concerns in Bonn, and seminar participants in Bonn, Dijon, Düsseldorf, Grenoble, Konstanz, Lund, Norwich, Paris, Reading, Tilburg, Vienna, and at WZB Berlin for helpful comments. Support from the LABEX CORTEX (ANR-11-LABX-0042) of Université de Lyon, within the program Investissements d’Avenir (ANR-11-IDEX-007) operated by Agence Nationale de la Recherche (ANR) and from IDEXLYON from Université de Lyon (INDEPTH-IDEX/SBP/2018/03) within the Programme Investissements d’Avenir (ANR-16-IDEX-0005) is gratefully acknowledged. This project was conceived during T. Brouwer’s research visit at GATE LSE, funded by a grant of IDEXLyon from the Université de Lyon. The paper was in part revised during a visiting scholarship of F. Galeotti at the Ca’ Foscari University of Venice. Ethical approval was obtained from CEEI, the IRB of the French National Institute of Medical Research and Health (Inserm) (IRB00003888, No.19-592).

<sup>†</sup>Tilburg University, Department of Economics. Email: [thijs.brouwer@hotmail.com](mailto:thijs.brouwer@hotmail.com)

<sup>‡</sup>Univ Lyon, CNRS, GATE, UMR 5824, 93 Chemin des Mouilles F-69130 Ecully, France. Email: [fabio.galeotti@cnrs.fr](mailto:fabio.galeotti@cnrs.fr), [villeval@gate.cnrs.fr](mailto:villeval@gate.cnrs.fr)

# 1 Introduction

Social norms, as shared understandings of what is acceptable or forbidden to do in society (Ostrom, 2000), play a major role in governing daily social interactions in various economically relevant settings. While there is an abundant literature on how they are enforced, we still know little on how they are transmitted from one generation to another (*e.g.*, Bowles and Gintis, 1998; Lindbeck and Nyberg, 2006; Tabellini, 2008). Research in developmental psychology suggests that children acquire social behaviour and internalise norms from young age partly through the observation and subsequent imitation of adults (Bandura, 1965, 1977). Parents are said to play a major role in this social learning process (McCord and McCord, 1958; Maccoby, 1992; Bauer *et al.*, 2014). Norms can also be internalised by experiencing punishment when not complying with them (Sugden, 1986; Coleman, 1994; Young, 2008) or by observing others enforcing these norms (Malouff *et al.*, 2009). Children understand the fairness of such enforcement (Piaget, 1932) and use third-party costly punishment already at primary school age (Lergetporer *et al.*, 2014). This implies an alternative way through which norms are transmitted: parents may teach their child about norms by not only complying with them but also by *punishing* norm violations of others in the presence of their child. By doing so, the child learns vicariously that violations will not go unpunished, which may serve as an efficient deterrence mechanism to ensure future generation's norm compliance.

We conducted a field experiment in the vicinity of 30 public elementary schools, chosen randomly, in Lyon, France, involving 601 parents of children aged 3 to 12 to address two questions in relation to parental transmission behaviour. First, we ask whether parents engage more in norm enforcement in the presence of their child, presumably with the aim of educating the child. Our conjecture is that parents are willing to exert more effort in terms of norm enforcement in the presence of their child because it allows them to transmit to their offspring their values and principles about the right conduct, with the expectation of a higher benefit for their child in the future. This is related to the notions of parents' imperfect empathy (Bisin and Verdier, 2001) and paternalistic

altruism (Doepke and Zilibotti, 2019).

Second, we ask whether the nature of punishment changes in the presence of the child. Previous research has indeed identified two main forms of norm enforcement (Balafoutas *et al.*, 2014). As a first means, someone can engage in direct punishment of a violation by verbally confronting the violator. However, the deterring effect of direct punishment is seriously hampered by the risk of retaliation (Janssen and Bushman, 2008; Nikiforakis, 2008), which typically causes direct punishment rates of norm violations to be low in field studies compared to anonymous laboratory experiments (Balafoutas and Nikiforakis, 2012; Balafoutas *et al.*, 2014, 2016; Berger and Hevenstone, 2016; Artavia-Mora *et al.*, 2017). Instead, individuals may resort to indirect punishment that does not involve a risk of retaliation (Casari, 2012), as a substitute for direct punishment. In line with Balafoutas *et al.* (2014), we identify indirect punishment as withholding help to the violator. We explore whether the presence of their child changes the way parents use direct *vs.* indirect punishment of a norm violation to educate the child. We conjecture that the parents may not necessarily perceive that the risk of counter-punishment is higher in the presence of the child but that such counter-punishment may generate a negative externality by harming their image in the eyes of their child or by inducing some stress in the child. If this is the case, enforcing a norm directly is associated with a higher cost, which may lead to a higher degree of substitution between direct and indirect punishments.

Our primary focus is on the norm of non-littering and the violation thereof.<sup>1</sup> We employed a  $3 \times 2$  design in which we varied the opportunity to enforce the norm and the presence of the child. To isolate the effect of the presence of a child, and thus the parents' teaching motivation, it is crucial to be able to compare similar parents in the same environment, the only difference being the presence of the child. We targeted parents who either brought their child to school in the morning or just picked up their child from school in the afternoon, and parents who either just left their child at school

---

<sup>1</sup>The importance of compliance with this norm is universally acknowledged. As an illustration, a representative survey ( $N = 1060$ ) conducted by TNS Sofres revealed that 85% of French adult population considered littering unacceptable, and more deplorable than other acts such as vandalism (74%) and speeding on the highway (44%) (<https://www.recyclage-recuperation.fr/archives-dechets-com/les-francais-se-disent-anti-dechets-sauvages>; accessed on June 8, 2022)

in the morning or came to pick up their child from school in the afternoon. This set-up provides natural variation in whether or not the child is present for an otherwise comparable sample of parents.

In order to implement the norm violation scenario in the most similar conditions across treatments and with high control, we recruited two trained actors, a male and a female. Each actor played one of three different scenes, inspired by Balafoutas *et al.* (2014). Depending on the scene, the actor (i) violated intentionally the non-littering norm (“Violation”), (ii) dropped, seemingly accidentally, the content of his or her bag on the ground, suggesting a need for spontaneous help (“Help”), or (iii) both (“Violation + Help”). These scenes provided the targeted parent an opportunity to sanction the norm violation directly, help a stranger in need, or both, respectively. Treatment (i) informs us on the prevalence of direct punishment, while treatments (ii) and (iii) together are informative of the rates of indirect punishment through withholding help.

We find that twice as many parents (22 *vs.* 11 percent) engaged in direct punishment when accompanying children, as compared to being alone. This reveals a higher willingness of parents to enforce the non-littering norm in the presence of their child. In the absence of a norm violation, parents with children were about twice more likely to help the actor pick up his or her fallen items compared to parents alone (47 *vs.* 26 percent), expressing the higher willingness of parents to model the norm of helping when their child is present. By contrast, the drop in helping following a violation was not significantly larger for parents accompanying children than for parents alone (16 *vs.* 10 percentage points). Our experiment does not provide conclusive evidence for a higher tendency to punish indirectly, although parents *were* more likely to substitute direct for indirect punishment when their child was around.

These findings contribute to the literature on the role of parents in the inter-generational transmission of values and preferences by assessing their norm enforcement behaviour with the aim of educating their children. The development of preferences in children has received a lot of attention in the developmental psychology and economics literature (Sutter *et al.*, 2019), resulting from the need to better understand the behaviour of adults through the development of non-cognitive skills in childhood (e.g.,

Heckman and Rubinstein, 2001; Heckman *et al.*, 2006). This has spurred a myriad of papers assessing the correlation between parents' and children's preferences (Dohmen *et al.*, 2012; Kosse and Pfeiffer, 2012; Alan *et al.*, 2017; Brenøe and Epper, 2019; Chowdhury *et al.*, 2022; Cipriani *et al.*, 2013; Sutter and Untertrifaller, 2020; Chowdhury *et al.*, 2022). Factors that have been identified as affecting the formation and transmission of preferences include parenting styles and investments (Cunha and Heckman, 2010; Heckman and Mosso, 2014; Zumbuehl *et al.*, 2020; Alan *et al.*, 2017; Attanasio *et al.*, 2020), breastfeeding as a proxy for the quality of early child environment (Falk and Kosse, 2016), exposure to a mentor (Kosse *et al.*, 2020), language (Sutter *et al.*, 2018), parental ambitions (Khadjavi and Nicklisch, 2018) and culture (Gneezy *et al.*, 2009; Andersen *et al.*, 2013; Falk *et al.*, 2018). Furthermore, parental behaviour has been identified as an important explanation for the gap in preferences and personality traits between children from low and high socio-economic status families (Benenson *et al.*, 2007; Bauer *et al.*, 2014; Falk *et al.*, 2021, 2018; Kosse *et al.*, 2020; Sutter and Untertrifaller, 2020).

This literature shows the potential for children's preferences to be moulded by parental socialization efforts, but few scholars have examined this directly. Ben-Ner *et al.* (2017) investigated parents' tendency to model behaviour in a dictator game to their children, Lindbeck and Nyberg (2006) and Houser *et al.* (2016) studied parents' dishonest behaviour in the presence and absence of their child, and Cappelen *et al.* (2020) compared the effects of early childhood interventions and parenting programs on the formation of social preferences in children. While these studies were conducted in highly controlled environments, we are able to assess parents' natural behaviour because parents and children were not aware of being part of an experiment. Moreover, we take a novel perspective by not just studying the extent to which parents model behaviour, but also how they teach through punishing others' undesired behaviour. This latter feature has, to the best of our knowledge, not been studied before.<sup>2</sup>

---

<sup>2</sup>We acknowledge that our study only documents the teaching side of the transmission process. Observing both teaching by parents and learning by their children would offer a complete picture of the transmission process duality. It would be extremely challenging, though, in a natural setting. Giving children an opportunity to violate a norm just after our intervention would have allowed us to test whether the children whose parents enforced the norm in reaction to the actor's intervention reacted differently than children whose parents did not enforce it. However, such option would have raised ethical issues. An alternative would have been to survey the children about social norms. This would

Section 2 lays out our design and conjectures. Section 3 reports our results and section 4 provides a concluding discussion.

## 2 Experimental Design

We ran our field experiment in the vicinity of 30 randomly-selected public elementary schools in Lyon, France. We recruited two trained actors, one male and one female, from a professional acting school. Teams of four collected the data: one actor, two research assistants (RA1 and RA2), and one supervisor (one of the researchers). The actor and the two RAs were blind to the purpose of the study.

### 2.1 Conditions and Conjectures

Our experiment uses a  $3 \times 2$  between-subject design. One dimension varies the naturally occurring presence of the child, while the other dimension manipulates experimentally the setting of a norm violation. Regarding the first dimension, we targeted parents approaching *and* leaving the school in the morning *and* in the afternoon. This naturally varies whether the child is present or the parent is alone. This creates two conditions, to which we refer as “Child” (*C*) and “Alone” (*A*). This design makes sure that we target a similar sample of parents in the two conditions.

Regarding the second dimension, the protocol of the scenes is inspired by [Balafoutas et al. \(2014\)](#). In all conditions, the actor, who wears plain clothes, holds a small plastic bag containing food waste (a banana peel) and carries a cotton shoulder bag containing five file folders and a few pens (see Appendix A.3). The actor plays one of three different scenes in front of a targeted parent in the streets surrounding the targeted school. The scenes constitute our three treatments and they are summarised in Table A3 in Appendix A.1. They differ in the opportunities that are provided to the parent to enforce the norm, as explained below. The first scene, called the “Violation” treatment, aims at measuring the prevalence of direct punishment of a social norm violation. In

---

have raised other challenging issues, such as measuring the children’s initial knowledge of social norms and time pressure. Thus, we did not follow this line. Note, however, that studying parents’ teaching behaviour is the first natural and indispensable step when analysing the transmission process.

this scene, the actor approaches the targeted parent from the front. When the parent is roughly 10 meters away, the actor pauses and goes through the cotton bag. Then, when the parent is roughly 5 meters away, the actor litters in the clear sight of the parent by throwing away the plastic bag with the food waste towards the side of the street. Subsequently, the actor slowly starts moving again, while still going through the bag, clearly showing no intention to pick up the litter. We classify all forms of verbal confrontation aimed directly at the actor and which explicitly address the violation as direct punishment.<sup>3</sup>

The difference in direct punishment rates after observing the violation of the norm between the Child and Alone conditions informs on the parents' tendency to engage in direct punishment with the goal to teach the child that the norm violation constitutes misbehaviour that ought to be punished. Following social learning theory (Bandura, 1977) or parenting models such as Doepke and Zilibotti (2019), we conjecture that educative motives spur parents to inflict direct punishment when the child is present.<sup>4</sup>

**Conjecture 1 (Direct Punishment).** *In reaction to a social norm violation, direct punishment rates are higher for parents accompanying a child than for parents alone.*

An implicit assumption underlying Conjecture 1 is that the fear of retaliation is the same across conditions. This need not be the case. On the one hand, the parent may be afraid of retaliation more in the presence of the child. In particular, the parent may fear for his or her image and be anxious that the child will be involved in some way in the retaliation, even by simply witnessing it. If this is the case, our experiment may underestimate the effect of the child's presence and this would work against Conjecture 1, making any results that support it even more convincing. On the other hand, the parent may deem the violator less likely to retaliate in front of a child. If so, we may overestimate the effect of the child's presence. We discuss this issue further in Section 3 when presenting our results.

Because of the fear of retaliation discussed above, direct punishment rates are typically low in the field (Balafoutas *et al.*, 2014, 2016). Instead of direct punishment,

---

<sup>3</sup>For example, "Do not throw that on the ground; throw it in the garbage bin."

<sup>4</sup>All conjectures have been pre-registered with AsPredicted (#24270).



parents may resort to forms of indirect punishment, for which retaliation is arguably less likely. We provide the opportunity for indirect punishment in the second treatment, called “Violation + Help”. This scene starts in a similar way as the Violation scene. Then, after having littered, the actor accidentally drops the contents of his or her bag on the sidewalk. This presents the parent with an opportunity to withhold help as a form of indirect punishment.<sup>5</sup>

We define a parent to help if he or she picks up at least one item from the ground, as in Balafoutas *et al.* (2014). In case parents stimulate their children to help, this also counts as helping.<sup>6</sup> In order to measure whether parents withhold help, we introduce a third treatment, called “Help”. In this scene, the helping opportunity is not preceded by a littering violation. Indirect punishment then shows in the aggregate through significantly lower helping rates in the presence of a violation. We conjecture that educative motives induce parents to punish indirectly more often when the child is around, meaning that we should observe a larger decrease in helping rates in the presence, rather than the absence, of the child.

**Conjecture 2 (Indirect Punishment).** *The extent to which parents withhold help after observing the violation of a social norm is larger in the presence of the child.*

Although indirect punishment is less likely to evoke retaliation, the educative motive of withholding help is probably weaker than that of direct punishment, as its implicit nature may be harder for the child to grasp. The child may thus not understand completely that the parent is punishing the violator, especially if the helping norm is not yet well-established in the child’s mind. Hence, the marginal teaching benefit from indirect punishment is likely to be smaller than that of direct punishment. This consideration would, however, work against our conjecture. The Violation + Help treatment may also be informative about the fear of retaliation between conditions, as we can observe the extent to which direct punishment is substituted for indirect

---

<sup>5</sup>To equalise the window of opportunity to punish *directly* across scenes, the actor pauses a second time in the Violation scene around the same time where (s)he would drop the files in the other two scenes.

<sup>6</sup>This was a rare event and treating it as not helping does not change the results (see Appendix A.4.5). The rare cases the child helped without any intervention of the parent are not counted as helping.

punishment. In case the drop in direct punishment is larger (smaller) in the Child condition as compared to the Alone condition, this would point to a higher (lower, respectively) fear of retaliation in the presence of the child.

Finally, helping someone is another social norm that parents may be willing to transmit to their children. Based on social learning theory (Bandura, 1977), we expect helping rates in the Help scene to be higher for parents accompanying their child, as compared to parents alone.

**Conjecture 3 (Helping).** *When no social norm is violated, parents in the presence of their child, in contrast to parents alone, are more likely to provide help.*

## 2.2 Procedures

The different scenes were played in mixed order in the morning approximately between 7:45 and 9:00, and in the afternoon between 16:15 and 18:00. We visited each school during at most one day to avoid being recognized. The actors were randomly alternated across schools, except for the first session where both actors were present in order to homogenize the procedures.<sup>7</sup> Targeted parents were identified by the actor and the supervisor. We restricted ourselves to single parents walking alone or with one or more children. To make the cost of helping negligibly small for parents and unrelated to the presence of the child, and because being in emergency might affect helping behaviour (Darley and Batson, 1973), we did not target parents visibly in a rush, talking on the phone, pushing a stroller, riding a bike, walking a dog, holding something with both hands, and/or accompanying disabled children. In case the parent engaged in direct punishment, the actor always complied and disposed of the litter. Subsequently, the actor quietly left the scene.

In the meantime, RA1 observed the scene from a distance and recorded the type of scene being played, and whether the target actually observed the actor littering and dropping the content of his or her bag, because it was crucial that targets paid attention to the scene being played. RA1 also recorded whether the parent was accompanied by

---

<sup>7</sup>In three occasions, one actor could only be present in the morning, and was substituted by the other actor in the afternoon.

one or more children, and the parent’s response to the scene: whether the targeted parent helped the actor, confronted verbally the actor regarding the violation, or expressed his or her disapproval to the child in a way that could be heard by the actor. RA1 recorded whether there were witnesses who could possibly have intervened in the scene, the gender of the parent and the child, the weather conditions, the time of the day, and the cleanliness of the street. After the scene had ended, RA1 cleaned up the scene in case of a non-sanctioned littering violation and verified the recorded information with the actor.

After the targeted parent had left the scene, RA2 approached the parent and asked whether he or she was willing to participate in a short, seemingly unrelated, survey. Our main interest was in the question whether the target was accompanying or had accompanied (i) his or her own child, (ii) a child that he or she guards, (iii) the child of a relative, or (iv) no child. In cases (i) to (iii), we also asked for the child(ren)’s age and gender. If a parent declined to take the survey, RA2 had to guess the gender and age of the child(ren), if present. We dropped from the sample targets indicating they had no child going to the school. For an exhaustive list of information recorded, see Appendix A.2.

**Challenges** We identified three main challenges in relation to our design. First, parents might be more in a hurry when arriving at school, rather than when leaving school. We addressed this issue by running the scenes both in the morning when parents dropped off their kids *and* in the afternoon when parents arrived at school to pick up their child. As a result, we equalized parents’ “hurry” between child conditions as much as possible. As additional measures to avoid parents in a hurry altogether, we mainly staged the scenes before the five minutes prior to the beginning or end of the class, and avoided parents who were visibly in a rush. Also, we ensured that each of the scenes did not last for more than a couple of seconds and that helping constituted a quick act. Note that direct punishment does not take long either since the target can express disapproval while continuing to walk. Finally, we examined whether there are timing effects in our data and found none (see Appendix A.4.7).

A second concern was the audience of the interaction. It was hard to target only one parent in an otherwise empty street, because parents arrived with their children around the same time. In addition to RA1 recording whether there are any witnesses, we combated this by identifying the more secluded streets in the school neighborhoods and be present 30 to 40 minutes before the beginning or ending of class. In case another parent was approaching while the scene was about to start, the actor waited until the person had passed before starting the scene.

A third concern was whether the targeted adult was indeed the parent of the child. Children might also be picked up from and dropped off at school by their nannies or other caretakers. Insofar as these caretakers still play an important role in the child’s education, studying their behavior remains relevant. We might, however, need to be careful with labeling observed behavior as a tendency of *parents per se*. We combated this potential issue by means of the survey conducted directly after the scene and that allowed us to evaluate the proportion of parents across conditions.

**Locations and Sample Size** In Appendix A.1, we discuss the determination of the sample size and the selection of the schools in detail.

## 3 Results

### 3.1 Data Description

The experiment was run on 30 days in May and June 2019. We collected 601 observations: 301 in the Alone condition and 300 in the Child condition. Our primary outcome variables are (Direct) Punishment and Helping. Punishment is a dummy that takes on value 1 if the parent verbally and explicitly punishes the actor for the violation of the non-littering norm, and 0 otherwise. Helping is a dummy that takes on value 1 if the parent picks up at least one item (or asks the child to pick one), and zero otherwise. The data and codes for this paper are available in [Brouwer \*et al.\* \(2022\)](#).

Our main interest is in the effect of the scene played (Violation, Help, or Violation + Help) and the condition (Child or Alone). Moreover, we control for the following

observables in the regressions. Male Target is a dummy indicating that a father was targeted, while Male Actor indicates that the male actor played the scene. Morning, Rain, and Hot are dummies indicating that the scene was played during the morning, during rainy conditions, and on a hot day, respectively. Witness is a dummy that takes on value 1 if RA1 deemed another non-targeted adult to be observing the scene *and* to be able to intervene. Finally, we created Rich IRIS which takes value 1 if the school’s IRIS area median income is above the city-wide median.<sup>8</sup> Table 1 shows that our sample is balanced on most controls, with two notable exceptions. The scenes of the Child condition were somewhat more likely to be played in the morning (significant at the 1% level) and with a witness around (significant at the 10% level).

Regarding the survey, 47% of the approached parents responded to the survey. Here, we exclude parents who could not be reached for various reasons (*e.g.*, they were talking to another person). Responding to the survey can to some extent be treated as a helping act. Since parents in the Child condition were more likely to respond to the survey than parents in the Alone condition, this may hint at parents behaving more pro-socially in the presence of their child. It may also indicate that parents in the Alone condition were on average more in a hurry than when accompanied; however, there is no obvious reason for which this would be the case, and the higher response rate of parents with their child was observed regardless of the time of the day and of the condition (see Appendix A.4.1). Nevertheless, the data analysis accounts for the parents’ time of arrival (see Challenge 1). Moreover, as shown in Appendix A.4.1, the response rates varied across treatments: a higher proportion of parents responded after observing the actor needing help than after observing a norm violation, which suggests that there might be some spillover effects of the scene on the survey response rate.<sup>9</sup> Importantly, of those who answered, the vast majority (88%) reported being the parent of the child, rather than a guardian, with no difference between conditions (see Table A5 in Appendix A.4.1).

---

<sup>8</sup>IRIS are infra-municipal areas comprising between 1800 and 5000 residents.

<sup>9</sup>For a study on spillover effects across contexts see [Galeotti \*et al.\* \(2021\)](#)

Table 1: Summary Statistics

	(1) ALL	(2) ALONE	(3) CHILD	(4) DIFF.
Male Target	0.35 (0.48)	0.36 (0.48)	0.34 (0.47)	0.02 (0.04)
Witness	0.15 (0.35)	0.12 (0.33)	0.17 (0.38)	-0.05* (0.03)
Male Actor	0.51 (0.50)	0.52 (0.50)	0.50 (0.50)	0.02 (0.04)
Rich IRIS	0.51 (0.50)	0.50 (0.50)	0.51 (0.50)	-0.01 (0.04)
Morning	0.52 (0.50)	0.46 (0.50)	0.58 (0.49)	-0.13*** (0.04)
Rain	0.08 (0.27)	0.09 (0.29)	0.07 (0.25)	0.02 (0.02)
Hot	0.28 (0.45)	0.31 (0.46)	0.26 (0.44)	0.05 (0.04)
Survey Response <sup>a</sup>	0.47 (0.50)	0.42 (0.49)	0.51 (0.50)	-0.09** (0.04)
Observations	601	301	300	601

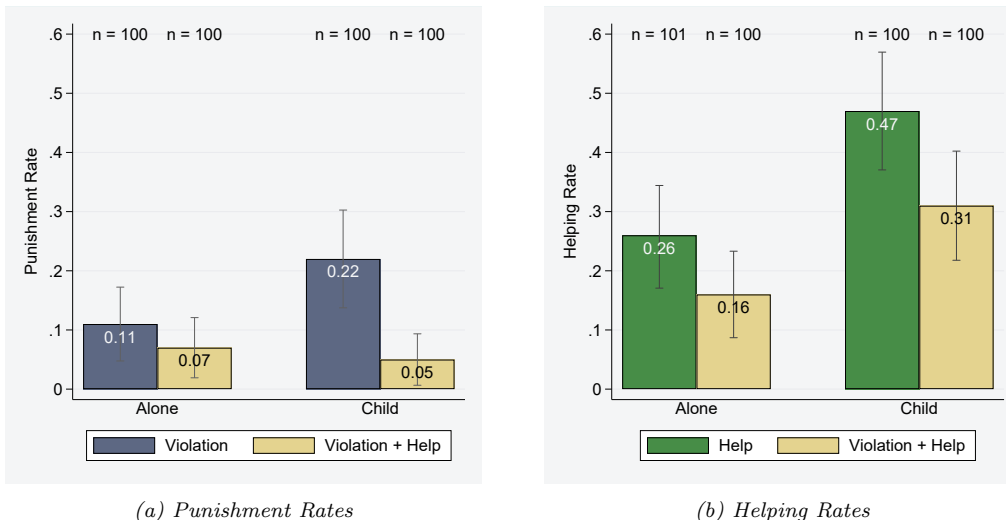
Notes: Columns (1)-(3) contain standard deviations in parentheses. Column (4) contains standard errors in parentheses. *a*: Parents who could not be reached are excluded. Hence, the statistics are computed based on 503, 251, 252 observations in All, Alone, and Child, respectively. All tests are two-sided t-tests on the equality of means. \*  $p < 0.10$  \*\*  $p < 0.05$  \*\*\*  $p < 0.01$ .

### 3.2 Main Results

The two panels of Figure 1 display parents' direct punishment rate and helping rate, respectively, by treatment (Violation or Help, and Violation + Help) and by condition (Alone or with Child). To test our conjectures and compare the conditions we employ  $\chi^2$ -tests. Moreover, Table 2 reports the estimates of two linear probability models for each of the dependent variables, Punishment and Helping. Models (1) and (3) estimate a simple model including a dummy for the Child condition, a dummy for the Violation + Help scene (VH), and an interaction term. To allow for observations at the same school to be correlated, standard errors are clustered at the school-level. Models (2) and (4) also include the variables in Table 1 (except Survey Response) as controls. We ignore the Help (Violation) scene when analyzing Punishment (Helping, respectively), thus analyzing roughly 400 observations.

The direct punishment rate in the Violation treatment is 22 percent in the Child condition and 11 percent in the Alone condition (compare the dark bars in Figure

Figure 1: Behavior of Parents, by Treatment and Condition



1a). We reject the null of no differences in punishment rates between conditions ( $\chi_1^2 = 4.39, p = 0.036$ ), showing evidence in line with Conjecture 1. This result is backed up by the linear probability model, as shown by the positive and significant coefficient on Child in the left panel of Table 2. This analysis supports our first result:

**Result 1 (Direct Punishment).** *Parents accompanying children are significantly more likely to engage in direct punishment following the violation of a social norm.*

This result is consistent with the willingness of parents to punish more when the child is around in order to teach the child about the importance of norm compliance and the risk of being sanctioned in case of a violation. We can reject four alternative explanations.

To begin with, we are not estimating a social image effect (*i.e.*, parents punishing or helping purely because they know that they are being observed). Indeed, the coefficient of the Witness dummy in Table 2 (that captures the pure presence of another adult observing) is negative and insignificant in both model (2) and (4): being observed by another adult does not increase the parents' likelihood of punishing the violator or their willingness to help. If we include an interaction term between the Child and Witness variables, this does not change the sign of the coefficient of the Witness dummy (we report this analysis in Appendix A.4.2). In addition, the interaction term is never significant: parents do not enforce more the norm when the child is present because they are observed by another adult. We also estimated models similar to those reported

Table 2: Determinants of Punishment Rate (Left) and Helping Rate (Right)

	PUNISHMENT		HELPING	
	(1)	(2)	(3)	(4)
Child	0.11** (0.05)	0.12** (0.04)	0.21*** (0.05)	0.22*** (0.06)
VH	-0.04 (0.03)	-0.04 (0.03)	-0.10** (0.05)	-0.10** (0.04)
Child × VH	-0.13*** (0.04)	-0.12*** (0.04)	-0.06 (0.07)	-0.07 (0.08)
Male Target		0.06** (0.03)		0.03 (0.04)
Male Actor		-0.06 (0.04)		-0.22*** (0.05)
Morning		-0.04 (0.03)		0.01 (0.04)
Witness		-0.04 (0.04)		-0.13 (0.08)
Rich area		0.02 (0.04)		0.01 (0.05)
Rain		0.01 (0.04)		-0.08 (0.07)
Hot		-0.04 (0.05)		0.06 (0.05)
Constant	0.11*** (0.03)	0.14*** (0.05)	0.26*** (0.04)	0.36*** (0.05)
Observations	400	399	401	400
Clusters	30	30	30	30
$R^2$	0.04	0.07	0.06	0.13
$F$	7.74	5.17	7.36	6.45
df	29	29	29	29

Notes: The table contains results from pooled Ordinary Least Squared regressions. The dependent variable is a binary variable for punishment (columns 1 and 2) or helping (columns 3 and 4). Standard errors in parentheses are clustered at the school level (30 clusters). One observation is dropped due to missing data on the target's gender. \*  $p < 0.10$  \*\*  $p < 0.05$  \*\*\*  $p < 0.01$ .

in Table 2 but treating the presence of a witness as if it was a treatment variable in the Alone condition. Consistently with the former analysis, we found that the Witness variable has a significant and negative effect on the likelihood of punishing and a negative but non-significant effect on the likelihood of helping (whereas the Child variable in Table 2 is significant and positive in both models). The 95% confidence intervals are  $[-0.198, -0.012]$  and  $[-0.475, 0.058]$  for Punishment and Helping, respectively. For comparison, for the Child dummy in the original regressions, these are  $[0.105, 0.338]$  and  $[0.026, 0.206]$  for Helping and Punishment, respectively. Overall, this analysis reveals that the presence of another adult has either no effect or the opposite effect compared



to the presence of a child: individuals feel less committed to punish norm violations when there are witnesses (in line with the “bystander effect”).

Second, we can also reject that higher punishment in the presence of the child is driven by the parents’ willingness to enhance their image in the eyes of their own child. The drop in direct punishment rates when comparing the Violation and Violation + Help treatments in the Child condition, as shown in Figure 1a and Table 2, invalidates this argument. Indeed, if parents punished more to show their child that they are strong, this should remain the case in the Violation + Help treatment.

Third, we can reject an explanation in terms of lower fear of retaliation in the presence of the child (*i.e.*, parents being more likely to punish because they believe that a violator is less inclined to retaliate in front of a child). Indeed, punishment decreases significantly and substantially between the Violation and Violation + Help treatments in the Child condition *only*, as can be seen in Figure 1a (Child:  $\chi_1^2 = 12.37, p < 0.001$ ; Alone:  $\chi_1^2 = 0.98, p = 0.323$ ). This shows that only parents with children decrease direct punishment when indirect punishment opportunities are available. This suggests that parents with children fear retaliation *more*.<sup>10</sup>

Finally, we are able to reject the alternative explanation that the perception of the social norm changes with the presence of the child. For example, parents may deem the violation a more serious transgression in the presence of the child, which might increase their tendency to punish. In order to assess this, we first conducted an online vignette study in Lyon with a different sample of parents to elicit social norms in the presence and absence of the child in scenarios close to those used in our experiment (using the design by Krupka and Weber, 2013, not pre-registered). We found no evidence that the social norm is different in the two conditions, as developed in Appendix A.5. Then, we conducted a second online study in which we presented to different participants one of three recorded videos featuring a person littering in a public space in front of a bystander. In one video the bystander was alone, while in the two other videos

---

<sup>10</sup>An additional analysis of the Violation treatment shows that only fathers punish significantly more in the presence of the child (see Table A7 in Appendix A.4.3). Assuming that fathers fear retaliation less overall, the presence of the child should decrease the gap in punishment rates between mothers and fathers if children would reduce the fear of retaliation. If anything, we find the opposite.

the bystander was accompanied, either by a child or by another adult. To elicit the injunctive social norms and personal norms, the participants were asked to guess the modal ratings of the littering violation and the subsequent verbal punishment by the bystander (not shown in the video). This study and its results are presented in detail in Appendix A.6. The second study confirms that parents in our field study did not punish more in the presence of a child because they considered littering a more serious violation or because they deemed direct punishment more appropriate in the presence of the child. Since we found again no significant differences in the norms across conditions, this means that individuals do not deem the littering norm violation more serious in the presence of a child than without.<sup>11</sup> Taken together, we thus adopt the teaching motive as the dominant explanation of our results.

Before we move to the analysis of indirect punishment, we note that helping rates in the Help treatments are significantly higher in the Child condition, as compared to the Alone condition (compare the dark bars in Figure 1b): 47 *vs.* 26 percent ( $\chi^2_1 = 9.82, p = 0.002$ ). This is confirmed by the positive and significant coefficients on Child in models (3) and (4) of Table 2, and it is consistent with the willingness to teach children compliance with the helping norm. Result 2 is thus in line with Conjecture 3.

**Result 2 (Helping).** *Parents accompanying children are significantly more likely to provide help to a stranger in need.*

In both conditions, parents decrease their willingness to help following a norm violation. The helping rate decreases by 16 percentage points in the Child condition and by 10 percentage points in the Alone condition. Still, this rate remains significantly higher in the Violation + Help treatment in the Child condition: 31 *vs.* 16 percent ( $\chi^2_1 = 6.26, p = 0.012$ ). Note that the helping rate in the Alone condition is similar to Balafoutas *et al.* (2014) and Balafoutas *et al.* (2016), where it was 18.6% and 13.0%, respectively. In order to test Conjecture 2 formally, we examine the interaction term VH

---

<sup>11</sup>Note that if we had found significant differences, it would have suggested that the stronger norm enforcement in the presence of the child in our field experiment might have been driven by the parents' willingness to teach the violator that littering is more inappropriate in the presence of a child. This would still have pointed on norm enforcement as a transmission mechanism, but the target might have been more the violator than the child.

$\times$  Child in our regressions. In models (3) and (4) of Table 2 the coefficient estimates on  $VH \times$  Child suggest that the helping rate does not decrease *more* in the Child condition as compared to the Alone condition, even though the negative coefficient estimate is in the predicted direction. In sum, we find no statistical evidence for Conjecture 2. This leads to Result 3.

**Result 3 (Indirect Punishment).** *Parents accompanying children are not significantly more likely to engage in indirect punishment.*

From Figure 1a, it becomes apparent that parents withhold help as a substitute for direct punishment, as exemplified by the drop in punishment once a helping opportunity is presented, but substantially more so in the Child condition. The drop in direct punishment from 22 percent in Violation to 5 percent in Violation + Help is significant at the 1% level for the Child condition ( $\chi_1^2 = 12.37, p < 0.001$ ). The drop from 11 to 7 percent in the Alone condition is insignificant ( $\chi_1^2 = 0.98, p = 0.323$ ). As mentioned earlier, this suggests that parents may fear retaliation more when they are with their child, as they seem more eager to resort to indirect, rather than direct, punishment. Hence, because of this likely higher fear of retaliation, our result on direct punishment may underestimate parents' true tendency to punish more in the presence of the child.

Our results are robust to using logit models instead of linear probability models (see Appendix A.4.4) and to a number of sample restrictions and alternative definitions, as summarised in Table A9 in Appendix A.4.5. Furthermore, we performed some exploratory (not pre-registered) regressions on heterogeneous treatment effects in Appendix A.4.6. We examine the effect of the number of children and their gender and age, the gender of the actor and parent, and the relative income in the school's IRIS area on helping and punishment rates. Interestingly, we find that parents punish more in the presence of children aged 6 to 8, while they help more in the presence of children aged below 6. This suggests that parents seek to first establish the helping norm, which may be easier to understand at a young age (Warneken and Tomasello, 2006), and teach through punishment at a later age. This observation also contributes to reject hurry as a reason underlying the differences in behaviour across conditions because hurry is likely

independent of the child’s age. Furthermore, we show that the timing of the scene does not affect Punishment or Helping rates, although they should if our results were driven by parents who are in a rush, and that there is no significant effect of the interaction between the time slot and the presence of the child (see Appendix A.4.7).

## 4 Discussion and Conclusion

Our field experiment provides evidence of parental involvement in childhood education on social norm compliance through the enforcement of such norms, and thereby contributes to our understanding of the intergenerational transmission of normative preferences from parents to children. We find that parents punish a norm violation directly more often in the presence of their child, while they do not punish more often through withholding help. Withholding help, even from a norm violator, violates another norm: helping others. Thus, parents may believe that its educative signal is unlikely to be grasped by children and prioritise teaching the helping norm. This may explain why the helping rate remains relatively high after a violation in presence of the child.

By focusing on normative preferences and by assessing parents’ *natural* enforcement behaviour, we complement studies showing the importance of the cultural transmission of preferences (Tabellini, 2008; Bisin and Verdier, 2001) and how preferences evolve during childhood. In line with the recent economic studies on parenting (Doepke and Zilibotti, 2017, 2019) and parental socialisation efforts (Ben-Ner *et al.*, 2017; Houser *et al.*, 2016; Cappelen *et al.*, 2020; Sutter and Untertrifaller, 2020), we show that parents exhibit more socially responsible behaviour in the presence of their child. A novel aspect of our study is showing that parents not only model desired behaviour, but also teach through punishing undesired behaviour by other parties. This illustrates that parents seek to build their children’s social skills not only through direct interventions on their behaviour but also by acting on their environment.

As explained above, we are able to reject alternative explanations related to the perception of the social norm, image concerns, or a lower fear of retaliation. However,

admittedly, parents may be more sensitive to their environment or moving more slowly when with their child(ren). Even though the window of opportunity may be slightly smaller for parents walking alone, our design ensures that the parent always crossed paths with the actor after (s)he littered or dropped the bag. We excluded observations with parents who did not observe the violation, while the dropping of the items was difficult to miss. Moreover, direct punishment does not take time, as expressing verbally one’s disagreement does not stop the parents in their walk. It could still be that parents have a different mindset when with their children, but we argue that this is part of our teaching explanation. It might be interesting to compare how these adults would behave if accompanied by another adult or a non-kin child instead of their child. A recent study ([Fornwagner and Hauser, 2022](#)) found, however, that individuals’ contributions to a voluntary climate action was mainly sensitive to observability by their own child, compared to a non-kin child or another adult.

Incidentally, we note that the teaching motive may change the nature of punishment of violations: such punishment may no longer be completely altruistic if both current benefits to oneself (transmission of values to one’s offspring) and future benefits to the child (accumulated social skills) are expected. Our results show that these expected benefits compensate the cost associated with the threat of retaliation. A higher fear of retaliation in the presence of the child is supported by the tendency of accompanied parents to substitute more direct for indirect punishment, which also suggests that our Violation treatment may underestimate the teaching motivation of parents in our study.

Our study also reveals the heterogeneity of preferences across parents. Not all parents use the observed norm violation as an opportunity to teach the importance of norm compliance to their children. Although we did not find differences across districts in the city, our study calls for further investigations of the heterogeneity in the inter-generational transmission of norms and parenting styles, by examining the individual and institutional determinants of the degree of involvement of parents in teaching normative preferences to their children.

Our study suggests that heterogeneity in teaching, and not necessarily only in parents’ preferences, may play a role in producing diversity in the formation of normative

preferences during childhood. It might be interesting to study whether parents' behaviour in our settings is correlated with what has been described as an authoritarian or as a permissive parenting style (Doepke and Zilibotti, 2019). Other interesting extensions would be to connect teaching and learning, to test whether children who have just been taught through example are more likely to exhibit stronger normative preferences, and whether parents and other adults' teaching make a difference in such endeavour.

**Authors' affiliations:** Thijs Brouwer: Tilburg University, Department of Economics. Fabio Galeotti: Centre National de la Recherche Scientifique (CNRS), GATE, UMR 5824. Marie Claire Villeval: Centre National de la Recherche Scientifique (CNRS), GATE, UMR 5824.

## References

- Alan, S., Baydar, N., Boneva, T., Crossley, T.F. and Ertac, S. (2017). ‘Transmission of risk preferences from mothers to daughters’, *Journal of Economic Behavior & Organization*, vol. 134, pp. 60–77.
- Andersen, S., Ertac, S., Gneezy, U., List, J.A. and Maximiano, S. (2013). ‘Gender, competitiveness, and socialization at a young age: evidence from a matrilineal and a patriarchal society’, *Review of Economics and Statistics*, vol. 95(4), pp. 1438–1443.
- Artavia-Mora, L., Bedi, A.S. and Rieger, M. (2017). ‘Intuitive help and punishment in the field’, *European Economic Review*, vol. 92, pp. 133–145.
- Attanasio, O., Cattan, S., Fitzsimons, E., Meghir, C. and Rubio-Codina, M. (2020). ‘Estimating the production function for human capital: results from a randomized controlled trial in Colombia’, *American Economic Review*, vol. 110(1), pp. 48–85.
- Balafoutas, L. and Nikiforakis, N. (2012). ‘Norm enforcement in the city: a natural field experiment’, *European Economic Review*, vol. 56(8), pp. 1773–1785.
- Balafoutas, L., Nikiforakis, N. and Rockenbach, B. (2014). ‘Direct and indirect punishment among strangers in the field’, *Proceedings of the National Academy of Sciences*, vol. 111(45), pp. 15924–15927.
- Balafoutas, L., Nikiforakis, N. and Rockenbach, B. (2016). ‘Altruistic punishment does not increase with the severity of norm violations in the field’, *Nature Communications*, vol. 7(13327), pp. 1–6.
- Bandura, A. (1965). ‘Vicarious processes: a case of no-trial learning’, in (L. Berkowitz, ed.), *Advances in Experimental Social Psychology*, pp. 1–55, vol. 2, Elsevier.
- Bandura, A. (1977). *Social learning theory*, Oxford: Prentice Hall.
- Bauer, M., Chytilová, J. and Pertold-Gebicka, B. (2014). ‘Parental background and other-regarding preferences in children’, *Experimental Economics*, vol. 17(1), pp. 24–46.
- Ben-Ner, A., List, J.A., Putterman, L. and Samek, A. (2017). ‘Learned generosity? An artefactual field experiment with parents and their children’, *Journal of Economic Behavior & Organization*, vol. 143, pp. 28–44.
- Benenson, J.F., Pascoe, J. and Radmore, N. (2007). ‘Children’s altruistic behavior in the dictator game’, *Evolution and Human Behavior*, vol. 28(3), pp. 168–175.
- Berger, J. and Hevenstone, D. (2016). ‘Norm enforcement in the city revisited: an international field experiment of altruistic punishment, norm maintenance, and broken windows’, *Rationality and Society*, vol. 28(3), pp. 299–319.
- Bisin, A. and Verdier, T. (2001). ‘The economics of cultural transmission and the dynamics of preferences’, *Journal of Economic Theory*, vol. 97(2), pp. 298–319.
- Bowles, S. and Gintis, H. (1998). ‘The moral economy as community: Structured populations and the evolution of prosocial norms’, *Evolution and Human Behavior*, vol. 19(1), pp. 3–25.

- Brenøe, A.A. and Epper, T. (2019). ‘Parenting values moderate the intergenerational transmission of time preferences’, Working Paper n. 333, Department of Economics, University of Zurich.
- Brouwer, T., Galeotti, F. and Villeval, M.C. (2022). ‘Teaching norms: Direct evidence of parental transmission - replication package’, *The Economic Journal - Data deposited at Zenodo*, doi:<https://doi.org/10.5281/zenodo.6976150>.
- Cappelen, A.W., List, J.A., Samek, A. and Tungodden, B. (2020). ‘The effect of early education on social preferences’, *Journal of Political Economy*, vol. 128(7), pp. 2739–2758.
- Casari, M. (2012). ‘Weak reciprocity alone cannot explain peer punishment’, *Behavioral and Brain Sciences*, vol. 35(1), pp. 21–22.
- Chowdhury, S., Sutter, M. and Zimmermann, K.F. (2022). ‘Economic preferences across generations and family clusters: A large-scale experiment’, *Journal of Political Economy*.
- Cipriani, M., Giuliano, P. and Jeanne, O. (2013). ‘Like mother like son? Experimental evidence on the transmission of values from parents to children’, *Journal of Economic Behavior & Organization*, vol. 90, pp. 100–111.
- Coleman, J.S. (1994). *Foundations of social theory*, Cambridge MA: Harvard University Press.
- Cunha, F. and Heckman, J.J. (2010). ‘Investing in our young people’, NBER Working Paper n. 16201, National Bureau of Economic Research.
- Darley, J.M. and Batson, C.D. (1973). ‘From jerusalem to jericho: A study of situational and dispositional variables in helping behavior’, *Journal of Personality and Social Psychology*, vol. 27(1), pp. 100–108.
- Doepke, M. and Zilibotti, F. (2017). ‘Parenting with style: altruism and paternalism in intergenerational preference transmission’, *Econometrica*, vol. 85(5), pp. 1331–1371.
- Doepke, M. and Zilibotti, F. (2019). *Love, Money and Parenting*, Princeton University Press.
- Dohmen, T., Falk, A., Huffman, D. and Sunde, U. (2012). ‘The intergenerational transmission of risk and trust attitude’, *Review of Economic Studies*, vol. 79(2), pp. 645–677.
- Falk, A., Becker, A., Dohmen, T., Enke, B., Huffman, D. and Sunde, U. (2018). ‘Global evidence on economic preferences’, *The Quarterly Journal of Economics*, vol. 133(4), pp. 1645–1692.
- Falk, A. and Kosse, F. (2016). ‘Early childhood environment, breastfeeding and the formation of preferences’, SOEPpaper n. 882, DIW Berlin.
- Falk, A., Kosse, F., Pinger, P., Schildberg-Hörisch, H. and Deckers, T. (2021). ‘Socio-economic status and inequalities in children’s iq and economic preferences’, *Journal of Political Economy*, vol. 129(9), pp. 2504–2545.



- Fornwagner, H. and Hauser, O.P. (2022). ‘Climate action for (my) children’, *Environmental and Resource Economics*, vol. 81, pp. 95–130.
- Galeotti, F., Maggian, V. and Villeval, M.C. (2021). ‘Fraud Deterrence Institutions Reduce Intrinsic Honesty’, *The Economic Journal*, vol. 131(638), pp. 2508–2528.
- Gneezy, U., Leonard, K.L. and List, J.A. (2009). ‘Gender differences in competition: evidence from a matrilineal and a patriarchal society’, *Econometrica*, vol. 77(5), pp. 1637–1664.
- Heckman, J. and Rubinstein, Y. (2001). ‘The importance of noncognitive skills: Lessons from the ged testing program’, *American Economic Review*, vol. 91(2), pp. 145–149.
- Heckman, J., Stixrud, J. and Urzua, S. (2006). ‘The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior’, *Journal of Labor Economics*, vol. 24(3), pp. 411–482.
- Heckman, J.J. and Mosso, S. (2014). ‘The economics of human development and social mobility’, *Annual Review of Economics*, vol. 6(1), pp. 689–733.
- Houser, D., List, J.A., Piovesan, M., Samek, A. and Winter, J. (2016). ‘Dishonesty: from parents to children’, *European Economic Review*, vol. 82, pp. 242–254.
- Janssen, M.A. and Bushman, C. (2008). ‘Evolution of cooperation and altruistic punishment when retaliation is possible’, *Journal of Theoretical Biology*, vol. 254(3), pp. 541–545.
- Khadjavi, M. and Nicklisch, A. (2018). ‘Parents’ ambitions and children’s competitiveness’, *Journal of Economic Psychology*, vol. 67, pp. 87–102.
- Kosse, F., Deckers, T., Pinger, P., Schildberg-Hörisch, H. and Falk, A. (2020). ‘The formation of prosociality: causal evidence on the role of social environment’, *Journal of Political Economy*, vol. 128(2), pp. 434–467.
- Kosse, F. and Pfeiffer, F. (2012). ‘Impatience among preschool children and their mothers’, *Economics Letters*, vol. 115(3), pp. 493–495.
- Krupka, E.L. and Weber, R.A. (2013). ‘Identifying social norms using coordination games: why does dictator game sharing vary?’, *Journal of the European Economic Association*, vol. 11(3), pp. 495–524.
- Lergetporer, P., Angerer, S., Glätzle-Rützler, D. and Sutter, M. (2014). ‘Third-party punishment increases cooperation in children through (misaligned) expectations and conditional cooperation’, *Proceedings of the National Academy of Sciences*, vol. 111(19), pp. 6916–6921.
- Lindbeck, A. and Nyberg, S. (2006). ‘Raising children to work hard: altruism, work norms, and social insurance’, *The Quarterly Journal of Economics*, vol. 121, pp. 1473–1503.
- Maccoby, E.E. (1992). ‘The role of parents in the socialization of children: an historical overview’, *Developmental Psychology*, vol. 28(6), pp. 1006–1017.

- Malouff, J., Thorsteinsson, E., Schutte, N. and Rooke, S.E. (2009). ‘Effects of vicarious punishment: A meta-analysis’, *Journal of General Psychology*, vol. 136(3), pp. 271–286.
- McCord, J. and McCord, W. (1958). ‘The effects of parental role model on criminality’, *Journal of Social Issues*, vol. 14(3), pp. 66–75.
- Nikiforakis, N. (2008). ‘Punishment and counter-punishment in public good games: can we really govern ourselves?’, *Journal of Public Economics*, vol. 92(1-2), pp. 91–112.
- Ostrom, E. (2000). ‘Collective action and the evolution of social norms’, *Journal of Economic Perspectives*, vol. 14(3), pp. 137–158.
- Piaget, J. (1932). *The moral judgement of the child*, Routledge and Kegan Paul.
- Sugden, R. (1986). *The economics of rights, cooperation and welfare*, Oxford: Basil Blackwell.
- Sutter, M., Angerer, S., Glätzle-Rützler, D. and Lergetporer, P. (2018). ‘Language group differences in time preferences: evidence from primary school children in a bilingual city’, *European Economic Review*, vol. 106, pp. 21–34.
- Sutter, M. and Untertrifaller, A. (2020). ‘Children’s heterogeneity in cooperation and parental background: an experimental study’, *Journal of Economic Behavior & Organization*, vol. 171, pp. 286–296.
- Sutter, M., Zoller, C. and Glätzle-Rützler, D. (2019). ‘Economic behavior of children and adolescents – a first survey of experimental economics results’, *European Economic Review*, vol. 111, pp. 98–121.
- Tabellini, G. (2008). ‘The scope of cooperation: values and incentives’, *The Quarterly Journal of Economics*, vol. 123(3), pp. 905–950.
- Warneken, F. and Tomasello, M. (2006). ‘Altruistic helping in human infants and young chimpanzees’, *Science*, vol. 311(5765), pp. 1248–1249.
- Young, H.P. (2008). ‘Social norms’, in (S. N. Durlauf and E. B. Lawrence, eds.), *The New Palgrave Dictionary of Economics*, Palgrave Macmillan.
- Zumbuehl, M., Dohmen, T. and Pfann, G. (2020). ‘Parental Involvement and the Inter-generational Transmission of Economic Preferences, Attitudes and Personality Traits’, *The Economic Journal*, vol. 131(638), pp. 2642–2670.