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Institutional Transmission of Social Preferences

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Abstract

Using incentivized experiments with 2854 primary school students and 238 teachers, we study how teachers' social preferences shape students' own prosociality. Leveraging within-school variation in teachers' social preferences, we show that students taught by more prosocial teachers give more in a dictator game, contribute more in a public goods game, and report lower outcomes in a die-reporting task, even after controlling for students' cognitive skills, personality traits and socio-economic background. The relationship is larger among older students, consistent with teachers' influence accumulating through continued interaction, while peer dynamics and students' beliefs emerge as potential channels for the transmission of social preferences. Our findings highlight the role of teachers as key institutional agents of prosocial development.

JEL Codes: D64, D9, I21, J24.

Keywords: Social Preferences, Preference Formation, Primary Education, Teacher Effects.

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"The teacher is engaged, not simply in the training of individuals, but in the formation of the proper social life."

— Dewey (1897, p. 80)

1 Introduction

Social preferences – such as fairness, generosity, and honesty – are fundamental to economic behavior, influencing interactions in markets and organizations, the correct functioning of institutions and, more broadly, economic development (Algan and Cahuc (2013); Bloom, Sadun, and Van Reenen (2012); Djankov, Glaeser, La Porta, et al. (2003); Fehr, Powell, and Wilkening (2021); Fountain (1998); Glaeser, Sacerdote, and Scheinkman (1996); Guiso, Sapienza, and Zingales (2009); Knack and Keefer (1997)). Beyond their societal importance, these preferences are also key predictors of individual outcomes, including academic achievement, labor market success and political participation (Algan, Beasley, Cote, et al. (2022); Cantoni, Heizlsperger, Yang, et al. (2022); Carpenter and Seki (2011); Deming (2017); Dohmen, Falk, Huffman, and Sunde (2009); Dube, Giuliano, and Leonard (2019); Kosse and Tincani (2020)).[1]

Despite their significance, relatively little is known about the developmental origins of social preferences. Existing work documents that parents' preferences predict those of their children (e.g., Ben-Ner, List, Putterman, and Samek (2017); Chowdhury, Sutter, and Zimmermann (2022); Dohmen, Falk, Huffman, and Sunde (2012)). Yet, as long recognized by educational philosophers (e.g., Dewey (1930)), schools are also key social institutions where norms, values and cooperative behaviors can be shaped. Economic models of cultural transmission similarly emphasize that institutional environments and role models – such as teachers – play an important role in the formation of social preferences (Bowles (1998); Bisin and Verdier (2001); Guiso, Sapienza, and Zingales (2011); Tabellini (2008)). Consistent with this perspective, children's prosociality has been shown to respond to changes in their social environment (Alan, Baysan, Gumren, and Kubilay (2021), Bettinger and Slonim (2006), Cappelen, List, Samek, and Tungodden (2020), Kosse, Deckers, Pinger, et al. (2020)). Similarly, teachers have been found to shape important non-cognitive outcomes, including disciplinary behavior and school-based arrests (Jackson (2018); Jackson, Porter, Easton, et al. (2020)). Recent work argues that schools should be understood not only as producers of cognitive skills, but also as social environments that shape trust, cooperation, and the collective norms underlying social cohesion, while emphasizing how little is known about the specific school actors and attributes through which this process occurs (Alan, 2026).

In this paper, we make progress on this question by studying the transmission of social preferences from teachers to students.

A major challenge in studying this question is the availability of data linking students' and teachers' preferences. To address this problem, we elicit social preferences using incentivized ex-

[1] See Fehr and Charness (2025) for a recent review on the social and economic implications of social preferences.

periments with 2854 primary school students and 238 teachers in 42 primary schools in Campania, Italy. This is a particularly interesting setting to study social preferences as it exhibits relatively low levels of social capital, cooperation and trust compared to other Italian regions and advanced economies (Bigoni, Bortolotti, Casari, and Gambetta (2019); Durante, Mastrorocco, Minale, and Snyder (2025); OECD (2020); Putnam, Leonardi, and Nanetti (1993)), reflecting long-standing historical and regional legacies (Guiso, Sapienza, and Zingales (2016)). Understanding how social preferences are formed is therefore especially consequential in this context, where stronger trust and cooperation could generate meaningful social benefits. Moreover, teachers may be particularly influential in this setting: they typically remain with the same class throughout primary school (from first to fifth grade) and therefore interact with the same children for several years during a period when social and cognitive traits are especially malleable (Cunha and Heckman (2007); Fehr, Bernhard, and Rockenbach (2008)).

Students (aged 7 to 10) and their teachers completed the *same set* of incentivized games, carefully adapted to participants' age and comprehension levels. The tasks included a dictator game, a public goods game, and a one-shot prisoner's dilemma. Students also completed a version of the die-reporting game designed by Fischbacher and Föllmi-Heusi (2013). These are *paradigmatic economic experiments* (Fehr and Charness (2025)), widely used to elicit social preferences in both adults (e.g., Andreoni and Miller (2002); Fehr and Gächter (2000); Fischbacher and Föllmi-Heusi (2013); Krupka and Weber (2013); Yuan, Spadaro, Jin, et al. (2022)) and children (e.g., Benenson, Pascoe, and Radmore (2007); Fehr, Bernhard, and Rockenbach (2008); Harbaugh and Krause (2000); Samek, Cowell, Cappelen, et al. (2020)). All the games involved monetary payments to the participants: teachers were paid with Amazon vouchers, and students in tokens exchanged for stationery and stickers. Following Kling, Liebman, and Katz (2007), we combine these measures in an index of prosociality that captures information from all tasks while accounting for measurement error in individual measures, but also report results for each individual measure. In addition, we collected a rich set of student-level controls, including measures of cognitive skills and personality traits.

To identify the effect of teachers' preferences on students, we exploit the *as-good-as-random* assignment of students to teachers with varying levels of social preferences within a school. Specifically, we compare students in the same school who are assigned to different classes led by more or less prosocial teachers, in an approach similar to Carlana (2019).[2] This design relies on the assumption that teachers and students are not systematically matched within schools based on their social preferences, for example through more prosocial parents sorting their children into classrooms taught by more prosocial teachers. Two institutional features support this assumption. Classes are formed upon school entry according to balancing criteria established by the school council, after which principals allocate teachers to classes based on qualifications, continuity, and organizational needs rather than parental requests. Consistent with this institutional framework, we show that students' demographic characteristics, family backgrounds, cognitive skills, and personality traits are not systematically associated with the social preferences of their assigned teachers.

[2]Carlana (2019) uses a design close to ours in the setting of Italian middle schools to study the effect of teachers' gender stereotypes on students' academic performance.

Teachers' social preferences strongly predict those of their students. A one-standard-deviation (SD) increase in teachers' prosociality is associated with a 0.09 SD increase in students' social preferences, an effect that remains remarkably stable across specifications, controlling for students' demographics, cognitive skills, personality traits, and teachers' experience and education. When we examine each individual experimental task in isolation we find similar results. Students taught by more generous teachers in the dictator game also give more themselves, roughly a 5% increase in average giving. These choices translate into more equal outcomes, suggesting that exposure to prosocial teachers not only raises generosity but also reduces inequality in resource allocation. Similarly, students with more cooperative teachers in the public goods game are 9 to 12 percentage points more likely to contribute. Teachers' prosociality also translates into greater honesty among students. In the die-reporting task, students of more prosocial teachers report lower (and likely more truthful) outcomes, closing about 10% of the gap between fair and observed reports. We find no systematic relationship between teachers' and students' behavior in the prisoner's dilemma.

We further show that the relationship between teachers' and students' social preferences becomes stronger with students' age, consistent with the influence of teachers accumulating through continued exposure. Among the youngest students in our sample, those assigned to teachers with higher and lower prosociality display similar levels of social preferences, lending credibility to our design by suggesting that initial teacher assignment is not systematically related to students' baseline traits. Clear differences emerge among older students: by age nine, students taught by more prosocial teachers score about 0.15 SD higher, and by age ten the gap reaches 0.36 SD. These dynamics are consistent with children internalizing social preferences through longer-term socialization processes within the classroom.

We next explore the channels underlying the transmission of social preferences. We consider two main mechanisms that could link teachers' and students' prosociality. First, teachers may shape the social environment of the classroom, influencing how peers interact and thus amplifying prosocial behavior through a *social multiplier* effect within the group (Glaeser, Sacerdote, and Scheinkman (1996); Glaeser, Sacerdote, and Scheinkman (2003); Manski (1993)). Second, teachers may shape students' beliefs about the behavior of others, fostering more optimistic expectations about peers' fairness, honesty, and cooperation. Consistent with both mechanisms, we find that teachers' prosociality predicts higher average prosociality among peers and more positive beliefs about others' behavior. A non-causal mediation analysis suggests that roughly one-third of the overall effect of teachers operates through peer dynamics and 10% through students' beliefs. Relating these mechanisms to the process of social preference formation offers broader insights into how prosocial motives develop during childhood and the channels through which institutional environments and actors – such as schools and teachers – can foster them.

This paper makes three main contributions. First, we advance the literature on the developmental origins of social preferences, which has focused on the transmission from parents to their children (e.g., Chowdhury, Sutter, and Zimmermann (2022); Dohmen, Falk, Huffman, and Sunde (2012)), by documenting transmission through a central social institution: the school. Prior work shows that

educational institutions can transmit values and beliefs through curricula and institutional reforms (e.g., Bandiera, Mohnen, Rasul, and Viarengo (2019); Cantoni, Chen, Yang, et al. (2017)), while recent research emphasizes the role of schools in shaping the trust, cooperation, and collective norms underlying social cohesion and identifies the specific actors and attributes driving this process as an important open question (Alan, 2026). Building on recent work on social environments (Kosse, Deckers, Pinger, et al. (2020)) and teaching styles (Algan, Cahuc, and Shleifer (2013)), we make progress on this question by providing, to the best of our knowledge, the first empirical evidence that teachers' own social preferences are systematically transmitted to their students.

Second, we show that social preferences remain malleable during the primary-school years, a period identified as particularly receptive to interventions (e.g., Alan, Baysan, Gumren, and Kubilay (2021); Cappelen, List, Samek, and Tungodden (2020); Cunha and Heckman (2007)), indicating that policies and programs targeting teachers and classroom environments have the potential to generate lasting effects on children's prosociality. The increasingly strong relationship between teachers' and students' social preferences as students age, a pattern consistent with cumulative exposure over time, further highlights the importance of sustained social interactions in the formation of prosociality during childhood.

Third, we contribute to a growing literature showing that teachers influence dimensions of children's development beyond academic achievement, including non-cognitive skills and prosocial behavior (e.g., Agostinelli, Saharkhiz, and Wiswall (2025); Jackson (2018); Jackson, Porter, Easton, et al. (2020)). Yet which teacher characteristics drive these effects remains unknown, leaving the sources of teacher influence largely a "black box" (Alan (2026)). We address this gap by directly measuring teachers' own social preferences and showing that they shape students' generosity, cooperation, and honesty. Our findings complement evidence that teachers' attitudes influence students' social relationships and classroom environments (Alan, Duysak, Kubilay, and Mumcu (2023)). By contrast, we find no systematic relationship between teachers' social preferences and students' cognitive ability or personality traits. This contrast suggests that teachers' social preferences matter specifically for prosocial development rather than simply serving as a proxy for general teacher quality.

The remainder of the paper is organized as follows. Section 2 describes the context, data, and experimental procedures used to elicit social preferences. Section 3 presents our empirical design, and Section 4 reports the results. Section 5 concludes.

2 Context and Data

2.1 Institutional Background

In Italy, primary school lasts five years, from age 6 to age 10. Children generally attend the school located in their residential catchment area (*circoscrizione scolastica*), although families may apply to any school within their municipality. In practice, however, priority is given to children residing in the school's catchment area.

Within a school, students are assigned to classes at the beginning of the first grade and typically remain with the same peers until the end of primary school. The general criteria for class formation are set by Italian law, while the specific rules are defined by the school council in a formal document that must be published on the school's official notice board or website.[3] These criteria are binding for the school principal and include balancing students across classes by gender, disability status, socioeconomic background, and, when available, information provided by kindergarten teachers about children's skills and development, while also considering any special needs or logistical factors.

Teachers' assignment to schools is centralized and set by the Italian Ministry of Education based on seniority ranking and available positions within each province. As teachers gain experience and seniority, they transfer toward their most preferred schools, often leaving those characterized by more disadvantaged student populations or more challenging social environments (Barbieri, Rossetti, and Sestito (2011)). Once assigned to a school, teachers are allocated to specific classes by the school principal, taking into account qualifications, continuity, and organizational needs. Each class is typically led by two main classroom teachers who teach most subjects (with one typically teaching Italian, History and Geography, and the other teaching Mathematics and Science).[4] Once assigned to a class, teachers generally follow the same group of students from first through fifth grade. This continuity makes initial teacher assignment particularly consequential, as teachers have considerable scope to influence students' academic trajectories and broader developmental outcomes over the five years of primary school.

To examine how this general assignment framework operates in our setting, we reviewed the available regulations and planning documents of the schools in our sample. These documents commonly emphasize maintaining balance across classes and ensuring heterogeneity within each class.

2.2 Context

We conducted incentivized experiments with students and teachers in forty-two primary schools in the Southern Italian region of Campania. Schools were contacted directly by the research team and agreed to participate on a voluntary basis. Within participating schools, we aimed to survey all students in grades 2 through 5 (excluding grade 1 students who were considered too young to comprehend the full set of experimental tasks), and all their teachers. In practice, we successfully surveyed approximately 70% of enrolled students and 90% of teachers.

Campania is a particularly interesting setting for studying social preferences because Italy ranks relatively low on various measures of social capital, including trust, compared to other advanced economies (OECD (2020)). Within Italy, Campania is among the regions with the lowest social capital, a pattern that has been documented in previous studies (Bigoni, Bortolotti, Casari, and Gambetta (2019); Durante, Mastrorocco, Minale, and Snyder (2025); Putnam, Leonardi, and Nanetti (1993)) and linked to historical legacies and regional experiences (Guiso, Sapienza, and Zingales (2016)). Understanding how social preferences are formed might therefore be particularly

[3]The main regulatory framework is the *Testo Unico delle disposizioni legislative vigenti in materia di istruzione, relative alle scuole di ogni ordine e grado* (D.Lgs. 297/1994) and subsequent regulations.

[4]For specific subjects such as art, music, or foreign languages, specialist teachers rotate across classes.

consequential in this context, as stronger trust and cooperation could generate meaningful social benefits.

2.3 Data and Experimental Procedures

We use a series of incentivized experiments to measure social preferences among both students and their teachers, and complement them with detailed background information on students' cognitive skills, personality traits, and socio-economic characteristics. We first describe the experimental procedures and measures, and then provide details on the assessment of students' cognitive and non-cognitive traits and on the characteristics of the study sample.

2.3.1 Measurement of Social Preferences

All experiments were conducted in the 2022–2023 school year on school premises under standardized conditions, following protocols carefully adapted to the age and comprehension levels of the participants. Trained experimenters visited each school. Students completed the tasks in class-group sessions without their teacher present: each student sat at an individual desk, entered choices privately on a tablet, and was not allowed to talk to classmates, while the experimenters read the instructions aloud and assisted individual students when needed. The teachers completed the tasks in one-on-one sessions with an experimenter, also on a tablet. Therefore, every participant made each decision individually and privately. To ensure the independence of responses and to prevent any potential influence or observation effects, students and teachers participated in separate testing sessions, held at different points during the school year: student sessions took place between December 2022 and April 2023, while teacher sessions were held in May and June 2023. We tested students first to avoid the possibility that teachers would play the games themselves and then discuss them with students before the students made their choices.

We used four incentivized experimental measures of social preferences: a dictator game, a public goods game, a one-shot prisoner's dilemma, and a die-reporting game. All four tasks were administered to students. The dictator game, public goods game, and prisoner's dilemma were also administered to teachers, whereas the die-reporting game was omitted from the teacher protocol because of budget constraints. These are *paradigmatic economic experiments* (Fehr and Charness (2025)), widely used to elicit social preferences in both adults (e.g., Andreoni and Miller (2002); Fehr and Gächter (2000); Fischbacher and Föllmi-Heusi (2013); Krupka and Weber (2013); Yuan, Spadaro, Jin, et al. (2022)) and children (e.g., Benenson, Pascoe, and Radmore (2007); Fehr, Bernhard, and Rockenbach (2008); Harbaugh and Krause (2000); Samek, Cowell, Cappelen, et al. (2020)). As emphasized by Alan (2026), these games are particularly well suited to school-age children: children generally understand them easily, and their incentive-compatible design helps mitigate concerns about overly compliant responses. Table 1 provides an overview of the choices participants could make in each task.

The design of each measure was the same for students and teachers, with one difference: students were paid in tokens, which could later be exchanged for stationery items and stickers, while teachers

were paid with Amazon vouchers. For ease of exposition, we refer to all payments in terms of tokens. Students and teachers received their payments at school days after the experiments. Each child's payment was not observed by their teacher, as children's rewards were distributed privately outside the classroom.

Dictator Game. Our first experiment is a dictator game, which measures key dimensions of prosociality including altruism (Andreoni and Miller (2002)), fairness (Fehr and Schmidt (1999), Bolton and Ockenfels (2000)), and compliance with social norms (Bardsley (2008), Eckel, Hoover, Krupka, et al. (2023); Krupka and Weber (2013); List (2007)). Participants received an endowment of six tokens and decided how to split it between themselves and an anonymous receiver, described as a student (or teacher) from any other participating school. At the end of the session, participants kept any uncommitted token and were randomly selected to receive the allocation chosen by one of the "dictators". Importantly, they were not informed beforehand that they may also receive tokens from another participant, ensuring that decisions reflect genuine giving rather than strategic anticipation. Following their choice, students were also asked a question to elicit their beliefs about peers' behavior: "Now I'd like you to think about how many children in this class chose to divide the coins like this: 6 for themselves and 0 for the other player". Participants received an additional token for correctly guessing the answer to this question.

Public Goods Game. Our second measure of social preferences is a threshold public goods game. Public goods games have been extensively used to study cooperative behavior and are closely linked to trust and conditional cooperation (e.g., Anderson, Mellor, and Milyo (2004); Fehr and Gächter (2000); Gächter, Herrmann, and Thöni (2004); Karlan (2005); Rege and Telle (2004)).[5] Students were told they would play the game with five other randomly assigned students from the study schools, while teachers were told they would play the game with five other randomly assigned teachers. Each participant received an initial endowment of two tokens and decided whether to contribute both tokens or to keep them. If at least four of the six group members contributed, every group member received four tokens, and those who had not contributed also kept their two tokens; if fewer than four group members contributed, contributors received nothing and non-contributors kept their two tokens.[6] Contributing, therefore, maximizes a participant's own payoff only when exactly three of the other five group members contribute: if four or more others contribute, keeping the endowment yields six tokens rather than four, and if two or fewer contribute, contributing yields nothing. All possible contribution scenarios (0-6 contributors) and the relative payoffs were described to the participants to ensure comprehension. After their choice, students reported their beliefs about how many of their classmates had contributed (none, a few, half or a majority). A correct answer to this question earned one additional token.

[5] Choices in the public goods game correlate with survey measures of trust (Thöni, Tyran, and Wengström (2012)).

[6] Students were presented with a slightly modified, child-friendly framing of the task: if four or more students placed their tokens in a "magic box", the box would double the number of tokens for everyone, including those who did not contribute; otherwise, the box would disappear along with the tokens inside.

Prisoner's Dilemma. Our third measure of social preferences is a one-shot prisoner's dilemma. This game is widely used to study cooperation (Sheldon, Sheldon, and Osbaldiston (2000); Yuan, Spadaro, Jin, et al. (2022)) and has been shown to correlate with other measures of prosociality, such as giving in dictator games (Capraro, Jordan, and Rand (2014)). Participants were randomly paired with one other participant in the relevant subject pool from any study school. Students received an endowment of two tokens and teachers an endowment of three. Each participant decided whether to keep the whole endowment or to send it to their partner; in this case the experimenter doubled the amount sent. If both participants sent, each ended up with four tokens (six for teachers); if only one sent, the sender received nothing and the partner ended up with six tokens (nine for teachers); if neither sent, each kept two tokens (three for teachers). The two versions are therefore the same game up to scale, with teachers' payoffs equal to 1.5 times those of students. The experimenter illustrated all four contribution scenarios and the resulting payoffs to ensure comprehension. In this game, keeping the endowment yields a higher own payoff regardless of what the partner does. We therefore interpret sending as evidence of other-regarding motives, while recognizing that conditional cooperators are more willing to send when they expect their partner to do the same.

Die-reporting Game. We measure honesty using a version of the die-reporting task developed by Fischbacher and Föllmi-Heusi (2013).[7] This measure was administered only to students. Each student rolled a die once at their classroom desk, without the experimenter seeing the outcome of the roll. They then reported the outcome on the tablet, and placed the die in a cloth bag. Students received one token per point reported, for example reporting a six earned six tokens. Because only the student observed the true outcome of the roll, cheating cannot be detected for any individual. It can, however, be inferred at the group level: under truthful reporting, individual reports are uniformly distributed between one and six, and the average report of the group is 3.5. Mean reports systematically above this benchmark provide evidence of upward misreporting. In the analysis, we use individual reports in two ways. First, we analyze reported die outcomes at the individual level. Second, we assess average reports at the class level and consider whether these exceed the 3.5 benchmark, which provides evidence of systematic cheating within the class-group.

Prosociality Index. We combine behaviors across the different games into a single index of prosociality. For students, the index includes behavior in the dictator game, the public goods game, the prisoner's dilemma, and the die-reporting task. For teachers, it includes the three tasks administered to them: the dictator game, the public goods game, and the prisoner's dilemma. Following Kling, Liebman, and Katz (2007), we first rescale each measure so that higher values indicate more prosocial behavior and standardize it to have mean zero and unit variance within the relevant sample. We then compute the index as the simple average of these standardized measures and re-standardize it to have mean zero and unit standard deviation. As a robustness check, we

[7] Behavior in this task tracks rule violations outside the laboratory: across 23 countries, Gächter and Schulz (2016) find that participants from countries with a higher prevalence of corruption, tax evasion and political fraud make more dishonest reports.

Table 1: Measurement of Social Preferences

Experimental measure	Players	Set of actions
Dictator Game	2 players per group: Sender and Receiver	Give 6 tokens and keep 0 Give 5 tokens and keep 1 Give 4 tokens and keep 2 Give 3 tokens and keep 3 Give 2 tokens and keep 4 Give 1 token and keep 5 Give 0 tokens and keep 6
Public Goods Game	6 players per group	Contribute two tokens Do not contribute
Prisoner's Dilemma	2 players per group	Give 2 tokens to the opponent Keep 2 tokens
Die-reporting Game	1 player	State outcome of die roll is 6 State outcome of die roll is 5 State outcome of die roll is 4 State outcome of die roll is 3 State outcome of die roll is 2 State outcome of die roll is 1

also build a weighted standardized index following Anderson (2008). The same aggregation is applied separately to students and teachers. This approach improves statistical power and yields a comprehensive summary measure of prosociality. We show results both for this summary index and for each individual experimental task. As a robustness check, we also construct a symmetric student index based only on the three tasks administered to both students and teachers.

2.3.2 Child Cognitive Skills and Personality Traits

We collected data on children's cognitive skills and personality traits using the Raven's Progressive Matrices (RPM; Raven (2000)) and the Big Five questionnaire for children aged 6-11. RPM are a commonly used cognitive assessment of fluid intelligence, and measure an individual's ability to think logically, identify patterns, and solve novel problems. The Big Five categorizes personality into five key traits – neuroticism, extroversion, openness, agreeableness, and conscientiousness – and is widely used in psychological and economic research (Almlund, Duckworth, Heckman, and Kautz (2011); Costa and McCrae (1992); Digman (1990)).

2.4 Sample Characteristics and Descriptive Statistics

Table 2 summarizes the characteristics of the study sample. Students are on average 8.3 years old, and 51% are boys. Ninety percent of students are Italian, and about 5% have a registered

Table 2: Sample Characteristics

	Mean	S.D.
Panel A: Students' characteristics		
Age	8.33	0.95
Gender (male)	0.51	0.50
Italian	0.90	0.30
Disability	0.05	0.21
Parents' education (secondary or more)*	0.64	0.48
Class size	15.52	4.53
Panel B: Teachers' characteristics		
Gender (female)	0.96	0.19
Education (high-school)†	0.66	0.47
Experience	18.97	4.29
Number of students	2854	
Number of teachers	238	
Number of classes	186	
Number of schools	42	

Notes: This table presents the summary statistics for the sample. Panel A reports students' characteristics, Panel B reports teachers' characteristics. * information on parents' education comes from administrative records provided directly by the schools and is sometimes missing. † Education is a dummy that takes a value of one if the teacher has a high school degree, and zero if she has a higher level of education (e.g., a Bachelor or a Master degree).

disability. Sixty-four percent of students' parents have completed at least a high school degree.[8] These students are taught by teachers who are for the vast majority women (96%). About 66% have a high school degree, while the remaining 34% hold a Bachelor's or Master's degree. They are also highly experienced, with an average teaching experience of nearly 19 years.

Appendix Figure A.1 shows students' behavior in the incentivized experiments. On average, in the dicator game children allocated 1.67 tokens to the receiver (out of 6), with 38% keeping all tokens to themselves, and 26% choosing an equal split. Only 3.7% of the children gave all tokens to the receiver. In the public goods game, 67% of students decided not to contribute, and a similar share (69%) did not cooperate in the prisoner's dilemma. In the die-reporting game, 43% of students reported the maximum outcome of 6, with an average report of 4.61, suggesting that cheating is widespread in this setting. In Appendix Table A.1, we present correlations of students' behaviors across games. We find that the correlations are statistically significant at conventional levels and have the expected signs, indicating that students who are more prosocial in one dimension tend to be more pro-social in others (all correlations are positive except correlation with cheating which is negative as expected).

Appendix Figure A.2 and Appendix Table A.2 report similar results for teachers. Sixty-six per-

[8]We note that information on parental education comes from administrative records, and we could not match this information for 35% of students in the sample.

cent of teachers selected an equal split in the dictator game, and the average number of tokens given was 2.55. The majority of teachers contributed in the public goods game (82%) and cooperated in the prisoner's dilemma (74%). Correlations across teachers' behaviors are all statistically significant and in the expected directions, mirroring the patterns observed among students.

3 Empirical Strategy

To study the transmission of social preferences from teachers to students, we adapt a parent-child design to a student-teacher setting. Following the common approach in the literature studying the intergenerational transmission of economic preferences, we regress students' social preferences on those of the teachers assigned to their classrooms (e.g., Chowdhury, Sutter, and Zimmermann (2022); Dohmen, Falk, Huffman, and Sunde (2012)). Specifically, we estimate the following Ordinary Least Squares (OLS) regression:

$$y^S_{i,c,g,j} = \alpha + \beta y^T_c + \gamma X_{i,c} + \omega_g + \lambda_j + \epsilon_{i,c,g,j} \tag{1}$$

where $y^S_{i,c,g,j}$ is the outcome of student i, in classroom c, grade g and school j; y^T_c captures the social preferences of the teacher(s) assigned to classroom c, $X_{i,c}$ is a set of child- and class-level controls, including gender, age, and the number of classroom teachers; and ω_g and λ_j denote grade and school fixed effects, respectively. Because students may be taught by multiple teachers (as described in Section 2.1), we construct y^T_c as the average level of social preferences among the main teachers who teach classroom c (below we show that our results are robust to including *all* teachers). In the analyses, we cluster standard errors at the classroom level and show that inference is robust to clustering at the school level.

School fixed effects account for sorting across schools – for example, situations in which more prosocial teachers systematically select into schools serving more advantaged students or facing less challenging social environments (Barbieri, Rossetti, & Sestito, 2011). The coefficient β is therefore identified from variation in teachers' social preferences across classrooms within the same school, and can be interpreted causally if, conditional on the included controls, teachers' social preferences are as-good-as-randomly assigned across classrooms. As a robustness check, we also estimate a more demanding specification with school-by-grade fixed effects (λ_{jg}), which identifies β exclusively by comparing students assigned to different classrooms within the same school j and grade g.

Our identifying assumption could be violated if teachers and students are systematically matched within schools based on their social preferences. In particular, more prosocial parents might seek to place their children with more prosocial teachers. In that case, the observed relationship between teacher and student prosociality could reflect parent-child transmission rather than teacher influence: more prosocial parents would both raise more prosocial children and sort them into classrooms taught by more prosocial teachers. While such direct sorting seems unlikely – because teachers' social preferences are not readily observable to parents at the time of enrollment and teacher assignments are not determined by parental preferences, as discussed in Section 2.1 – parents might

still attempt to influence assignments based on observable teacher characteristics correlated with social preferences, such as gender or experience. Following Carlana (2019), we therefore show that, on average, the characteristics of the students, including their family background, are not systematically associated with the social preferences of their assigned teachers. The absence of matching along these observable dimensions lends credibility to our identification strategy.[9] Moreover, we present evidence that the relationship between teachers' and students' social preferences is weak among the youngest students in our sample and becomes stronger for older students, after they have had greater exposure to their teachers. This pattern suggests that initial teacher assignment is not systematically related to students' prosociality, and lends further credibility to our empirical design.

Importantly, our identification strategy does not require students to be randomly assigned across classrooms to peers. Sorting students across classes would threaten identification only if it were systematically related to the social preferences of the teachers assigned to those classes. Nevertheless, we also examine class formation directly and show that there is little evidence that students with similar observable characteristics are systematically grouped together. This finding is consistent with the institutional setting described in Section 2.1: classes are formed at school entry using broad balancing criteria.

Another concern is reverse causality. Because teachers' social preferences were measured after they had already spent time with their current students, the estimated association could partly reflect students shaping teachers' measured prosociality rather than teachers shaping students. This possibility appears less likely in light of evidence on the development and stability of social preferences over the life cycle. Experimental studies document substantial changes in fairness and other-regarding preferences throughout childhood and adolescence, as well as their responsiveness to children's social environments (Almås, Cappelen, Sørensen, and Tungodden (2010); Fehr, Bernhard, and Rockenbach (2008); Kosse, Deckers, Pinger, et al. (2020)). By contrast, repeated incentivized elicitations among adults document a meaningful persistence in cooperative and distributional preferences over time (Carlsson, Johansson-Stenman, and Nam (2014); Peysakhovich, Nowak, and Rand (2014); Volk, Thöni, and Ruigrok (2012)). Moreover, our measures capture teachers' generalized prosocial behavior toward anonymous adults rather than behavior directed toward the students in their own classrooms, making it less likely that exposure to a particular class-group materially altered the preferences elicited in our experiments.

To further assess the possibility of reverse causality in our setting, we exploit the fact that each class is typically taught by two main teachers. If exposure to a common group of students shapes teachers' measured social preferences, co-teachers who have spent more time teaching the same class should be more similar in their prosociality. We therefore examine whether the absolute difference in social preferences between the two teachers assigned to a classroom varies with their years of shared exposure to that class. Because this comparison is made across different pairs of teachers

[9] Using Italian administrative data, Abbiati, Argentin, and Gerosa (2017) further show that parental educational background and teachers' characteristics, such as seniority and stable employment, are not significantly correlated in primary education.

rather than by following the same pair over time, we interpret it as an additional diagnostic of reverse causality rather than as a direct test of within-pair convergence. We present this analysis below.

4 Results

4.1 Assignment of Students to Teachers

We examine whether teachers with different levels of social preferences are systematically assigned to particular groups of students. If more prosocial parents are able to recognize and influence assignment toward more prosocial teachers, any observed relationship between teachers' and students' social preferences could instead reflect unobserved parental preferences. Figure 1 reports the results of this exercise. For each student characteristic, we estimate its relationship with teachers' social preferences, measured with the index described in Section 2.3.1. Across all observable characteristics, we find no evidence that more prosocial teachers are systematically assigned to different students within schools. The point estimates are small in magnitude, the confidence intervals always include zero, and the joint F-test fails to reject the null that the plotted characteristics are jointly unrelated to teachers' social preferences. These results are very similar when student observations are collapsed at the classroom level (Appendix Figure A.3). Systematic matching based on social preferences would also tend to generate assortative matching among teachers assigned to the same classroom. We find no evidence of this: the correlation between co-teachers' social-preference is 0.047 ($p = 0.525$).

As an additional check on class formation, following Carlana (2019), we conduct Pearson chi-square tests to assess whether students are systematically sorted across classrooms based on observable characteristics. Consistent with the balancing criteria described in Section 2.1, only 5.1% of these tests yield a p-value less than or equal to 0.05, suggesting little systematic grouping of students across classrooms according to their demographic or socioeconomic characteristics.[10]

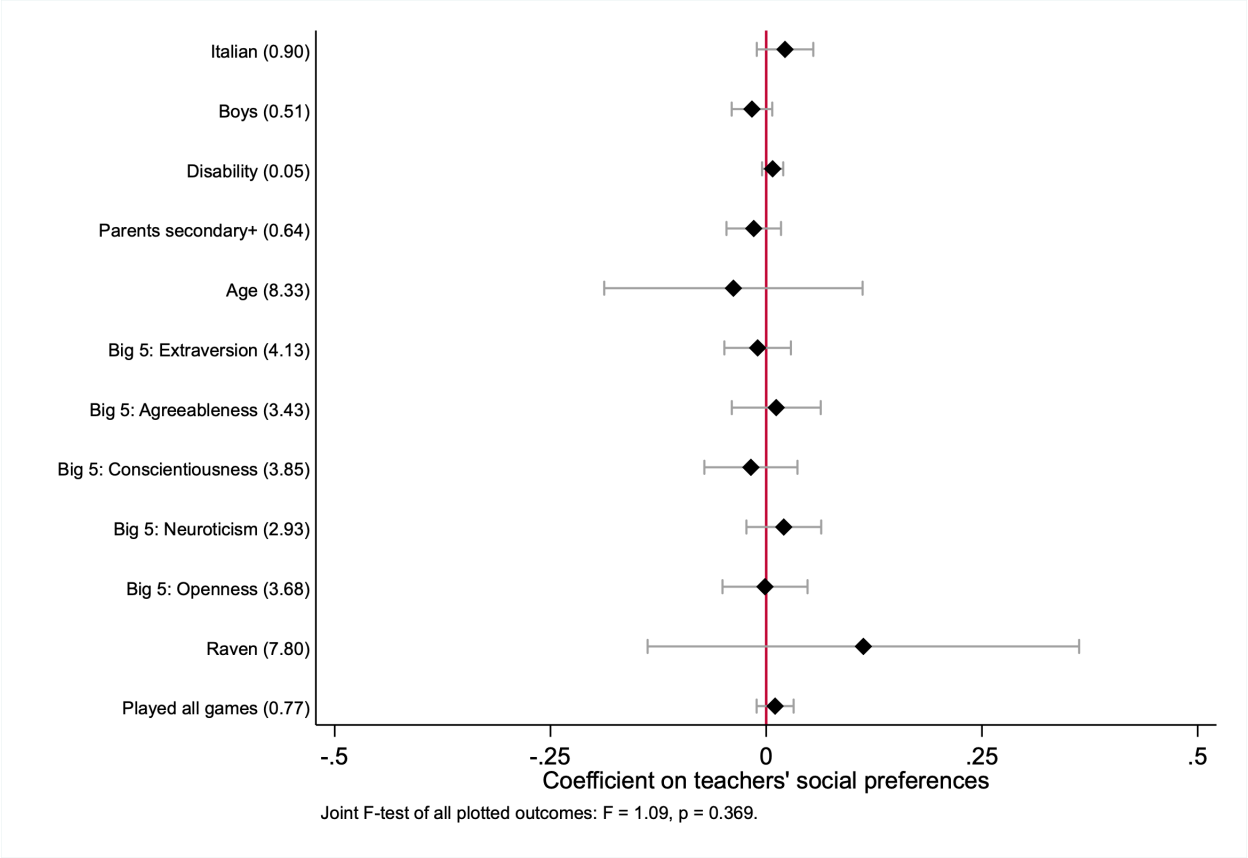
Taken together, these findings provide little evidence of systematic matching between teachers' social preferences and observed student characteristics within schools, lending credibility to our empirical strategy.

4.2 Reverse Causality

To test for reverse causality, we exploit the fact that most classes are taught by more than one main teacher. If students or classroom-specific social environments affect teachers' measured social preferences, this influence should be shared by teachers exposed to the same class. In particular, co-teachers who have taught the same students for longer should display more similar social preferences than co-teachers with shorter common exposure. We therefore construct a teacher-pair dataset. For each class, we form all unique pairs of teachers and compute the absolute difference between their

[10]The tests examine students' gender, age, Italian nationality, disability status, parental education, and the availability of complete background information.

Figure 1: Assignment of Students to Teachers



Notes: This figure plots the coefficients of a regression of students' characteristics on teachers' social preferences. Each coefficient corresponds to a separate regression for each outcome. Teachers' social preferences are measured with the "Social Preferences Index" described in Section 2.3.1. All regressions include school fixed effects. Standard errors are clustered at the class level. Outcome means are reported in parentheses next to each outcome label. The joint F-test tests whether all plotted student characteristics jointly predict teachers' social preferences; its p-value is reported in the figure.

standardized social-preference indices. We then examine whether this pairwise distance declines with the number of years the two teachers have jointly taught the same class.

The results, reported in Appendix Figure A.4, do not support this prediction. Co-teachers' social preferences are not more similar in later grades, when they have had longer shared exposure to the same class. The estimates fluctuate around zero: approximately -0.08 in grade 2, 0.09 in grade 3, 0.01 in grade 4, and -0.07 in grade 5. Consistent with this pattern, the estimated linear trend across grades is statistically insignificant (coefficient = -0.092; standard error = 0.102), and we cannot reject equality across grades ($p = 0.295$). We interpret this exercise as a diagnostic rather than a definitive test, since it compares different teacher pairs rather than following the same pair over time. Overall, this evidence is suggestive of limited reverse causality. However, because teachers' social preferences were collected after teachers had already been exposed to their current students, we cannot fully rule out this possibility.

4.3 Relation between Students' and Teachers' Preferences

We report the relation between students' and teachers' social preferences in Table 3. Columns 1-3 present results for the overall social preference index (as defined in Section 2.3.1); columns 4-6 show effects on behavior in the dictator game; columns 7-9 report results for the public goods game; columns 10-12 display students' reports in the die-reporting game; and columns 13-15 present students' behavior in the prisoner's dilemma.

There is a positive effect of teachers' social preference on students' social preferences. The coefficient in column 1 implies that a one-standard-deviation (SD) increase in teachers' social preferences is associated with an increase in students' social preferences of 0.089 SD. Quantitatively, this corresponds to assigning a student to a teacher whose prosociality lies at the 75th rather than the 15th percentile. The coefficient is very similar once we include child demographic controls (column 2) and when further controlling for cognitive ability and personality traits (column 3).

We report several robustness checks for these results in Appendix Figure A.5. Specifically, we begin by reproducing the estimates from columns 1-3 of Table 3 (models M1-M3 in Appendix Figure A.5). We then show that the results remain stable when controlling for teachers' experience and education (M4), and when computing average teacher social preferences using *all* teachers in a class rather than only the two main ones, as in our baseline specification (M5). The findings are also robust to restricting the estimation sample to students who participated in all four experimental games, corresponding to approximately 77% of the sample (M6). We further verify that the results are not sensitive to the construction of the social preference index: using the aggregation method proposed by Anderson (2008) yields very similar effects (M7). We also estimate a more demanding specification with school-by-grade fixed effects, which compares students within the same school and grade (M8). The estimate remains similar in magnitude, although it is less precisely estimated. Finally, we show that inference is similar when standard errors are clustered at the school rather than the class level (M9).

Because the die-reporting task was administered only to students, we also construct a symmetric social-preference index using only the experimental tasks observed for both students and teachers: the dictator game, the public goods game, and the prisoner's dilemma. Appendix Table A.3 reports the results using this index. The estimated coefficients remain similar in magnitude across all three specifications, indicating that the main relationship is not driven by the inclusion of the honesty measure in the student index. The estimates are less precise than in the baseline specification, but remain statistically significant at the 10 percent level or better.

To complement these specification checks, Appendix Figure A.6 reports a within-school permutation exercise. We randomly reassign teachers' social preferences across classrooms within each school 1,000 times and re-estimate the specification reported in column 3 of Table 3. The observed coefficient of 0.091 lies far in the right tail of the resulting placebo distribution (the two-sided permutation p-value is 0.021). The estimated teacher-student relationship is therefore unlikely to arise under random within-school reassignments of teachers' social preferences.

In Appendix Figure A.7, we explore the distribution of students' social preferences by classifying

teachers as having "low" or "high" social preferences, based on whether their score falls below or above the sample median. We then plot the estimated cumulative distribution function (CDF) of students' social preferences separately by teacher type. The distribution for students taught by high-social-preference teachers first-order stochastically dominates that for students taught by low-social-preference teachers. A Kolmogorov-Smirnov (K-S) test rejects the null hypothesis of equality (p-value=0.027), confirming that the distributions of the two groups are statistically different.

In the remaining columns of Table 3, we unpack these results across the individual components of the prosociality index. Students taught by more generous teachers in the dictator game also tend to give more themselves: each additional token given by the teacher is associated with an increase of 0.087 tokens in students' giving behavior (column 4). As students in our sample give an average of 1.67 tokens, this effect corresponds to roughly a 5% increase in generosity. These results remain stable after controlling for child characteristics (column 5), including cognitive skills and personality traits (column 6).

Appendix Table A.4 further shows that the increase in students' giving is driven by a higher likelihood of making positive transfers at several thresholds: students of more prosocial teachers are more likely to give more than one or two tokens, and are 2 percentage points more likely to choose an equal split, a 7% increase relative to the mean. Following Cappelen, List, Samek, and Tungodden (2020), we compute the implied inequality in outcomes, measured as the absolute difference in tokens divided by the total number of tokens. Students of more prosocial teachers generate more equal outcomes, suggesting that exposure to prosocial teachers not only raises generosity but also reduces inequality in resource allocation.

We also find that teachers' behavior in the public goods game positively affects students' own willingness to contribute (columns 7-9). The estimated coefficients suggest that a more cooperative teacher increases the probability that her students contribute to the public good by about 9-12 percentage points, depending on the specification, corresponding to a 27-37% increase relative to the sample mean.

Turning to dishonest behavior, we observe a negative and statistically significant relationship between teachers' social preferences (measured by their contribution in the dictator game) and students' reported outcomes in the die-reporting task (columns 10-12). As discussed above, we do not observe individual-level cheating in this game, since the actual outcomes of dice rolls are unobserved. Instead, we rely on students' self-reported rolls, which may reflect either truthful reporting or dishonest behavior. We find that students taught by more prosocial teachers report, on average, lower numbers in the dice task. The estimated coefficients range from -0.09 to -0.11; given an average report of 4.6 – well above the fair benchmark of 3.5 – this effect represents a meaningful reduction of about 10% of the gap between fair and observed reports. These results suggest that teachers with stronger social preferences foster greater honesty among their students.

Because individual-level cheating cannot be directly observed, Appendix Table A.5 reports results at the class level. If children were truthfully reporting, the expected average report from a fair die is 3.5, whereas in our data the mean class-level report is 4.6, suggesting that cheating is

widespread in this setting. Importantly, we find that classes taught by more prosocial teachers report significantly lower averages than those taught by less prosocial ones (columns 1-2 of Appendix Table A.5). The estimated effect on the probability that the class-level mean report exceeds 3.5 is negative, small and statistically insignificant (columns 3-4 of Appendix Table A.5). We note that this indicator has limited variation, with 98% of classrooms exceeding the fair benchmark, and that sampling variation can generate class means above 3.5 even under truthful reporting.

Finally, columns 13-15, report results for the prisoner's dilemma game. The estimated coefficients are positive but smaller in magnitude and statistically insignificant for this outcome, suggesting no detectable relationship between teachers' and students' cooperative behavior measured in this game.

Overall, these results consistently point to a meaningful transmission of prosociality from teachers to students, particularly in domains involving generosity, cooperation, and honesty.

4.4 Dynamics

Having established that students' social preferences are influenced by those of their teachers, we turn to the timing of these effects. It is reasonable to expect that a teacher's influence does not emerge instantly but rather strengthens with continued exposure over time. To examine this, we study how the relationship between teachers' and students' social preferences evolves with students' age and thus by the length of time they have been taught by the same teacher. Because the data are cross-sectional by age, this exercise should not be interpreted as following the same child as exposure accumulates. Instead, it tests whether the teacher-student relationship is stronger among students who have plausibly had longer exposure to their teachers.

For this analysis, as above, we classify teachers as "high" or "low" in social preferences, depending on whether their index value falls above or below the sample median. We then estimate a fully interacted model that allows the relationship between teachers' and students' social preferences to vary with students' age. The coefficients from this model are reported in Appendix Table A.6 and plotted in Figure 2.

Students taught by teachers with "low" social preference scores exhibit a decline in their own social preference as they age, while this pattern is not observed for students taught by teachers with "high" social preferences. The difference between the two groups is not statistically significant at age 7. By age 8, students of "high"-preference teachers begin to outperform their peers, though the difference remains not statistically significant. At age 9, the gap widens, with the difference reaching 0.15 SD (this difference is significant at the 10% level). By age 10, the difference increases to 0.36 SD and is highly significant ($p<0.01$).

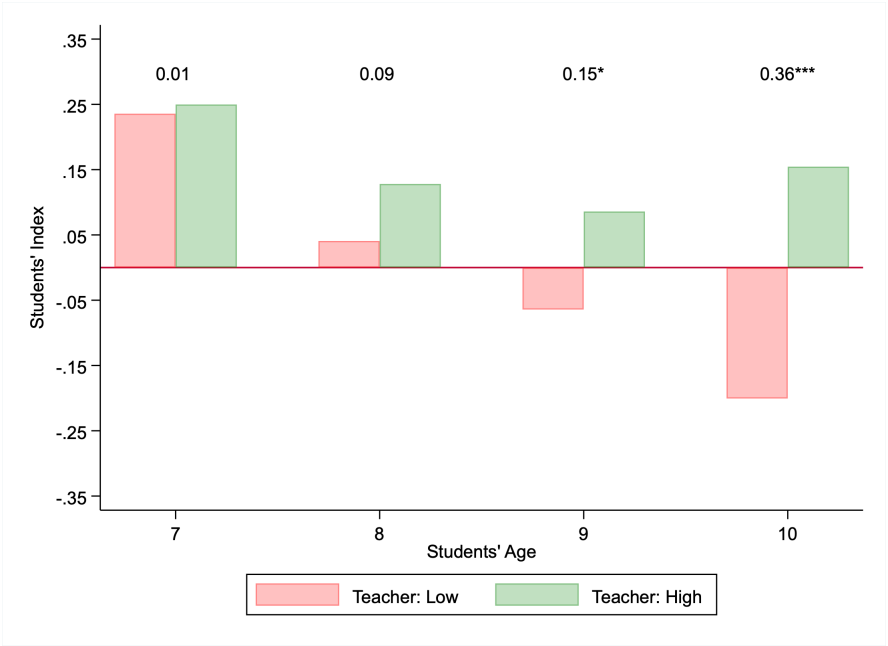
This age gradient is consistent with a gradual process of socialization, in which teacher's prosocial behavior becomes more strongly reflected in students' own social preferences as exposure accumulates. The absence of a significant difference at age 7 is also reassuring for our identifying assumption, since students with higher social preferences do not appear to be systematically assigned to more prosocial teachers early in the teacher-student relationship.

Table 3: Relation between Students' and Teachers' Social Preferences

	Students:														
	Index			Dictator			Public			Die-reporting			Prisoner		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Teachers:															
Index	0.089**	0.089**	0.091**												
	(0.040)	(0.040)	(0.039)												
Dictator				0.087**	0.079**	0.089**				-0.093***	-0.105***	-0.108***			
				(0.039)	(0.039)	(0.040)				(0.035)	(0.035)	(0.035)			
Public							0.093*	0.108**	0.118**						
							(0.050)	(0.048)	(0.049)						
Prisoner													0.048	0.057	0.053
													(0.038)	(0.036)	(0.035)
Mean outcome		0.000			1.667			0.326			4.610			0.302	
R-squared	0.030	0.045	0.120	0.025	0.035	0.121	0.058	0.075	0.086	0.016	0.025	0.032	0.028	0.036	0.085
Observations	2854	2645	2617	2779	2609	2609	2322	2143	2119	2717	2564	2552	2787	2617	2617
Controls	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y
Extended controls	N	N	Y	N	N	Y	N	N	Y	N	N	Y	N	N	Y

Notes: This table reports the relation of students' social preferences with their teachers' social preferences. "Index" is an index derived aggregating the outcomes of the individual games (as described in section 2.3.1). "Dictator" is children's behavior in the dictator game, corresponding to the number of tokens assigned to the recipient (this variable ranges from 0 to 6). "Public" is children's behavior in the public goods game (1 contributing or 0 not contributing). "Die-reporting " corresponds to the number reported in the die-reporting game (this variable ranges from 1 to 6). "Prisoner" is children's behavior in the prisoner's dilemma (1 or 0). All regressions include school fixed effects. Controls include child gender, age, grade and number of class teachers. Extended controls further include Raven scores and Big Five personality traits. Standard errors are clustered at the class level. * indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

Figure 2: Relation between Students' and Teachers' Preferences by Age



Notes: This figure plots the students' social preferences by age, separately for students taught by teachers with "low" versus "high" social preferences. Social preferences are measured with the index described in Section 2.3.1. Teachers are classified based on whether their score falls below or above the sample median. For each age, the figure shows: (i) the average level of social preferences for the two groups (red for students of low social preference teachers, green for students of high social preference teachers); (ii) the difference in means between the groups; and (iii) the statistical significance of the difference. The corresponding regression estimates are reported in Appendix Table A.6. * indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

4.5 Are Teachers' Social Preferences Capturing General Teacher Quality?

Teachers' social preferences may reflect a specific dimension of teacher influence, but they could also be correlated with broader teacher effectiveness. The teacher-effects literature has long documented that teachers differ in their ability to affect student outcomes (Chetty, Friedman, and Rockoff, 2014), while also emphasizing that the underlying traits that make teachers effective remain difficult to identify, especially for socio-emotional outcomes (Alan, 2026). We therefore ask whether the dynamic pattern documented above is specific to students' social preferences, or whether it also appears for a wider set of student measures.

Appendix Figure A.8 repeats the same age-specific comparison using students' Raven and Big Five scores. Unlike students' social preferences, these outcomes show no systematic divergence between students assigned to "high"- and "low"-social-preference teachers as age increases. The estimated differences vary in sign across ages and do not display the increasing pattern observed for students' social preferences. Although several isolated differences are statistically significant, they do not form a consistent pattern across outcomes or ages. This suggests that the main dynamic result is unlikely to be driven by teacher social preferences simply proxying for general teacher quality.

4.6 Mechanisms

Teachers' social preferences could affect students' own preferences through several channels. Some of these channels may operate through direct socialization, as students observe and internalize norms and behaviors modeled by their teachers. Others may operate through the classroom social environment, by shaping how children interact with one another, or through students' beliefs about the behavior of their peers. Teachers may also have an effect through other classroom practices, relationships, pedagogy, and routines that we do not directly observe. In this section, we focus on two channels that our data allow us to measure: peer behavior and beliefs about peers.

First, teachers may shape peer dynamics within the classroom. In this case, teachers' prosociality could propagate indirectly: more prosocial teachers foster more cooperative and trusting peer dynamics, which in turn reinforce prosociality among individual students. This would generate a potential amplification mechanism, whereby teachers' influence extends beyond direct interactions to the broader peer network, producing a *social multiplier effect* within the classroom (Glaeser, Sacerdote, and Scheinkman (2003); Manski (1993)).

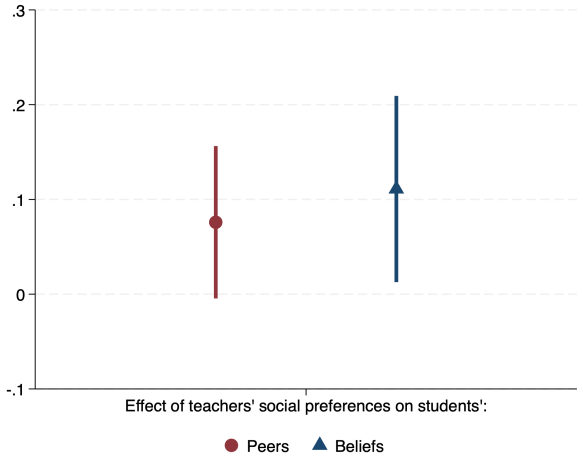
Second, teachers may influence students' beliefs about the social behavior of others. If more prosocial teachers foster expectations that peers are fair, honest, or cooperative, students may adjust their own behavior accordingly, aligning their choices with these more optimistic social beliefs. Through this channel, teachers shape students' preferences indirectly by influencing the formation of beliefs about others' trustworthiness and reciprocity.

We empirically examine both channels. First, we test peer-mediated effects by estimating whether teachers' social preferences predict the average level of prosocial behavior among a student's classmates, excluding the focal student. Second, we study the role of beliefs by examining how teachers' prosociality affects students' expectations about their peers' behavior in the experimental games. Specifically, we estimate models analogous to equation (1), where the dependent variable is either the average level of social preferences among a student's peers or an index of prosocial beliefs constructed from the following two survey questions: "Now I ask you to guess how many classmates decided to put 2 tokens in the magic box? If your guess is right you gain 1 extra coin." and "Now I'd like you to think about how many children in this class chose to divide the coins like this: 6 for themselves and 0 for the other player. If your guess is right you gain 1 extra coin."[11]

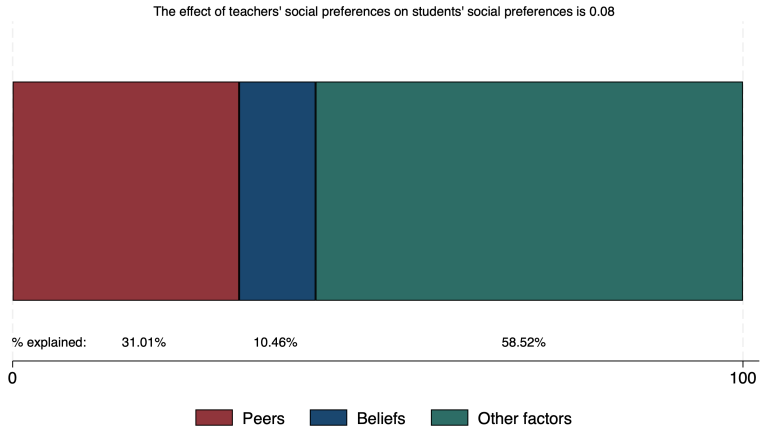
Panel A of Figure 3 presents the results. A one-standard-deviation increase in teachers' social preferences is associated with a 0.076 SD increase in peers' average pro-sociality (p-value=0.06) and a 0.111 SD increase in students' pro-social beliefs (p-value=0.03). Thus, students assigned to more prosocial teachers are surrounded by peers who are themselves more prosocial – reflecting the teacher's influence on the group – and they also develop more optimistic beliefs about others'

[11]The first question relates to the public goods game, and the second one to the dictator game. We rescore the answers to these questions so that higher values mean more prosocial beliefs. To construct an index we follow Kling, Liebman, and Katz (2007), and standardize each variable by subtracting the sample mean and dividing by the sample standard deviation. We then take an average of these z-scores and re-standardize it to have a mean zero and standard deviation one in the sample.

Figure 3: Peer Behavior and Beliefs as Potential Channels of Social Preference Transmission



(a) Effect of Teachers' Social Preferences on Peer Prosociality and Students' Beliefs



(b) Share of the Teacher-Student Relationship Accounted for by Observed Channels

Notes: This figure reports evidence on observed channels linking teachers' and students' social preferences. Social preferences are measured with the index described in Section 2.3.1. Panel A reports the estimated relationship between teachers' social preferences and: (i) the average level of prosocial behavior among a student's classmates, excluding the focal student (labeled "Peers"); and (ii) an index of prosocial beliefs constructed from responses to the following two survey questions: "Now I ask you to guess how many classmates decided to put 2 tokens in the magic box? If your guess is right you gain 1 extra coin." and "Now I'd like you to think about how many children in this class chose to divide the coins like this: 6 for themselves and 0 for the other player. If your guess is right you gain 1 extra coin." (labeled "Beliefs"). Coefficients correspond to regressions analogous to equation (1) and include the following controls: school fixed effects, child gender, age, grade, number of class teachers, Raven scores and Big Five personality traits. Panel B reports a descriptive decomposition of the effect reported in column 3 of Table 3 into components operating through peer dynamics (labeled "Peers"), students' beliefs about their classmates (labeled "Beliefs"), and unmeasured channels (labeled "Other factors"). The effect of a one standard deviation increase in teachers' social preferences on students' preferences is normalized to 100%. The red area represents the share accounted for by changes in peers' prosociality, the dark blue area represents the share accounted for by students' beliefs, and the green area represents the share operating through unobserved channels.

behavior. These results point to two reinforcing channels through which teachers could shape students' own social preferences: by cultivating more cooperative peer environments and by fostering more positive expectations about others.

We then ask how much of the relation between teachers' and students' social preferences is accounted for by these observed channels. Our approach is conceptually related to Heckman, Pinto, and Savelyev (2013), though adapted here to a continuous treatment setting. This exercise is useful for organizing the evidence, but it should not be interpreted as a causal mediation analysis. Peer behavior and beliefs are not randomly assigned and could be subject to the same unobserved shocks, so we cannot separately identify their causal effect on students' own social preferences.[12] We therefore interpret this as a descriptive decomposition of the teacher-student relationship into observed classroom channels and residual unmeasured channels.

Panel B of Figure 3 presents the results. Peer prosociality accounts for 31% of the teacher relationship, while students' beliefs account for 10%. The remaining 59% is left unexplained by these two observed channels and may reflect direct socialization or other unmeasured classroom practices, relationships, and routines.

Finally, we complement these results by examining a distributional implication of the peer channel. Panel A of Figure 3 shows that teachers' social preferences predict average prosociality among students' classmates. If changes initiated by teachers are subsequently reinforced through interactions among classmates, teachers may affect not only average behavior within the classroom but also its dispersion, making students increasingly similar to one another as classroom interactions accumulate. This possibility is consistent with work showing that social norms can compress behavioral variation within groups (Young (2015)) and that repeated group interactions can lead initially heterogeneous behavior to become more tightly clustered around a common benchmark (Bose, Dechter, and Ivancic (2023)). Appendix Figure A.9 shows that within-class dispersion in prosociality declines across grades, with particularly clear declines in the dictator and public-goods games. Taken together, the stronger teacher-student relationship among older students documented in Figure 2 and the decline in within-class dispersion are consistent with a process in which teachers shape students' behavior and interactions among classmates reinforce that influence.[13]

5 Conclusions

This paper provides evidence on the institutional transmission of social preferences. Using *paradigmatic economic experiments* (Fehr and Charness (2025)) with 2854 primary school students and 238 teachers in Italy, combined with the quasi-random assignment of students to teachers within schools, we show that teachers' prosociality shapes the development of generosity, cooperation, and honesty

[12] This distinction is especially important for peer behavior, where the interpretation is related to the identification problems discussed by Manski (1993): individual and group behavior may be jointly determined within the same classroom, and both may respond to shared classroom influences and shocks.

[13] Because the analysis compares different classrooms across grades rather than following the same classrooms over time, and does not causally isolate peer influence from other classroom processes, we interpret it as suggestive evidence rather than as a direct test of norm formation.

in childhood. We also find that the relationship between teachers' and students' social preferences is stronger among older students, consistent with teachers' influence accumulating through continued interaction and longer-term classroom socialization. Teachers' prosociality predicts both greater prosociality among a student's peers and more prosocial beliefs about others' behavior, pointing to these outcomes as potential channels for the transmission of social preferences. In a descriptive, non-causal accounting exercise, these two observed channels jointly account for approximately 40% of the overall teacher-student relationship; the remaining share is left unexplained and may reflect direct socialization from teachers to students, as well as other unobserved classroom processes.

These findings highlight the importance of teachers as socializing agents in childhood. They show that teachers influence not only cognitive development and academic outcomes, as emphasized in prior work (e.g., Araujo, Carneiro, Cruz-Aguayo, and Schady (2016); Chetty, Friedman, and Rockoff (2014)), but also the formation of core social preferences that underpin economic and societal functioning. More broadly, our results speak to the long-standing view, dating back to Dewey (1930) and echoed in modern nation-building research (e.g., Bandiera, Mohnen, Rasul, and Viarengo (2019); Cantoni, Chen, Yang, et al. (2017)), that educational systems play a central role in shaping citizens' values and behaviors. Our findings complement this work by showing that everyday interactions with teachers, not only formal curricula or institutional reforms, constitute a powerful channel through which social preferences are transmitted in childhood, pointing to an overlooked but consequential dimension of educational quality with implications that extend far beyond the classroom.

The results also speak directly to the design of school-based interventions. Recent work demonstrates that targeted programs can successfully foster prosocial behavior and social cohesion in classrooms (Alan, Baysan, Gumren, and Kubilay (2021), Alan, Carlana, and Leone (2026)). Our evidence complements these studies by showing that the preferences of teachers themselves represent a powerful channel through which social preferences are shaped. This underscores the potential of policies that invest in teachers' social and relational skills or that structure classroom environments to reinforce cooperative norms as tools for cultivating prosociality at scale.

Finally, the evidence raises new questions about the specific features of teachers that drive these effects. Understanding whether prosocial teachers are more effective because of their interactions with students, the norms they establish, or the pedagogical styles they employ would deepen our understanding of how institutional environments shape prosocial development. In particular, recent work on teaching styles and classroom organization suggests promising avenues: cooperative, participatory, and trust-based pedagogy may amplify teachers' influence on students' social preferences (Algan, Cahuc, and Shleifer (2013)). Future work examining these channels directly or evaluating interventions that reshape classroom practices or support teacher training could provide a richer picture of how schools can effectively foster students' prosocial development.

References

Abbiati, G., Argentin, G., & Gerosa, T. (2017). Different teachers for different students? evidence on teacher-student matching and its consequences in the Italian case. *Politica economica*, *33*(1), 12–58.

Agostinelli, F., Saharkhiz, M., & Wiswall, M. (2025). Home and school in the development of children. *International Economic Review*, *66*(2), 527–566. https://doi.org/10.1111/iere.12774

Alan, S. (2026). *Shaping society's character: The role of schools in developing social and emotional skills* (NBER Working Paper No. 35161). National Bureau of Economic Research. https://doi.org/10.3386/w35161

Alan, S., Baysan, C., Gumren, M., & Kubilay, E. (2021). Building social cohesion in ethnically mixed schools: An intervention on perspective taking. *The Quarterly Journal of Economics*, *136*(4), 2147–2194. https://doi.org/10.1093/qje/qjab009

Alan, S., Carlana, M., & Leone, M. (2026). Inclusive teaching: Spotting social isolation in the classroom. *American Economic Journal: Economic Policy*, *18*(4), 1–31.

Alan, S., Duysak, E., Kubilay, E., & Mumcu, I. (2023). Social exclusion and ethnic segregation in schools: The role of teachers' ethnic prejudice. *The Review of Economics and Statistics*, *105*(5), 1039–1054. https://doi.org/10.1162/rest_a_01111

Algan, Y., Beasley, E., Cote, S., Park, J., Tremblay, R. E., & Vitaro, F. (2022). The impact of childhood social skills and self-control training on economic and noneconomic outcomes: Evidence from a randomized experiment using administrative data. *American Economic Review*, *112*(8), 2553–2579. https://doi.org/10.1257/aer.20200224

Algan, Y., & Cahuc, P. (2013). Trust and growth. *Annual Review of Economics*, *5*(1), 521–549. https://doi.org/10.1146/annurev-economics-081412-102108

Algan, Y., Cahuc, P., & Shleifer, A. (2013). Teaching practices and social capital. *American Economic Journal: Applied Economics*, *5*(3), 189–210. https://doi.org/10.1257/app.5.3.189

Almås, I., Cappelen, A. W., Sørensen, E. Ø., & Tungodden, B. (2010). Fairness and the development of inequality acceptance. *Science*, *328*(5982), 1176–1178. https://doi.org/10.1126/science.1187300

Almlund, M., Duckworth, A. L., Heckman, J., & Kautz, T. (2011). Personality psychology and economics. In E. A. Hanushek, S. Machin, & L. Woessmann (Eds.), *Handbook of the economics of education* (pp. 1–181, Vol. 4). Elsevier. https://doi.org/10.1016/b978-0-444-53444-6.00001-8

Anderson, L. R., Mellor, J. M., & Milyo, J. (2004). Social capital and contributions in a public-goods experiment. *American Economic Review*, *94*(2), 373–376. https://doi.org/10.1257/0002828041302082

Anderson, M. L. (2008). Multiple inference and gender differences in the effects of early intervention: A reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects. *Journal of the American Statistical Association*, *103*(484), 1481–1495. https://doi.org/10.1198/016214508000000841

Andreoni, J., & Miller, J. (2002). Giving according to GARP: An experimental test of the consistency of preferences for altruism. *Econometrica*, *70*(2), 737–753. https://doi.org/10.1111/1468-0262.00302

Araujo, M. C., Carneiro, P., Cruz-Aguayo, Y., & Schady, N. (2016). Teacher quality and learning outcomes in kindergarten. *The Quarterly Journal of Economics*, *131*(3), 1415–1453. https://doi.org/10.1093/qje/qjw016

Bandiera, O., Mohnen, M., Rasul, I., & Viarengo, M. (2019). Nation-building through compulsory schooling during the age of mass migration. *The Economic Journal*, *129*(617), 62–109. https://doi.org/10.1111/ecoj.12624

Barbieri, G., Rossetti, C., & Sestito, P. (2011). The determinants of teacher mobility: Evidence using Italian teachers' transfer applications. *Economics of Education Review*, *30*(6), 1430–1444. https://doi.org/10.1016/j.econedurev.2011.07.010

Bardsley, N. (2008). Dictator game giving: Altruism or artefact? *Experimental Economics*, *11*(2), 122–133. https://doi.org/10.1007/s10683-007-9172-2

Benenson, J. F., Pascoe, J., & Radmore, N. (2007). Children's altruistic behavior in the dictator game. *Evolution and Human Behavior*, *28*(3), 168–175. https://doi.org/10.1016/j.evolhumbehav.2006.10.003

Ben-Ner, A., List, J. A., Putterman, L., & Samek, A. (2017). Learned generosity? an artefactual field experiment with parents and their children. *Journal of Economic Behavior & Organization*, *143*, 28–44. https://doi.org/10.1016/j.jebo.2017.07.030

Bettinger, E., & Slonim, R. (2006). Using experimental economics to measure the effects of a natural educational experiment on altruism. *Journal of Public Economics*, *90*(8-9), 1625–1648. https://doi.org/10.1016/j.jpubeco.2005.10.006

Bigoni, M., Bortolotti, S., Casari, M., & Gambetta, D. (2019). At the root of the North–South cooperation gap in Italy: Preferences or beliefs? *The Economic Journal*, *129*(619), 1139–1152. https://doi.org/10.1111/ecoj.12608

Bisin, A., & Verdier, T. (2001). The economics of cultural transmission and the dynamics of preferences. *Journal of Economic Theory*, *97*(2), 298–319. https://doi.org/10.1006/jeth.2000.2678

Bloom, N., Sadun, R., & Van Reenen, J. (2012). The organization of firms across countries. *The Quarterly Journal of Economics*, *127*(4), 1663–1705. https://doi.org/10.1093/qje/qje029

Bolton, G. E., & Ockenfels, A. (2000). ERC: A theory of equity, reciprocity, and competition. *American Economic Review*, *91*(1), 166–193. https://doi.org/10.1257/aer.90.1.166

Bose, G., Dechter, E., & Ivancic, L. (2023). Conformity and adaptation in groups. *Journal of Economic Behavior & Organization*, *212*, 1267–1285. https://doi.org/10.1016/j.jebo.2023.06.006

Bowles, S. (1998). Endogenous preferences: The cultural consequences of markets and other economic institutions. *Journal of Economic Literature*, *36*(1), 75–111. https://doi.org/10.1257/jel.20241391

Cantoni, D., Chen, Y., Yang, D. Y., Yuchtman, N., & Zhang, Y. J. (2017). Curriculum and ideology. *Journal of Political Economy*, *125*(2), 338–392. https://doi.org/10.1086/690951

Cantoni, D., Heizlsperger, L.-J., Yang, D. Y., Yuchtman, N., & Zhang, Y. J. (2022). The fundamental determinants of protest participation: Evidence from Hong Kong's antiauthoritarian movement. *Journal of Public Economics*, *211*, 104667. https://doi.org/10.1016/j.jpubeco.2022.104667

Cappelen, A. W., List, J. A., Samek, A., & Tungodden, B. (2020). The effect of early-childhood education on social preferences. *Journal of Political Economy*, *128*(7), 2739–2758. https://doi.org/10.1086/706858

Capraro, V., Jordan, J. J., & Rand, D. G. (2014). Heuristics guide the implementation of social preferences in one-shot prisoner's dilemma experiments. *Scientific Reports*, *4*(1), 6790. https://doi.org/10.1038/srep06790

Carlana, M. (2019). Implicit stereotypes: Evidence from teachers' gender bias. *The Quarterly Journal of Economics*, *134*(3), 1163–1224. https://doi.org/10.1093/qje/qjz008

Carlsson, F., Johansson-Stenman, O., & Nam, P. K. (2014). Social preferences are stable over long periods of time. *Journal of Public Economics*, *117*, 104–114. https://doi.org/10.1016/j.jpubeco.2014.05.009

Carpenter, J., & Seki, E. (2011). Do social preferences increase productivity? field experimental evidence from fishermen in toyama bay. *Economic Inquiry*, *49*(2), 612–630. https://doi.org/10.1111/j.1465-7295.2009.00268.x

Chaudhuri, A. (2011). Sustaining cooperation in laboratory public goods experiments: A selective survey of the literature. *Experimental Economics*, *14*(1), 47–83. https://doi.org/10.1007/s10683-010-9257-1

Chetty, R., Friedman, J. N., & Rockoff, J. E. (2014). Measuring the impacts of teachers II: Teacher value-added and student outcomes in adulthood. *American Economic Review*, *104*(9), 2633–2679. https://doi.org/10.1257/aer.104.9.2633

Chetty, R., Hofmeyr, A., Kincaid, H., & Monroe, B. (2021). The trust game does not (only) measure trust: The risk-trust confound revisited. *Journal of Behavioral and Experimental Economics*, *90*, 101520. https://doi.org/10.1016/j.socec.2020.101520

Chowdhury, S., Sutter, M., & Zimmermann, K. F. (2022). Economic preferences across generations and family clusters: A large-scale experiment in a developing country. *Journal of Political Economy*, *130*(9), 2361–2410. https://doi.org/10.1086/720395

Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological Assessment*, *4*(1), 5–13. https://doi.org/10.1037/1040-3590.4.1.5
Cox, J. C. (2004). How to identify trust and reciprocity. *Games and Economic Behavior*, *46*(2), 260–281. https://doi.org/10.1016/s0899-8256(03)00119-2
Croson, R., & Marks, M. (2000). Step returns in threshold public goods: A meta- and experimental analysis. *Experimental Economics*, *2*(3), 239–259. https://doi.org/10.1023/A:1009918829192
Cunha, F., & Heckman, J. (2007). The technology of skill formation. *American Economic Review*, *97*(2), 31–47. https://doi.org/10.1257/aer.97.2.31
Deming, D. J. (2017). The growing importance of social skills in the labor market. *The Quarterly Journal of Economics*, *132*(4), 1593–1640. https://doi.org/10.3386/w21473
Dewey, J. (1897). My pedagogic creed. *The School Journal*, *54*(3), 77–80.
Dewey, J. (1930). *Democracy and education: An introduction to the philosophy of education* (Vol. 8). Macmillan New York.
Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, *41*(1), 417–440. https://doi.org/10.1146/annurev.ps.41.020190.002221
Djankov, S., Glaeser, E., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2003). The new comparative economics. *Journal of Comparative Economics*, *31*(4), 595–619. https://doi.org/10.1016/j.jce.2003.08.005
Dohmen, T., Falk, A., Huffman, D., & Sunde, U. (2009). Homo reciprocans: Survey evidence on behavioural outcomes. *The Economic Journal*, *119*(536), 592–612. https://doi.org/10.1111/j.1468-0297.2008.02242.x
Dohmen, T., Falk, A., Huffman, D., & Sunde, U. (2012). The intergenerational transmission of risk and trust attitudes. *The Review of Economic Studies*, *79*(2), 645–677. https://doi.org/10.1093/restud/rdr027
Dube, A., Giuliano, L., & Leonard, J. (2019). Fairness and frictions: The impact of unequal raises on quit behavior. *American Economic Review*, *109*(2), 620–663. https://doi.org/10.1257/aer.20160232
Durante, R., Mastrorocco, N., Minale, L., & Snyder, J. M. (2025). Unpacking social capital. *The Economic Journal*, *135*(667), 773–807. https://doi.org/10.1093/ej/ueae074
Eckel, C. C., Hoover, H. G., Krupka, E. L., Sinha, N., & Wilson, R. K. (2023). Using social norms to explain giving behavior. *Experimental Economics*, *26*(5), 1115–1141. https://doi.org/10.1007/s10683-023-09811-z
Eckel, C. C., & Wilson, R. K. (2004). Is trust a risky decision? *Journal of Economic Behavior & Organization*, *55*(4), 447–465. https://doi.org/10.1016/j.jebo.2003.11.003
Fehr, E., Bernhard, H., & Rockenbach, B. (2008). Egalitarianism in young children. *Nature*, *454*(7208), 1079–1083. https://doi.org/10.1038/nature07155
Fehr, E., & Charness, G. (2025). Social preferences: Fundamental characteristics and economic consequences. *Journal of Economic Literature*, *63*(2), 440–514. https://doi.org/10.1257/jel.20241391
Fehr, E., & Gächter, S. (2000). Cooperation and punishment in public goods experiments. *American Economic Review*, *90*(4), 980–994. https://doi.org/10.1257/aer.90.4.980
Fehr, E., Powell, M., & Wilkening, T. (2021). Behavioral constraints on the design of subgame-perfect implementation mechanisms. *American Economic Review*, *111*(4), 1055–1091. https://doi.org/10.1257/aer.20170297
Fehr, E., & Schmidt, K. M. (1999). A theory of fairness, competition, and cooperation. *The Quarterly Journal of Economics*, *114*(3), 817–868. https://doi.org/10.1162/003355399556151
Fischbacher, U., & Föllmi-Heusi, F. (2013). Lies in disguise—an experimental study on cheating. *Journal of the European Economic Association*, *11*(3), 525–547. https://doi.org/10.1111/jeea.12014
Fischbacher, U., Gächter, S., & Fehr, E. (2001). Are people conditionally cooperative? evidence from a public goods experiment. *Economics Letters*, *71*(3), 397–404. https://doi.org/10.1016/s0165-1765(01)00394-9
Fountain, J. E. (1998). Social capital: Its relationship to innovation in science and technology. *Science and Public Policy*, *25*(2), 103–115. https://doi.org/10.1093/spp/25.2.103

Gächter, S., Herrmann, B., & Thöni, C. (2004). Trust, voluntary cooperation, and socio-economic background: Survey and experimental evidence. *Journal of Economic Behavior & Organization*, *55*(4), 505–531. https://doi.org/10.1016/j.jebo.2003.11.006

Gächter, S., & Schulz, J. F. (2016). Intrinsic honesty and the prevalence of rule violations across societies. *Nature*, *531*(7595), 496–499. https://doi.org/10.1038/nature17160

Glaeser, E. L., Sacerdote, B., & Scheinkman, J. A. (1996). Crime and social interactions. *The Quarterly Journal of Economics*, *111*(2), 507–548. https://doi.org/10.2307/2946686

Glaeser, E. L., Sacerdote, B. I., & Scheinkman, J. A. (2003). The social multiplier. *Journal of the European Economic Association*, *1*(2-3), 345–353.

Grujić, J., Eke, B., Cabrales, A., Cuesta, J. A., & Sánchez, A. (2012). Three is a crowd in iterated prisoner's dilemmas: Experimental evidence on reciprocal behavior. *Scientific Reports*, *2*(1), 638. https://doi.org/10.1038/srep00638

Guiso, L., Sapienza, P., & Zingales, L. (2009). Cultural biases in economic exchange? *The Quarterly Journal of Economics*, *124*(3), 1095–1131. https://doi.org/10.1162/qjec.2009.124.3.1095

Guiso, L., Sapienza, P., & Zingales, L. (2011). Civic capital as the missing link. In J. Benhabib, A. Bisin, & M. O. Jackson (Eds.), *Handbook of social economics* (pp. 417–480, Vol. 1). Elsevier. https://doi.org/10.1016/B978-0-444-53187-2.00010-3

Guiso, L., Sapienza, P., & Zingales, L. (2016). Long-term persistence. *Journal of the European Economic Association*, *14*(6), 1401–1436. https://doi.org/10.1111/jeea.12177

Harbaugh, W. T., & Krause, K. (2000). Children's altruism in public good and dictator experiments. *Economic Inquiry*, *38*(1), 95–109. https://doi.org/10.1093/ei/38.1.95

Heckman, J., Pinto, R., & Savelyev, P. (2013). Understanding the mechanisms through which an influential early childhood program boosted adult outcomes. *American Economic Review*, *103*(6), 2052–2086. https://doi.org/10.1257/aer.103.6.2052

Istat. (2013). *Noi italia: 100 statistiche per capire il paese in cui viviamo: 2013*. Istituto centrale di statistica.

Jackson, C. K. (2018). What do test scores miss? the importance of teacher effects on non–test score outcomes. *Journal of Political Economy*, *126*(5), 2072–2107. https://doi.org/10.1086/699018

Jackson, C. K., Porter, S. C., Easton, J. Q., Blanchard, A., & Kiguel, S. (2020). School effects on socioemotional development, school-based arrests, and educational attainment. *American Economic Review: Insights*, *2*(4), 491–508. https://doi.org/10.1257/aeri.20200029

Karlan, D. S. (2005). Using experimental economics to measure social capital and predict financial decisions. *American Economic Review*, *95*(5), 1688–1699. https://doi.org/10.1257/000282805775014407

Kim, J., Putterman, L., & Zhang, X. (2022). Trust, beliefs and cooperation: Excavating a foundation of strong economies. *European Economic Review*, *147*, 104166. https://doi.org/10.1016/j.euroecorev.2022.104166

Kling, J. R., Liebman, J. B., & Katz, L. F. (2007). Experimental analysis of neighborhood effects. *Econometrica*, *75*(1), 83–119. https://doi.org/10.1111/j.1468-0262.2007.00733.x

Knack, S., & Keefer, P. (1997). Does social capital have an economic payoff? a cross-country investigation. *The Quarterly Journal of Economics*, *112*(4), 1251–1288. https://doi.org/10.1162/003355300555475

Kocher, M. G., Martinsson, P., Matzat, D., & Wollbrant, C. (2015). The role of beliefs, trust, and risk in contributions to a public good. *Journal of Economic Psychology*, *51*, 236–244. https://doi.org/10.1016/j.joep.2015.10.001

Kosse, F., Deckers, T., Pinger, P., Schildberg-Hörisch, H., & Falk, A. (2020). The formation of prosociality: Causal evidence on the role of social environment. *Journal of Political Economy*, *128*(2), 434–467. https://doi.org/10.1086/704386

Kosse, F., & Tincani, M. M. (2020). Prosociality predicts labor market success around the world. *Nature Communications*, *11*(1), 5298. https://doi.org/10.1038/s41467-020-19007-1

Krupka, E. L., & Weber, R. A. (2013). Identifying social norms using coordination games: Why does dictator game sharing vary? *Journal of the European Economic Association*, *11*(3), 495–524. https://doi.org/10.1111/jeea.12006

List, J. A. (2007). On the interpretation of giving in dictator games. *Journal of Political Economy*, *115*(3), 482–493. https://doi.org/10.1086/519249

Manski, C. F. (1993). Identification of endogenous social effects: The reflection problem. *The Review of Economic Studies*, *60*(3), 531–542. https://doi.org/10.2307/2298123

OECD. (2020). *How's Life? 2020: Measuring Well-being*. https://doi.org/10.1787/9870c393-en

Peysakhovich, A., Nowak, M. A., & Rand, D. G. (2014). Humans display a "cooperative phenotype" that is domain general and temporally stable. *Nature Communications*, *5*(1), 4939. https://doi.org/10.1038/ncomms5939

Putnam, R. D., Leonardi, R., & Nanetti, R. Y. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton University Press. https://doi.org/10.2307/j.ctt7s8r7

Raven, J. (2000). The Raven's Progressive Matrices: Change and stability over culture and time. *Cognitive Psychology*, *41*(1), 1–48. https://doi.org/10.1006/cogp.1999.0735

Rege, M., & Telle, K. (2004). The impact of social approval and framing on cooperation in public good situations. *Journal of Public Economics*, *88*(7-8), 1625–1644. https://doi.org/10.1016/s0047-2727(03)00021-5

Samek, A., Cowell, J. M., Cappelen, A. W., Cheng, Y., Contreras-Ibáñez, C., Gomez-Sicard, N., Gonzalez-Gadea, M. L., Huepe, D., Ibáñez, A., Lee, K., et al. (2020). The development of social comparisons and sharing behavior across 12 countries. *Journal of Experimental Child Psychology*, *192*, 104778. https://doi.org/10.1016/j.jecp.2019.104778

Schechter, L. (2007). Traditional trust measurement and the risk confound: An experiment in rural Paraguay. *Journal of Economic Behavior & Organization*, *62*(2), 272–292. https://doi.org/10.1016/j.jebo.2005.03.006

Sheldon, K. M., Sheldon, M. S., & Osbaldiston, R. (2000). Prosocial values and group assortation: Within an N-person prisoner's dilemma game. *Human Nature*, *11*(4), 387–404. https://doi.org/10.1007/s12110-000-1009-z

Tabellini, G. (2008). The scope of cooperation: Values and incentives. *The Quarterly Journal of Economics*, *123*(3), 905–950. https://doi.org/10.1162/qjec.2008.123.3.905

Thöni, C., Tyran, J.-R., & Wengström, E. (2012). Microfoundations of social capital. *Journal of Public Economics*, *96*(7-8), 635–643. https://doi.org/10.1016/j.jpubeco.2012.04.003

Volk, S., Thöni, C., & Ruigrok, W. (2012). Temporal stability and psychological foundations of cooperation preferences. *Journal of Economic Behavior & Organization*, *81*(2), 664–676. https://doi.org/10.1016/j.jebo.2011.10.006

Young, H. P. (2015). The evolution of social norms. *Annual Review of Economics*, *7*(1), 359–387. https://doi.org/10.1146/annurev-economics-080614-115322

Yuan, M., Spadaro, G., Jin, S., Wu, J., Kou, Y., van Lange, P. A. M., & Balliet, D. (2022). Did cooperation among strangers decline in the United States? a cross-temporal meta-analysis of social dilemmas (1956–2017). *Psychological Bulletin*, *148*(3-4), 129–157. https://doi.org/10.1037/bul0000363

APPENDIX

Institutional Transmission of Social Preferences

Amalia Di Girolamo, Michele Giannola, Julen Zarate-Pina

A Appendix Tables and Figures

Table A.1: Correlations of Students' Behavior Across Games

	Dictator	Public good	Die-reporting	Prisoner
Dictator	1			
Public good	0.13***	1		
Cheating	-0.072***	-0.048**	1	
Prisoner	0.319***	0.186***	-0.057***	1

Notes: The table reports pairwise correlation coefficients. * indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

Table A.2: Correlations of Teachers' Behavior Across Games

	Dictator	Public good	Prisoner
Dictator	1		
Public good	0.333***	1	
Prisoner	0.297***	0.379***	1

Notes: The table reports pairwise correlation coefficients. * indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

Table A.3: Relation between Students' and Teachers' Social Preferences with Index Computed in the Same Way for Teachers and Students

	Children's Index		
	(1)	(2)	(3)
Teachers' Index	0.083*	0.080*	0.083**
	(0.042)	(0.042)	(0.041)
Observations	2,850	2,641	2,617
Controls	N	Y	Y
Extended Controls	N	N	Y

Notes: This table reports the relation of students' social preferences with their teachers' social preferences using a symmetric social-preference index that includes only the experimental tasks observed for both students and teachers: the dictator game, the public goods game, and the prisoner's dilemma. All regressions include school fixed effects. Controls include child gender, age, grade and number of class teachers. Extended controls further include Raven scores and Big Five personality traits. Standard errors are clustered at the class level. * indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

Table A.4: Dictator Game

	Dictator	Equal split	Kept all	Gave all	Inequality
	(1)	(2)	(3)	(4)	(5)
Teachers' dictator	0.089**	0.020**	-0.019	0.001	-0.019*
	(0.040)	(0.010)	(0.013)	(0.004)	(0.010)
Mean outcome	1.667	0.264	0.378	0.037	0.580
Observations	2609	2609	2609	2609	2609
			Gave		
	>0	>1	>2	>3	>4
	(6)	(7)	(8)	(9)	(10)
Teachers' dictator	0.019	0.026**	0.028***	0.008	0.007
	(0.013)	(0.012)	(0.011)	(0.008)	(0.005)
Mean outcome	0.622	0.475	0.367	0.103	0.064
Observations	2609	2609	2609	2609	2609

Notes: This table reports the relation of students' behavior in the dictator game with their teachers' social preferences. Column 1 corresponds to column 6 of Table 3. "Equal split" is a dummy for whether the student chose a 50/50 distribution. "Kept all" is a dummy for whether the student decided to keep all tokens for themselves. "Gave all" is a dummy for whether the student decided to give all tokens to the receiver. "Inequality" measures inequality in outcomes implied by students' allocations and is computed as the absolute difference in tokens received by the sender and the receiver divided by the total number of tokens, as in Cappelen, List, Samek, and Tungodden (2020). "Gave $> X$" is a dummy for whether the child decided to give more than X tokens. All regressions include school fixed effects and controls for child gender, age, grade, number of class teachers, Raven scores and Big Five personality traits. Standard errors are clustered at the class level. * indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

Table A.5: Relation between Students' and Teachers' Social Preferences: Class-level Cheating

	Average class report		Class mean exceeds 3.5	
	(1)	(2)	(3)	(4)
Teachers' dictator	-0.117***	-0.113***	-0.012	-0.009
	(0.041)	(0.040)	(0.010)	(0.010)
Mean outcome	4.635		0.983	
Observations	186	186	186	186

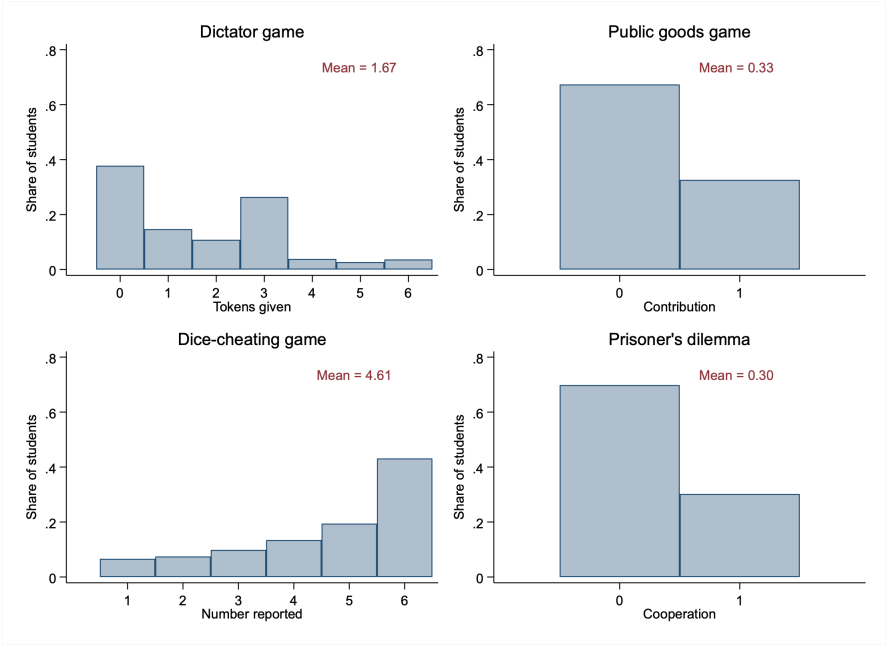
Notes: This table reports class-level regressions of students' behavior in the die-reporting game on teachers' dictator-game giving. The unit of observation is the class. In columns 1 and 2, the outcome is the average number reported by students in the class. In columns 3 and 4, the outcome is an indicator equal to one if the average class report is above 3.5, the expected value under truthful reporting with a fair die. All regressions include school fixed effects. Columns 2 and 4 control for grade and the number of class teachers. * indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

Table A.6: Relation between Students' and Teachers' Preferences by Age

	Students' Index
High teacher social preferences	0.014
	(0.124)
Age 8	-0.195*
	(0.099)
Age 9	-0.300***
	(0.107)
Age 10	-0.436***
	(0.125)
High teacher x Age 8	0.073
	(0.151)
High teacher x Age 9	0.136
	(0.156)
High teacher x Age 10	0.341*
	(0.184)
Observations	2645

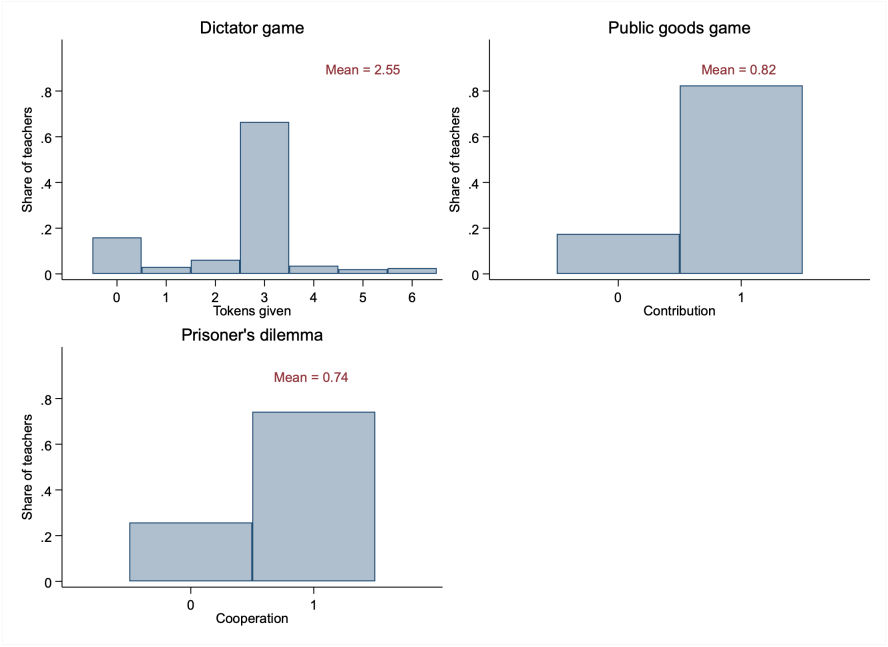
Notes: This table reports estimates from regressions of students' social preferences on teachers' social preferences, interacted with students' age. The outcome variable is an index derived aggregating the outcomes of the individual games (as described in section 2.3.1). Teachers' social preferences are measured using the indicator for being in the high-social-preference group used in Figure 2. The omitted category is age 7 students taught by teachers in the low-social-preference group. The coefficient on "High teacher social preferences" therefore gives the difference between high- and low-social-preference teachers at age 7, while the interaction terms give the additional difference at each older age relative to age 7. The age-specific differences reported in Figure 2 are the corresponding linear combinations of the coefficients in this table. All regressions include school fixed effects, child gender, and the number of class teachers. Standard errors are clustered at the class level. * indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

Figure A.1: Students' Behavior



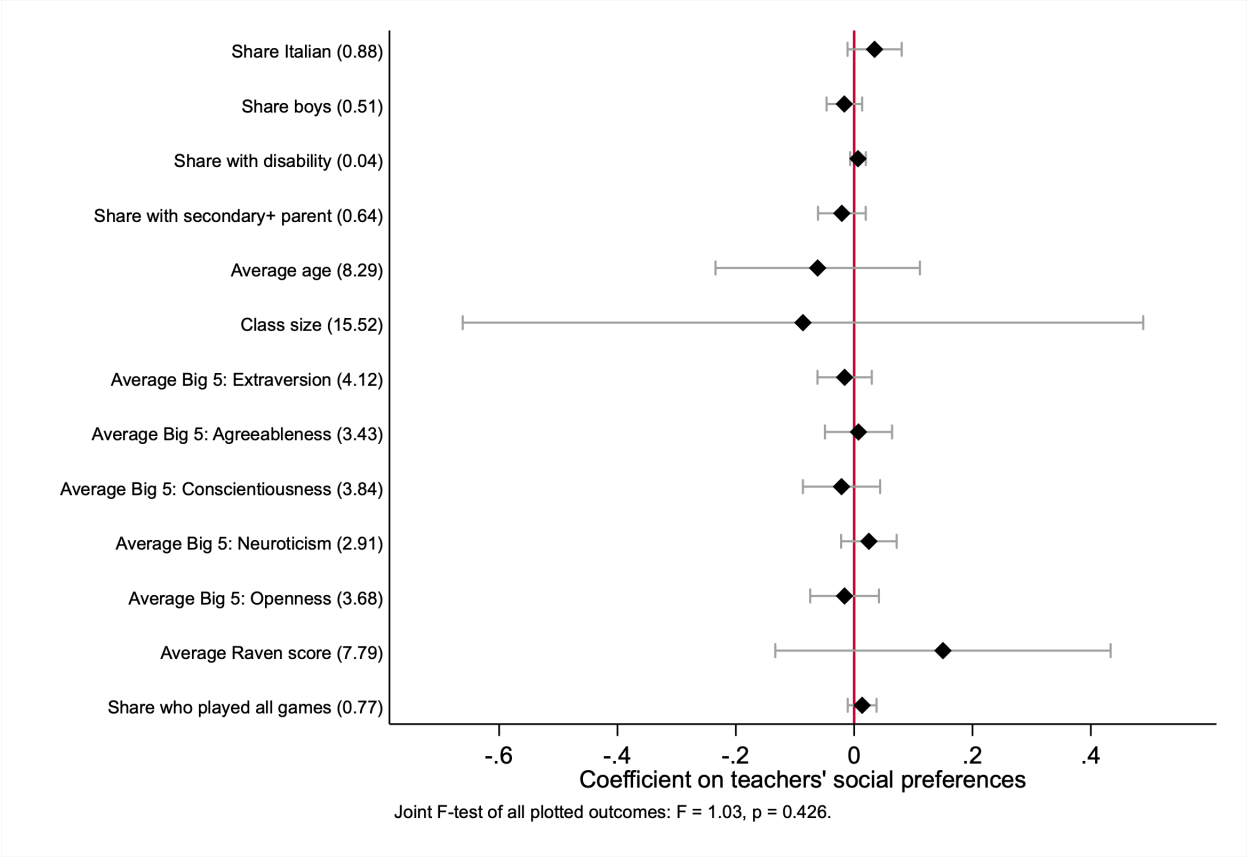
Notes: This figure plots the distribution of students' behavior in the incentivized experiments.

Figure A.2: Teachers' Behavior



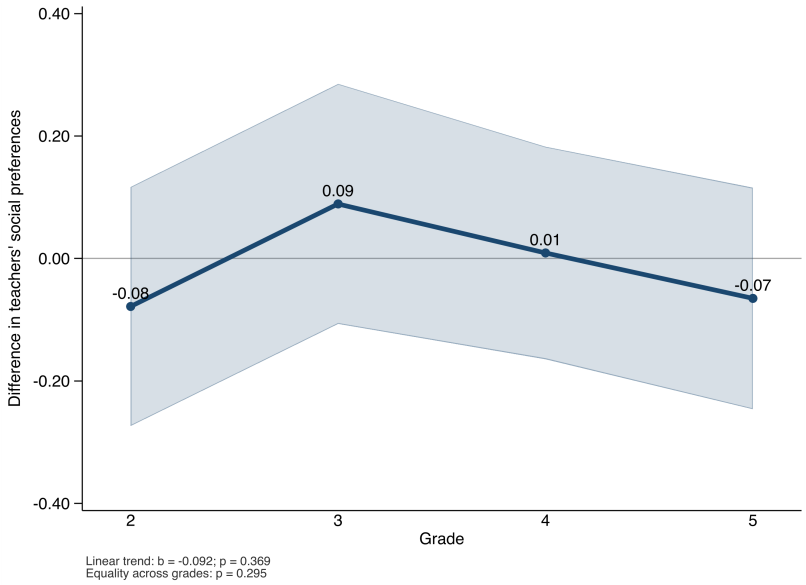
Notes: This figure plots the distribution of teachers' behavior in the incentivized experiments.

Figure A.3: Assignment of Students to Teachers: Class-Level Balance



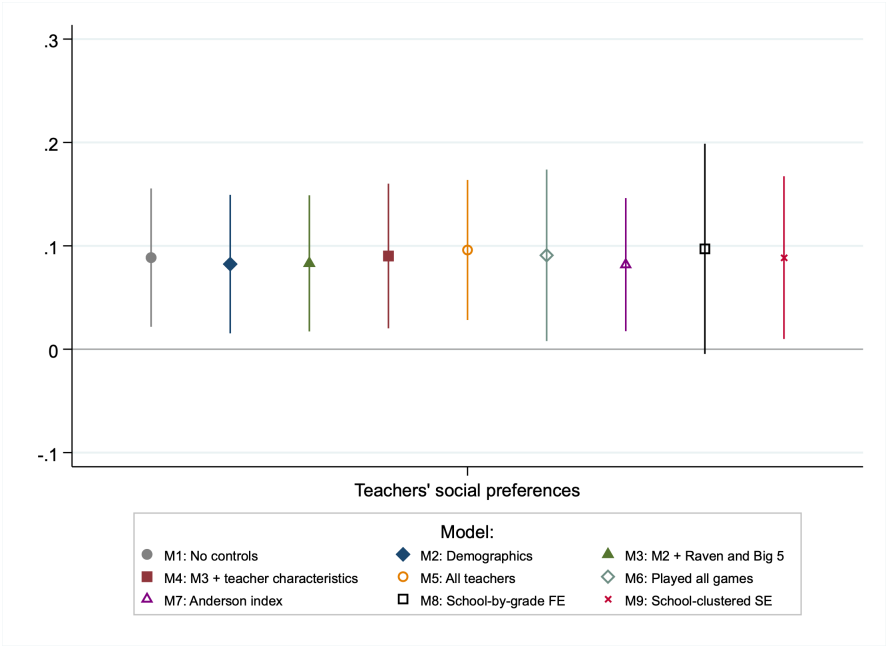
Notes: This figure plots the coefficients of a regression of students' characteristics averaged at the class level on teachers' social preferences. Each coefficient corresponds to a separate regression for each outcome. Teachers' social preferences are measured with the "Social Preferences Index" described in Section 2.3.1. All regressions include school fixed effects. Outcome means are reported in parentheses next to each outcome label. The joint F-test tests whether all plotted characteristics jointly predict teachers' social preferences; its p-value is reported in the figure.

Figure A.4: Co-Teacher Differences in Social Preferences by Shared Exposure



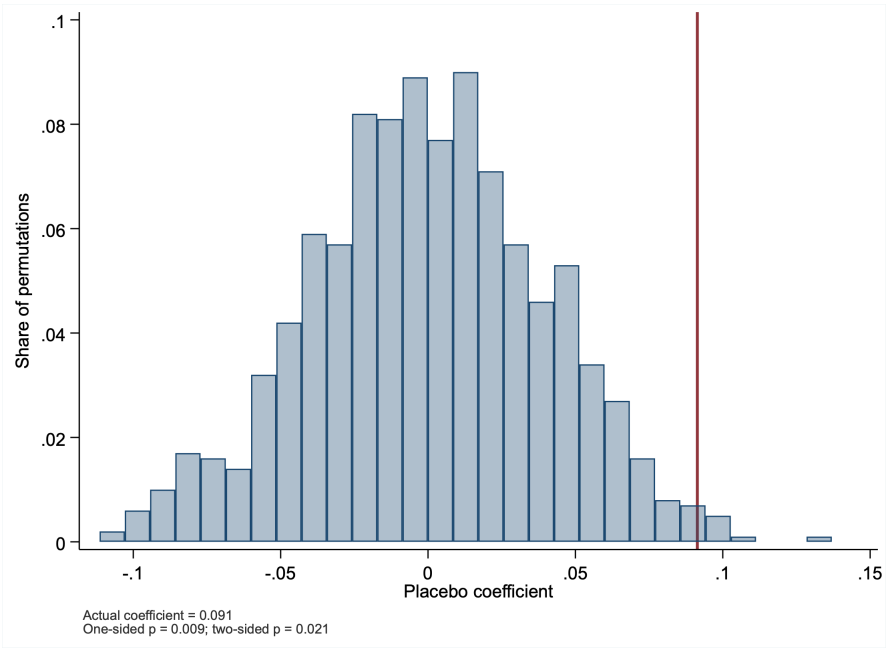
Notes: This figure plots the average difference in social preferences between main co-teachers by years of shared exposure to the same class. For each class, we form unique pairs of teachers and compute the absolute difference between their standardized social-preference indices, and plot this difference by years of shared exposure. All estimates control for school fixed effects. The shaded area reports 95 percent confidence intervals.

Figure A.5: Relation between Students' and Teachers' Social Preferences - Robustness



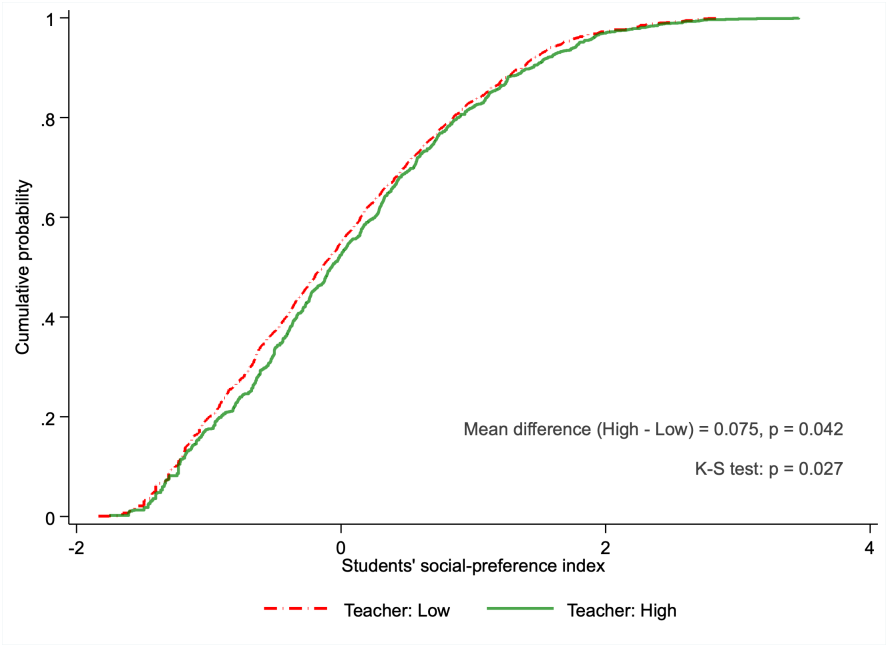
Notes: This figure plots the relation between students' and teachers' social preferences. The outcome variable is an index of children's social preferences (as defined in Section 2.3.1). M1 to M3 correspond to the point estimates reported in columns 1-3 of Table 3. M1 corresponds to a model that only controls for school fixed effects. M2 also includes the following control variables: child gender, age, grade and number of class teachers. M3 also controls for children's Raven scores and Big Five personality traits and M4 includes controls for teachers' experience and education. In M5, we include the social preferences of all teachers assigned to a particular class (instead of including only the main teachers). M6 restricts the estimation sample to students that played all four games. In M7 the index of social preferences is constructed using the procedure described in Anderson (2008). M8 includes school-by-grade fixed effects. M9 reports the baseline specification (M1) with standard errors clustered at the school level.

Figure A.6: Permutation Test



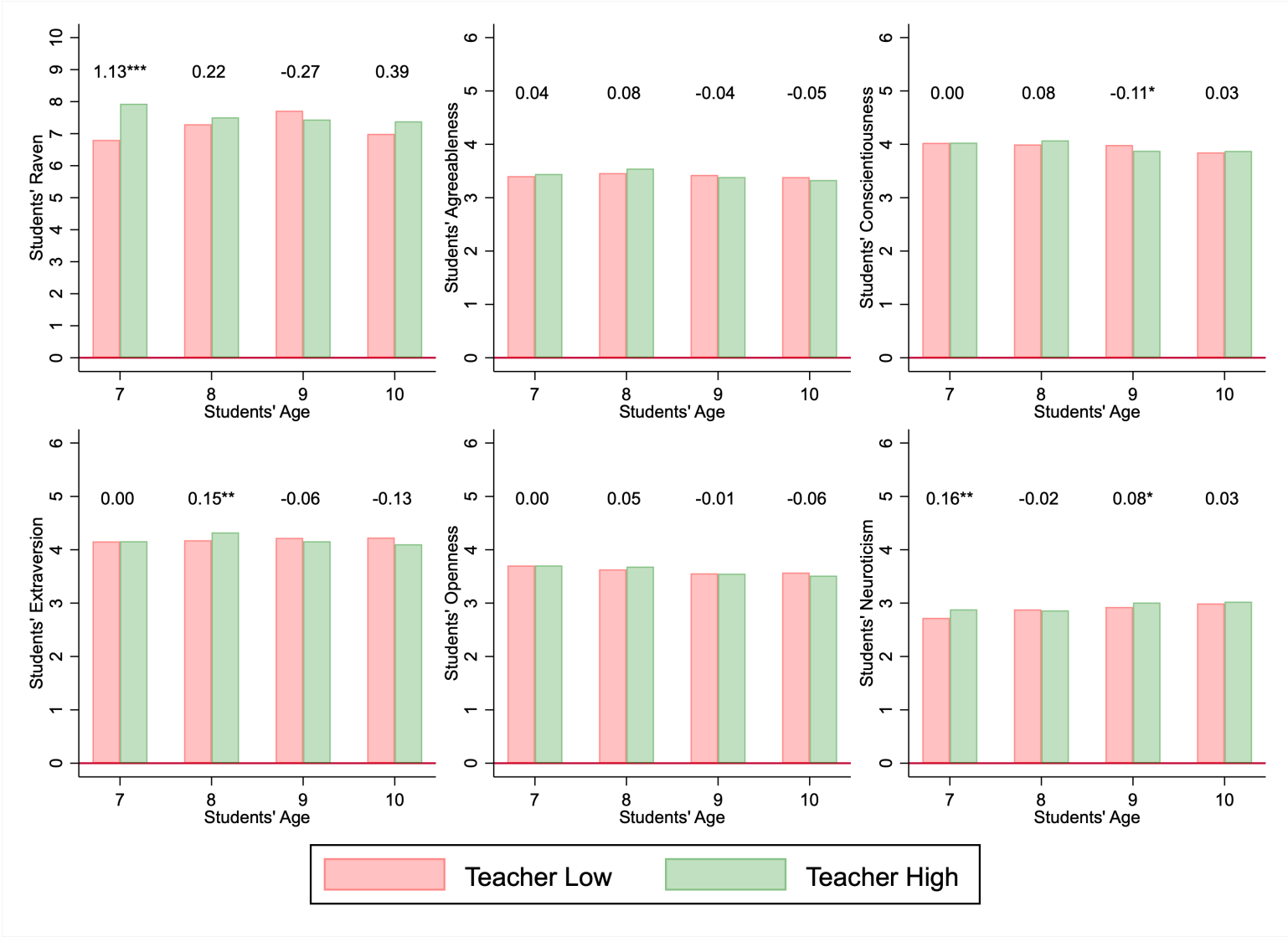
Notes: This figure plots the distribution of coefficients obtained from 1,000 placebo regressions. In each permutation, the observed teachers' social-preference index is randomly reassigned across classrooms within the same school. Each regression uses the same estimation sample and specification as column 3 of Table 3. The red vertical line marks the coefficient obtained using the actual teacher-classroom assignment (0.091, column 3 of Table 3). The one-sided p-value is the proportion of placebo coefficients at least as large as the observed coefficient; the two-sided p-value is the proportion at least as large in absolute value.

Figure A.7: CDF of Students' Preferences by Teacher's Type



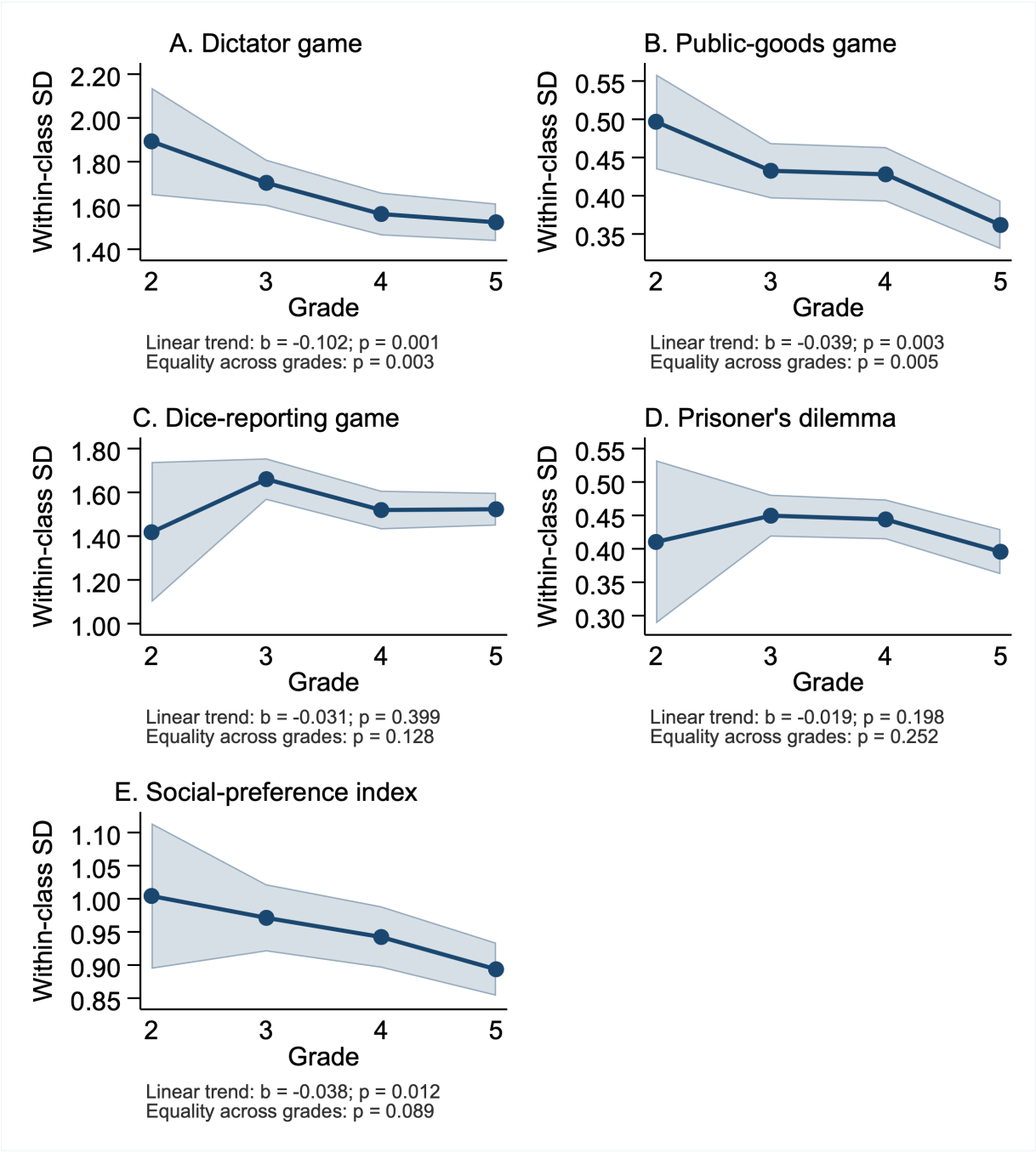
Notes: This figure plots the cumulative distribution function (CDF) of students' social preferences index by teachers' social preferences. We classify teachers as having "low" or "high" social preferences based on whether their score falls below or above the median. We test the equality of means across the two groups and report the difference in means and its associated p-value. We also perform the two-sample Kolmogorov-Smirnov (KS) two-tailed test for equality of distributions and report its associated p-value.

Figure A.8: Students' Raven and Big Five Scores by Teachers' Social Preferences and Age



Notes: This figure plots students' Raven scores and Big Five personality traits by age, separately for students taught by teachers with "low" versus "high" social preferences. Social preferences are measured with the index described in Section 2.3.1. Teachers are classified based on whether their score falls below or above the median. For each age and outcome, the figure shows: (i) the average level of the outcome for the two groups (red for students of low social preference teachers, green for students of high social preference teachers); (ii) the difference in means between the groups; and (iii) the statistical significance of the difference. All regressions include school fixed effects and controls for child gender and number of class teachers. Standard errors are clustered at the class level.* indicates 10% significance, ** indicates 5% significance, and *** indicates 1% significance.

Figure A.9: Within-Class Dispersion in Students' Social Preferences by Grade



Notes: This figure plots within-class dispersion in students' social preferences across grades, and each panel corresponds to a different outcome. Each classroom contributes one observation. The plotted estimates are obtained from regressions of the classroom-level standard deviation on grade indicators, including school fixed effects. The shaded areas report 95% confidence intervals. Each panel also reports the coefficient and p-value from a specification in which grade enters linearly (linear trend), as well as the p-value from a joint test that dispersion is equal across grades (equality across grades).