Economic Inequality, Social Capital and the Role of Merit and Luck: An Experimental Study

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Abstract

Research consistently links inequality to lower social capital, the networks, norms, and trust that facilitate cooperation. Yet not all inequality is perceived the same: people are generally more accepting of inequality arising from merit than from luck. This study investigates whether the negative effect of unequal environments on social capital depends on the source of inequality – merit or luck. Using trust, prisoner's dilemma, and stag-hunt games, we find that inequality, regardless of its source, reduces trustworthiness and undermines coordination to the payoff-dominant outcome in the stag-hunt game. Notably, luck-based inequality results in higher trust compared to merit-based inequality, even though participants perceive meritocratic allocations as fairer.

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1. Introduction

Economic inequality is a key concern for academics, policymakers, and the general public alike (Champernowne, 1973; Pickett & Wilkinson, 2010, 2019; Piketty, 2014, 2020; Stiglitz, 2012). The World Inequality Report (2022) reveals that the bottom half of the global population earns less than the top 0.1 per cent. The wealth gap is even more striking, with the richest 0.1 per cent owning nearly ten times as much as the poorest half. Empirical research consistently links high inequality to adverse outcomes like poverty (Marrero & Servén, 2022), crime (e.g., Nivette, 2011; Stucky et al., 2016), mental health issues (Ribeiro et al., 2017), worse heart health (Dewan et al., 2019), and lower life expectancy (Babones, 2008; Pickett & Wilkinson, 2015) among others.

Beyond its direct connection with material well-being, economic inequality has the potential to undermine broader societal constructs like social capital: the networks, norms, and trust that enable individuals to act together more effectively to pursue shared objectives (Putnam, 1995, p. 67). Studies consistently find an inverse correlation between inequality and social capital as measured by trust (e.g., Barone & Mocetti, 2016; Kawachi et al., 1997; Knack & Keefer, 1997; Ram, 2013) or voluntary contributions to public goods (e.g., Cherry et al., 2002; Hargreaves Heap et al., 2015). Strong social capital offers significant economic benefits, such as fostering economic growth, improving investment outcomes, and enhancing governmental efficiency (Knack & Keefer, 1997; Whiteley, 2000). Moreover, social capital plays a crucial role in mediating the relationship between inequality and various adverse social and health outcomes (Delhey & Dragolov, 2014; Elgar, 2010; He et al., 2021; Kragten & Rözer, 2017; Layte, 2012; Layte et al., 2019; Mackenbach et al., 2016; Rözer et al., 2016).

A separate strand of research explores the role of fairness perceptions in shaping people's acceptance of inequality. Inequalities arising from merit – e.g., differences in effort or performance – are perceived as fairer and, thus, more acceptable than those stemming from chance (Almås et al., 2020; Cappelen et al., 2013, 2020; Fong, 2001; Konow, 2000; Starmans et al., 2017). Yet it remains unclear whether these differences in attitudes translate into different behaviours that shape social capital. If individuals knowingly operate in a meritocratic environment rather than one where outcomes are driven by luck, does it affect their willingness to engage in activities that build social capital? Answering this question is crucial for understanding how perceptions of fairness modulate the effects of inequality on social capital and whether differences in perceptions necessarily translate into differences in behaviour.

This study aims to tackle two key questions. First, how does inequality, regardless of its source, shape behaviour in ways that affect social capital? Second, does the source of inequality, whether based on merit or luck, alter these effects? Establishing causal relationships in this context requires identifying exogenous variation in both inequality levels and its underlying sources, which is not always feasible with observational data. To address this limitation, we conducted an online experiment that allowed us to isolate the causal effects of inequality and its source on trust, cooperation, and coordination – key elements of social capital.

We structured our experimental design around treatment groups with either an equal or unequal distribution of initial endowments. In the unequal treatments, participants were split in two categories: one group with lower initial endowments (which we refer to as *"poor"* for simplicity) and another with higher endowments (*"rich"*).[1] The key variation lay in how these inequalities were determined. In the merit-based unequal condition, participants earned their endowments through performance on a real-effort task and knew this to be the case. In the luck-based unequal condition, participants completed the same real-effort task, but were informed that endowments were randomly assigned and unrelated to their performance. To establish benchmarks, we included two equal-endowment control treatments. In one, all participants received the same high endowment as the *rich* in the unequal treatments; in the other, all received the same low endowment as the *poor*. Control group participants completed the same real-effort task but were informed that everyone in their treatment received the same endowment independent of task performance. All participants knew how endowments were allocated in their treatment group but were blind to other treatments.

After participants were allocated to the four treatment groups – high-endowment equal, low-endowment equal, merit-based unequal or luck-based unequal – they participated in three paired economic games. These included the trust game (Berg et al., 1995), which is essentially a sequential move variant of the prisoner's dilemma game; and two simultaneous move games, the stag-hunt game (Cooper et al., 1992) and the prisoner's dilemma. These games were chosen to measure core dimensions of social capital: trust, trustworthiness, coordination, and cooperation (Putnam et al., 1994). While in the equal treatments, pairings occurred exclusively between participants with symmetric endowments (i.e., *rich* paired with *rich* and *poor* with *poor*), the unequal treatments allowed for both symmetric and asymmetric pairings (i.e., *rich* paired with *poor* and vice versa).

Our analytical strategy proceeded in two stages. First, we examined how inequality, per se, affected behaviour by comparing outcomes between the equal and unequal treatments. Second, we explored differences in behaviour between the two unequal treatments depending on whether the inequality arose from merit or luck. Crucially, in all cross-treatment comparisons, we held pairings (and therefore endowments) constant to isolate the treatment effect.

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[1] Our use of the words "rich" and "poor" is for expositional ease and designated to be shorthand for "those endowed with 100 tokens" and "those endowed with 50 tokens" respectively. We refrained from using *rich* and *poor* in the instructions. The participants only know whether they have 50 or 100 tokens.

To understand the first comparison between equal and unequal treatments, suppose a poor individual interacts solely with other poor individuals in a uniformly poor environment with no inequality. In the second, the same interaction occurs, but within a society that also includes contact with rich individuals, making inequality salient. Would behaviour change despite the identical poor-poor pairing across these two societies? We pose the same question for the rich: does a rich-rich interaction lead to different outcomes when situated in an unequal versus an equal society? By holding pairings fixed and varying only whether the relevant society is equal or unequal, we avoid any potential confounds and isolate the effect of inequality.[2] To implement this, we pool results from both the merit and luck-based unequal treatments, and compare these with the equal treatments, holding pairings constant. We find that in the unequal treatments, even when participants with identical endowments interacted, they displayed lower trustworthiness in the trust game and reduced coordination toward the payoff-dominant equilibrium in the stag-hunt game. This pattern holds for both the *rich* and the *poor* in the stag-hunt game but in the trust game, the decline in trustworthiness was evident predominantly among the *rich*.

In our second comparison, we examined whether the source of inequality, merit or luck, shaped behaviour in meaningful ways. Here, we analysed all four pairing types – *rich-rich*, *rich-poor*, *poor-rich* and *poor-poor* – and asked whether behaviour varied between merit-based and luck-based unequal societies, holding the pairing type constant. While prior experimental studies have documented how unfair inequality affects trust (e.g., D. Fehr, Rau, et al., 2020; Rodrigo-González et al., 2021), disentangling the effects of inequality from perceptions of unfairness has proven challenging, as these factors are often conflated. By isolating the source of inequality while keeping the degree of inequality unchanged, our study provides a novel perspective. We find that, overall, the source of inequality has limited influence on behaviour except that trust levels were higher under luck than merit, especially in *rich-poor* pairings. This finding is striking as participants consistently rated merit and egalitarian systems as fairer than luck; yet perceived fairness did not translate into greater trust, revealing a disconnect between fairness perceptions and trusting behaviour. One possible explanation is that merit-based inequality fosters a stronger sense of entitlement, while luck-based inequality may encourage cooperation as a compensatory response to perceived unfairness. We elaborate on this later after presenting our results.

Our findings contribute to the broader literature on inequality and social capital by demonstrating that while merit-based inequality is often perceived as fairer than luck-based

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[2] In comparing behaviour across equal and unequal societies, we restrict our analysis to symmetric pairings – *rich-rich* and *poor-poor* – since equal societies, by design, are either uniformly *rich* or uniformly *poor* and thus contain no asymmetric pairs (*rich-poor* or *poor-rich*).

inequality, it does not necessarily foster stronger trust. Our results further reveal that both merit-based and luck-based inequalities, when taken together, weaken trustworthiness and coordination, reinforcing the need for policies that mitigate inequality to support long-term economic stability and social cohesion. The paper proceeds as follows. Section 2 presents a selective literature review and the hypotheses motivated by it; Section 3 details the experimental design and procedures; Section 4 presents the results of our experiment; and Section 5 offers concluding remarks.

2. Literature Review and Research Hypotheses

We begin by exploring current research on the relationship between inequality and social capital. Next, we look at the literature on the impact of the source of inequality on people's fairness preferences and social capital. On the basis of this review, we generate our testable hypotheses.

2.1. Relationship between Inequality and Social Capital

Putnam (1995, p. 67) defined social capital as "features of social organisation, such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit." Trust and cooperation are essential pillars of social capital, with a reciprocal relationship: trust fosters cooperation, and cooperation reinforces trust (Putnam, Leonardi, and Nanetti 1994, p. 171). Evidence indicates that social capital plays a critical role in mediating the effects of inequality on individual health and well-being (Delhey & Dragolov, 2014; Elgar, 2010; He et al., 2021; Kragten & Rözer, 2017; Layte, 2012; Layte et al., 2019; Mackenbach et al., 2016; Rözer et al., 2016). Additionally, robust social capital contributes to economic benefits by driving growth, enhancing investment returns, and improving government efficiency (Knack & Keefer, 1997; Whiteley, 2000). Understanding how inequality affects social capital is, therefore, crucial.

Empirical studies consistently show a negative correlation between income inequality and trust, a key component of social capital (e.g., Barone & Mocetti, 2016; Kawachi et al., 1997; Knack & Keefer, 1997; Ram, 2013). Yang & Konrath's (2023) meta-analysis, synthesising 100 studies with over 2.5 million observations, confirmed a weak but significant negative correlation between inequality and prosocial behaviour, often used as a proxy for social capital. However, using observational data to establish causality and detect its direction is challenging as the variables cannot be randomly assigned, making it difficult to rule out biases like confounding, reverse causality, omitted variables or simultaneity (Angrist & Pischke, 2010). Moreover, most empirical studies that rely on survey questions to measure trust are often criticised for their ambiguity and failure to capture actual behaviour (Glaeser et al., 2000).[3] Economic experiments address these issues by randomising key variables and using salient incentives to measure trust as a behaviour, allowing for more accurate causal inferences (Camerer, 2015; Camerer & Hogarth, 1999; Chaudhuri, 2009; Falk & Heckman, 2009).

Studies using the trust game (Berg et al., 1995) have been central to experimentally examining how inequality impacts trust and trustworthiness, key components of social capital.[4] Anderson et al. (2006) found that trust declined when participants were privately aware of income inequality in the form of asymmetric show-up payments, though trustworthiness remained unaffected. In a repeated trust game with cumulative wealth, Greiner et al. (2012) showed that inequality led to lower initial trust compared to equal societies, where trust started higher but gradually declined over time. Hargreaves Heap et al. (2013) explored the effects of endowment inequality on trust in both the trust game and the labour market game (E. Fehr et al., 1993), finding that inequality, especially when income differences were visible, undermined trustworthiness in both games, and reduced trust more significantly in the labour market setting. D. Fehr, Rau, et al. (2020) similarly found that unfair inequality, created through performance-based payments that rewarded winners and made it harder for others to catch up, diminished both trust and trustworthiness. Xiao & Bicchieri (2010) examined how inequality aversion affects reciprocity in the trust game. Their results showed that second movers display lower trustworthiness when initial endowments were asymmetric, suggesting that the desire for equality can outweigh tendencies toward reciprocity.

While most research has focused on trust and trustworthiness, cooperation in social dilemma games, where individuals must choose between the common good and their self-interest, also serves as a useful proxy. In this study, we look at two measures of cooperation: the prisoner's dilemma game and a stag-hunt game. The games differ in their equilibrium predictions: while the prisoner's dilemma has a unique Nash equilibrium where both players defect, the stag-hunt gives rise to two possible equilibria: one in which both players cooperate, and another in which both refrain from cooperating. However, the games are similar in respect to what is important for our purposes. Mutual cooperation is socially optimal in both games, but it requires that a player must trust that the other will also cooperate (Skyrms, 2003, p. 3). Further, Rabin (1993) suggests that with reciprocal preferences, a prisoner's dilemma resembles a stag-hunt game.[5] Skyrms (2001)

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[3] For example, the question, "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" from the General Social Survey is commonly used to measure trust (Glaeser et al., 2000).

[4] See Xu & Marandola (2023) for a review of experimental studies exploring the relationship between inequality and trust.

[5] Another game that is commonly employed to measure and study cooperation is the public goods game, which is a multi-player prisoner's dilemma, typically with discrete choices. See Chaudhuri (2011) for a survey of research on public goods games. For this study, we decided to confine our attention to the three games played in pairs.

argues that many social processes have the features of a stag-hunt game where the key issue is coordinating to the payoff dominant outcome, which requires mutual trust among players.

Studies have shown that cooperation is more challenging in asymmetric prisoner's dilemma games, where payoffs are unequal, compared to symmetric scenarios with equal payoffs (Ahn et al., 2007; Sheposh & Gallo, 1973).[6,7] However, these studies compare scenarios with different payoff matrices, making it difficult to disentangle whether observed behavioural changes result from inequality per se or from altered incentives. To our knowledge, there has been limited exploration of how behaviour varies when the payoff structure itself remains constant, but the context generating inequality changes – for instance, whether inequalities stem from meritocratic or luck-based factors. This omission leaves a gap in our understanding of how contextual framing of economic inequality shapes cooperative behaviour. Moreover, this gap is even more pronounced in the context of stag-hunt games, where inequality remains an underexplored dimension. The above discussion brings us to our first hypothesis:

Hypothesis 1: Holding pairings (and therefore endowments) constant, inequality erodes social capital relative to equality. Specifically, compared to equal societies in which all participants receive identical endowments (either 50 or 100 tokens), we expect that in unequal societies (regardless of whether the inequality arises from luck or merit), both *rich-rich* and *poor-poor* pairings will exhibit:

a) lower levels of trust and trustworthiness in the trust game,
b) lower rates of coordination to the payoff dominant equilibrium in the stag-hunt game, and
c) lower rates of cooperation in the prisoner's dilemma game.

2.2. Source of Inequality, Fairness and Inequality Tolerance

Starmans et al. (2017) highlighted a discrepancy between laboratory data showing evidence of inequity aversion (Bolton & Ockenfels, 2000; E. Fehr & Schmidt, 1999) and field data that suggests people prefer inequality if it is perceived as fair. In typical lab designs, participants begin with equal endowments, which makes unequal outcomes appear unfair. Yet, in real-world settings, fairness judgments hinge more on merit, leading individuals to accept, and even defend, inequality that stems from effort rather than luck. This 'unfairness aversion' explains why individuals accept inequality and resist redistribution when wealth differences are attributed to merit rather than luck

[6] The asymmetric prisoner's dilemma modifies the standard prisoner's dilemma payoff matrix so that one player can earn more than the other, even when both cooperate. This asymmetry enables researchers to identify cooperation and defection patterns and predict how players behave under unequal conditions.
[7] Experimental research shows that inequality negatively affects cooperation in public goods games too. For instance, Cherry et al. (2005), Reuben & Riedl (2013), Hargreaves Heap et al. (2015) and Martinangeli (2021) find that when group members have unequal endowments, their contributions to the public good decrease compared to scenarios where endowments are equal.

(Alesina & Angeletos, 2005; Alesina & Giuliano, 2011; Alesina & La Ferrara, 2005; Fong, 2001; Konow, 2000). Numerous experiments reinforce this merit-based view, showing a pronounced preference for inequality arising from effort rather than chance (Almås et al., 2020; Cappelen et al., 2007, 2013, 2022, 2023; Mollerstrom et al., 2015; Rustichini & Vostroknutov, 2014).

Most of these studies measure inequality tolerance by examining how willing individuals are to redistribute earnings based on whether observed income gaps emerge from merit or luck. Their findings show that people are relatively unbothered by inequalities that reflect genuine effort, yet they become more inclined to redistribute when luck drives those disparities (Almås et al., 2020; Cappelen et al., 2013, 2022, 2023). This preference for effort-based inequality may have evolutionary origins: research on children and non-human primates demonstrates that they, too, favour rewarding effort rather than simply dividing resources equally (Baumard et al., 2012; Brosnan & de Waal, 2003, 2014; Dindo & De Waal, 2007; Hamann et al., 2014; Kanngiesser & Warneken, 2012).

We argue that it is crucial to distinguish between social capital (encompassing aspects like trust, cooperation, and prosociality) and the willingness to accept inequality, as captured by redistribution choices. Trust and cooperative behaviour manifest in contexts far beyond redistributing income, such as when individuals share information, lend resources, or collaborate on group tasks. Although it is intuitive to expect that people would be more trusting under systems they perceive as fairer, this is not necessarily the case: one may accept merit-based pay disparities as fair, while still harbouring distrust or reluctance to help. An aversion to unfair inequality helps us understand when people object to certain income gaps, yet, it does not fully capture how trusting they are toward one another. Thus, even though the broader literature on inequality acceptance shows how the source of inequality (luck versus effort) shapes fairness judgments and influences the acceptance of disparities, they leave an important question unanswered: how do these perceptions affect broader societal outcomes such as trust and cooperation?

D. Fehr, Müller, et al. (2020) examined the impact of unfair inequality on trust and trustworthiness using a two-stage experiment. In the first stage, participants took part in a real-effort task under two different payment schemes: piece-rate and relative-payment, where the latter introduces elements of both inequality and unfairness through competitive pay and time bonuses that advantage early winners. In the second stage, participants played the Berg et al. (1995) two-player trust game. They found that the relative-payment scheme, exhibiting higher inequality and perceived unfairness, significantly reduced trust and trustworthiness compared to the piece-rate scheme, suggesting that unfair inequality erodes social capital. Similarly, Rodrigo-González et al. (2021) found that trust, though not trustworthiness, was lower when initial endowments were based on effort, a setup that created inequality, than in a baseline treatment where everyone received the same endowment. Further, in the effort-based treatment, participants were more trusting of those with higher endowments, suggesting that they regarded past effort as a signal of reliability.

While both studies suggest that unfair inequality undermines key aspects of social capital, they face challenges in fully isolating the effects of unfairness from inequality, as their treatments produced both unequal and unfair outcomes. Our study addresses this gap by comparing a fair, merit-based system with an unfair, luck-based system, while keeping inequality levels constant. Moreover, rather than examining how individuals behave when interacting with others of similar or different wealth, we focus on the broader effects of being embedded in unequal environments. Everyone interacts under the same pairing conditions, but the origin of inequality (merit versus luck) varies across treatments. Finally, we extend our analysis beyond the trust game to the prisoner's dilemma and the stag-hunt game, with each participant engaging in all three games, to measure the impact of the source of inequality on both social trust and cooperation. This line of inquiry informs our second hypothesis:

Hypothesis 2: Holding pairings (and therefore endowments) constant, social capital is stronger under merit-based inequality than under luck-based inequality. Specifically, compared to the luck-based unequal condition, in the merit-based unequal condition, all relevant pairs of participants, namely *rich-rich*, *rich-poor*, *poor-rich* and *poor-poor*, will exhibit:

a) higher levels of trust and trustworthiness in the trust game,
b) higher rates of coordination to the payoff dominant equilibrium in the stag-hunt game, and
c) higher rates of cooperation in the prisoner's dilemma game.

3. Experimental design and procedures

3.1. Real effort task

The experiment proceeded in two parts. In Part 1, participants engaged in a real effort "encryption task" requiring cognitive effort (Erkal et al., 2011). Participants had three minutes to convert as many random strings of three letters as possible to numeric codes using an "encryption table" with a set of unique numbers corresponding to each letter of the alphabet. Participants received a piece rate of 10 tokens per correct code submitted, with no deductions for errors.[8] To avoid potential wealth effects, participants were informed of their real-effort task score and earnings from Part 1 only at the end of the entire experiment. While participants knew the study involved two parts,

[8] Refer to Appendix C for screenshots of the instructions based on the four treatment groups.

they received instructions for Part 1 alone, with no indication of what Part 2 would entail or whether their performance or earnings would matter in later parts.

3.2. Treatments

Following the real-effort task, participants were randomly assigned to one of four treatment groups using a between-subjects design: *Equal-Poor*, *Equal-Rich, Unequal-Luck* and *Unequal-Merit*. Each participant received an endowment of either 50 tokens (*poor*) or 100 tokens (*rich*), a status that remained fixed throughout the experiment. Treatments differed in whether there was inequality between participants and, if so, how such inequality was generated.

In the equal treatments, all participants received uniform token endowments, either 50 or 100 tokens. In *Equal-Poor* (*Equal-Rich*), each participant was endowed with 50 tokens (100 tokens). In *Unequal-Luck*, half the participants were randomly chosen to be endowed with 50 tokens, while the other half were assigned 100 tokens, regardless of any effort displayed in the real-effort task. In *Unequal-Merit*, endowments were linked to performance in the real-effort task performed in Part 1. Participants who scored above 19 (i.e., the median score established from the pilot data), received 100 tokens, whereas those scoring equal or below this threshold were allocated 50 tokens. In both the *Equal* treatments and the *Unequal-Luck* treatment, performance in the real-effort task had no bearing on subsequent endowments. However, unlike the *Unequal* treatments, participants in the *Equal* treatments knew they would receive identical endowments and interact solely with others of the same status. Thus, they were not exposed to asymmetric interactions, in contrast to their counterparts in the *Unequal* treatments.

Participants remained in their assigned treatment group throughout the experiment. While we informed them about their treatment's endowment allocation process, we did not disclose the existence of other treatment groups. For payments, tokens were converted at a rate of 250 tokens to £1. To determine individual earnings, we formed participant pairs ex post by using the strategy method (Brandts & Charness, 2000; Mitzkewitz & Nagel, 1993). Accordingly, participants submitted their responses to each game at the outset, which we later matched with the decisions of others within their respective treatment. See Figure 1 for an overview of the experimental design.

Figure 1 Overview of the experimental design showing assignment to treatment groups. Part 1 consists of the real effort task. Part 2 includes the three games presented in random order. A questionnaire is administered at the end of the session.

3.3. Economic games

Once participants were assigned to the four treatments, they proceeded to Part 2 of the experiment, where they played the trust game, the stag-hunt game and the prisoner's dilemma. The games were presented in random order to minimise order effects. In the *Equal-Rich* treatment, *rich* participants (endowed with 100 tokens) engaged in the games paired with other *rich* participants (i.e., *rich-rich* pairs), and similarly, in the *Equal-Poor* treatment, *poor* participants (endowed with 50 tokens) were paired with other *poor* participants (*poor-poor* pairs). Thus, in both equal treatments, endowments were homogeneous, allowing only symmetric pairings. In contrast, the two unequal treatments included both symmetric and asymmetric pairings. Participants in the *Unequal-Merit* and *Unequal-Luck* treatments played each game twice, once when paired with a peer of the same endowment (i.e., *rich* interacting with *rich* and *poor* with *poor*) and once with a peer of a different endowment level (i.e., *rich* interacting with *poor* and vice versa). As a result, participants in the unequal treatments made twice as many decisions as those in the equal treatments, with the sequence of symmetric and asymmetric pairings randomised.[9] Crucially, in all cross-treatment comparisons, we hold pairings (and therefore endowments) constant, allowing us to isolate the treatment effect from potential confounds.

[9] It is also possible to draw explicit comparisons between symmetric and asymmetric pairings. We are pursuing these analyses in ongoing work.

3.3.1. Trust game

This is a two-player sequential move game. The first mover could transfer a share of their endowment, in increments of 10 tokens, to the second mover. The experimenter then tripled this transferred amount. The second mover could return any share of this tripled amount back to the first mover. At this point, the game ended.[10,11] In our study, each participant acted as both the first and the second mover. As first movers, they decided how much of their endowment to send to the second mover in increments of 10% of their total endowment (e.g., 0, 5, 10, 15, … etc. if the endowment was 50; or 0, 10, 20, 30, … etc. if the endowment was 100). This amount served as a proxy for the first movers' trust.

For the second mover's decision, we used the strategy method: participants indicated how much they would return, conditional on each possible tripled amount they could receive from the first mover. From these responses, we calculated each participant's average return rate. This average proportion served as an individual-level measure of trustworthiness. The subgame perfect Nash equilibrium, derived through backward induction, is for the second mover to return zero, and, anticipating this, the first mover to send zero.

3.3.2. Stag-hunt game and the Prisoner's Dilemma

In the stag-hunt game, participants simultaneously chose to either 'invest' or 'keep' their tokens. Mutual 'investment' resulted in higher payoff for both while mutual 'keeping' maintained the status quo of endowments. Table 1 shows the potential payoffs for all possible interactions categorised according to the participants' token endowments. In each game, the {Invest, Invest} outcome is payoff dominant.

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[10] Participants first underwent a series of comprehension checks to confirm their understanding of the task. We presented an example scenario between a first and second mover and queried the participants on the potential earnings outcome. Participants could advance to the actual decision-making stage once they correctly answered the comprehension checks.

[11] In the *Unequal* treatments, participants decided the send and return rates twice: once when paired with a peer having the same endowment (i.e., both *rich* or both *poor*) and again with a peer having a different endowment (i.e., one *rich* and one *poor*). In contrast, participants in the Equal treatments made these decisions only once, always paired with someone of the same endowment.

Table 1 Payoff matrices of the stag-hunt game for all combinations of pairings between participants based on their endowment

Participant 1		*Participant 2*: *Poor [Endowment = 50 tokens]* Invest	Keep	*Participant 2*: *Rich [Endowment = 100 tokens]* Invest	Keep
Poor [Endowment = 50 tokens]	Invest	**110**, *110*	**20**, *80*	**140**, *190*	**20**, *130*
	Keep	**80**, *20*	**50**, *50*	**110**, *40*	**50**, 100
Rich [Endowment = 100 tokens]	Invest	**190**, *140*	**40**, *110*	**220**, *220*	**40**, *160*
	Keep	**130**, *20*	**100**, *50*	**160**, *40*	**100**, *100*

In the prisoner's dilemma, participants simultaneously decided to either 'take' from or 'not take' from the other's token endowment. Table 2 presents the payoff matrices for all possible interactions categorised according to the participants' endowments.[12,13] In all cases, this game has a unique dominant strategy equilibrium of {Take, Take}.

Table 2 Payoff matrices of the prisoner's dilemma for all combinations of pairings between participants based on their endowment

Participant 1		*Participant 2*: *Poor [Endowment = 50 tokens]* Take	Not take	*Participant 2*: *Rich [Endowment = 100 tokens]* Take	Not take
Poor [Endowment = 50 tokens]	Take	**35**, *35*	**65**, *20*	**50**, *55*	**80**, *40*
	Not take	**20**, *65*	**50**, *50*	**20**, *115*	**50**, *100*
Rich [Endowment = 100 tokens]	Take	**55**, *50*	**115**, *20*	**70**, *70*	**130**, *40*
	Not take	**40**, *80*	**100**, *50*	**40**, *130*	**100**, *100*

[12] We implement comprehension checks similar to those in the trust game. After receiving instructions, participants had to accurately enter their and their partner's token earnings for one of the four outcomes in the payoff matrices (as shown in Table 1 and Table 2) to proceed.

[13] In the *Unequal* treatments, participants made the decisions pertaining to each game twice – once when paired with a peer having the same endowment and again with a peer having a different endowment. In contrast, participants in the Equal treatments made these decisions only once, always paired with someone of the same endowment.

3.3.3. Belief elicitation

We also elicited participants' beliefs about their counterparts' actions. In the trust game, we asked first movers how many tokens they believed the second mover would send back to them (based on knowing what they had decided to send) as well as their estimate of the average amount sent by other first movers in similar conditions. To all second movers, we asked how many tokens they believed the majority of other second movers returned upon receiving 90 tokens. Participants received an additional 10 tokens as a reward if their predictions fell within a 5-token margin of the actual observed behaviour, aligning with Gächter & Renner's (2010) methodology for belief elicitation. In the stag-hunt and prisoner's dilemma games, participants estimated the majority's likely actions – 'invest' or 'keep', 'take' or 'not take'. Correct predictions were similarly incentivised with a 10-token reward.[14]

3.3.4. Final Questionnaire

After submitting their choices across all three games, the participants filled out a questionnaire which comprised five demographic questions (age, gender, country of birth, education and employment status) and shortened versions of the Social Dominance Orientation (SDO) (Pratto et al., 1994) and the Right-Wing Authoritarianism (RWA) scale (Altemeyer, 1981). High SDO scores indicate greater tolerance of intergroup inequality while higher RWA scores indicate greater social conformity.

In the questionnaire, we also assessed participants' fairness perceptions of the three endowment allocation methods – equal, luck-based and merit-based. We first asked them to rate the fairness of the endowment allocation method used in their treatment group on a five-point Likert scale with 1 indicating "very unfair" to 5 indicating "very fair." Next, we disclosed the other endowment allocation methods used in the study and then asked them to re-evaluate the fairness of their endowment allocation method using the same question. This repeated assessment aims to capture the influence of awareness about alternative allocation methods on participants' fairness judgments. Finally, we asked participant to choose what they considered the fairest allocation

[14] In the interests of parsimony, we have not included the analysis participant beliefs in our results. Although belief data across the different games is of interest and has been explored by others, it did not yield clear insights about how treatments influenced expectations of others' play. Given that the treatment differences are the central focus of this paper, including a discussion of belief data adds little value. All of the relevant analyses are available upon request.

method except they were given four options, namely, equal, luck-based, merit-based and an uncertain method.[15]

3.4. Participants

We initially recruited 1,212 adult participants through Prolific, a UK-based online crowdsourcing platform, across eight sessions. Of these, 168 individuals started the study but dropped out before completing, resulting in a final sample of 1,044 participants. A detailed breakdown of participant attrition by treatment group and experimental stage is provided in Table B1 in Appendix B. Our only inclusion criterion was that the participants must be aged above 18 years. Approximately 54 per cent identified as female and the average age is 26.93 years. The participants represented an array of 34 countries.[16] Participants took approximately 25 minutes to complete the experiment. At the end of the experiment, the participants earned an average of £4.17[17], which consisted of a fixed £2.5 participation fee in addition to the variable payments which were based on their treatment, own decisions and partner decisions.[18] Table 3 gives the breakdown of the number of participants and average earnings based on the treatment groups.[19] The experiment was approved by the University of Auckland Human Participants Ethics Committee (Ref. No.: UAHPEC23602). Raw data can be accessed at data.mendeley.com/datasets/8gsjdwtxbx/1.

Table 3 Summary of treatments showing the number of participants and average earnings in each sub-group

Treatment	Status	Participant endowment before each game	Number of Participant	Average Earnings
Equal	Poor	50 tokens	163	£3.38
Equal	Rich	100 tokens	189	£4.13
Unequal-Merit	Poor	50 tokens	182	£3.25
	Rich	100 tokens	158	£3.98
Unequal-Luck	Poor	50 tokens	165	£3.4
	Rich	100 tokens	187	£3.87

[15] The uncertain endowment allocation method in this context simply means a 50 per cent chance of the allocation being determined based on luck and a 50 per cent chance of it being determined by merit. We added this fourth option primarily as a way to avoid the compromise effect, a bias towards the middle option (Beauchamp et al., 2020).
[16] In Appendix A, we present balance tables on key demographic variables.
[17] This corresponds to an hourly rate of £10 or $12.9, exceeding both the recommended pay rate set by the crowdsourcing platform Prolific (£9) and the minimum allowable pay rate (£6).
[18] To comply with Prolific's £6/hour minimum wage policy, we provided a fixed £2.5 participation fee for the 25-minute task. This ensured that even the few participants earning no variable payments met the required minimum, while most participants earned above this level when including variable payments. This structure aligned participant incentives with task duration and maintained compliance with platform guidelines.
[19] We ended up with an odd number of *rich* and *poor* participants in a few cases preventing the formation of unique symmetric pairings. To resolve this, we paired one participant in each treatment with two other randomly picked participants with the same endowment for final earnings calculations. This did not affect results, as decisions are elicited using the strategy method and all pairings were made ex post.

3.5. Power Calculations

We performed power calculations using 42 observations from a pilot study to establish the sample size needed to detect a significant difference between luck-based and merit-based inequality. The pilot comprised 19 observations from the *Unequal-Merit* and 23 from the *Unequal-Luck* group.[20] We did not modify the experimental design after the pilot, and as a result, the pilot session followed the same design as outlined above. We aimed for a sample size that would provide 80% power at a 5% significance level (α), minimising the risk of type II errors in measuring social capital across three games. Specifically, we expected higher trust levels in the trust game, a greater percentage of 'invest' decisions in the stag-hunt game, and fewer 'take' decisions in the prisoner's dilemma under merit. Given the limited size of our pilot data, we employed Monte Carlo simulations for a robust analysis.[21] To detect a merit effect with 80% power based on the estimated effects in the pilot, our study needed 200 participants per treatment in the prisoner's dilemma, 100 in the stag-hunt game, and 350 in the trust game. Consequently, we aimed for 350 participants per treatment. We ended up with 352 participants in the equal and *Unequal-Luck* treatments and 340 participants in the *Unequal-Merit* treatment.

4. **Results**

We start by testing our first hypothesis by considering whether inequality, irrespective of its source, reduces social capital across the three games. We next examine our second hypothesis, i.e., whether luck-based inequality results in a greater decline in social capital compared to merit. Finally, we analyse participants' post-experimental fairness evaluations of the equal, luck, and merit treatments. Summary statistics and results from the balance of treatment tests are presented in Appendix A.

4.1. Support for Hypothesis 1: Role of Inequality Irrespective of its Source

In this section, we focus on differences in the behaviour of those in the equal treatments and those in the unequal ones, regardless of the source of inequality. Accordingly, we combined the decisions of participants from both the *Unequal-Luck* and *Unequal-Merit* treatments, referring to them collectively as "Unequal" societies, and compare these to decisions made in the *Equal-Poor* and *Equal-Rich* treatments, which we collectively label as "Equal" societies. To isolate the effect of inequality on social capital and avoid potential confounds, we restrict our analysis to interactions

[20] In the pilot study, the *Unequal* treatments had an imbalance between *rich* and *poor* participants. To address this, some participants were paired with several randomly chosen others to determine final earnings. This did not affect results, as decisions are elicited using the strategy method and all pairings were made ex post.

[21] We evaluated the treatments as a whole, disregarding participant endowment.

between participants with identical endowments (i.e., *rich* interacting with *rich* and *poor* with *poor*). By holding pairings constant, we eliminate confounding effects of individual wealth asymmetries, allowing us to attribute any observed behavioural differences to the broader influence of societal inequality.

4.1.1. Trust Game

Table 4 presents the averages for trust and trustworthiness in equal and unequal societies. Average trustworthiness is lower in *Unequal* societies for the *poor* than their counterparts in the *Equal* societies (Wilcoxon Rank-Sum Test, p-value < 0.05). However, we find no significant differences in average trustworthiness among the *rich*, or trust levels for both the *rich* and the *poor*.

Table 4 Comparing decisions of participants between the Equal and Unequal groups in the trust game

			Equal Societies	Unequal Societies#	Wilcoxon Rank Sum p-value
Trust	**Poor**	Obs.	163	347	0.978
		Proportion transferred	43.37% (28.40)	42.88% (27.32)	
	Rich	Obs.	189	345	0.322
		Proportion transferred	31.96% (25.35)	30.9% (26.62)	
Trustworthiness	**Poor**	Obs.	163	347	0.040
		Proportion returned	43.88% (18.18)	40.92% (17.03)	
	Rich	Obs.	189	345	0.099
		Proportion returned	44.11% (18.80)	42.17% (19.45)	

To isolate the effect of group-level inequality without endowment and payoff confounds, we compare only symmetric interactions (i.e., *rich* interacting with *rich* and *poor* with *poor*) within both unequal and equal groups.
Note: Figures in parentheses are standard deviations

We conducted Ordinary Least Squares (OLS) regression analysis to test the effect of societal inequality (see Table 5). We ran three models to explain trust and trustworthiness. The first model incorporates a dummy for inequality without any controls. The second model controls for endowments. In the third model, we incorporate a comprehensive set of controls including the encoding score in the real-effort task, demographics, prior experience with economic games, scores for SDO and RWA, and the order in which participants played the three games (to check for potential order effects). Inequality does not affect trust in any model. In terms of trustworthiness, the coefficients for *Unequal* treatment are significantly negative in models 1 and 2, suggesting that inequality reduces trustworthiness. The effect remains negative, albeit only at the 10% significance level, in model 3. This suggests that the presence of unequal distribution of endowments has a detrimental effect on trustworthiness even with endowments held fixed. While not directly relevant to this hypothesis, we also note that in general the *rich* are less trusting but there are no significant differences in trustworthiness between the *rich* and *poor*.

Table 5 Results of Ordinary Least Square (OLS) regression models to explain decision made in the trust game

Regressors	Trust			Trustworthiness		
	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	37.244 ***	43.576 ***	57.775 ***	44.006 ***	43.519 ***	33.846 ***
	(1.467)	(1.69)	(11.035)	(0.978)	(1.153)	(7.627)
Unequal treatment	-0.337	-0.789	0.14	-2.462 **	-2.427 **	-2.033 *
	(1.802)	(1.763)	(1.728)	(1.201)	(1.202)	(1.194)
Rich status		-11.793 ***	-12.803 ***		0.906	-0.014
		(1.667)	(1.682)		(1.137)	(1.163)
Encoding Score			0.233			0.252 **
			(0.144)			(0.099)
Control for Demographics^, Prior experience with experiments, SDO and RWA scores	No	No	Yes	No	No	Yes
Control for Order Effects	No	No	Yes	No	No	Yes
Obs. [a]	1,044	1,044	1,044	1,044	1,044	1,044
R^2 / R^2 adjusted	0.000 / 0.001	0.046 / 0.044	0.117 / 0.097	0.004 / 0.003	0.005 / 0.003	0.054 / 0.032

*** p <0.01, ** p < 0.05, * p <0.1; ^ Demographic variables include age, gender, education and employment
Note: Figures in parentheses are standard errors.
[a] Each observation represents an independent decision made by participants paired symmetrically in the equal and the unequal treatments.

4.1.2. Stag-hunt Game and the Prisoner's Dilemma

Table 6 shows the percentage of participants who 'invest' in the stag-hunt game and 'take' in the prisoner's dilemma game broken down by their endowment level and their treatment. A lower proportion of participants 'invest' in unequal societies, regardless of endowment level. The differences are statistically significant for *poor* participants (Chi-squared Test, p-value < 0.05) and marginally significant for *rich* participants (p-value < 0.1). In terms of the participants' 'taking' decision, however, the presence of inequality does not have any significant effect.

Table 6 Comparing proportion of participants who 'invest' and 'take' in the stag-hunt game and prisoner's dilemma between equal and Unequal groups

			Equal Societies	**Unequal Societies #**	**Chi-squared Test p-value**
'Investment Rate' in the stag hunt game	**Poor**	Obs.	163	347	0.006
		% of Participants who 'invest'	83.44% (0.37)	71.76% (0.45)	
	Rich	Obs.	189	345	0.072
		% of Participants who 'invest'	81.48% (0.39)	74.20% (0.44)	
'Taking Rate' in the prisoner's dilemma game	**Poor**	Obs.	163	347	1
		% of Participants who 'take'	53.99% (0.50)	53.60% (0.50)	
	Rich	Obs.	189	345	0.835
		% of Participants who 'take'	58.73% (0.49)	57.39% (0.50)	

To isolate the effect of group-level inequality without endowment and payoff confounds, we compare only symmetric interactions (i.e., *rich* interacting with *rich* and *poor* with *poor*) within both unequal and equal groups.
Note: Figures in parentheses are standard deviations

We ran three probit regression models each for the stag-hunt game and the prisoner's dilemma (see Table 7). Model 1 regresses the dichotomous decisions to 'invest' and 'take' using a dummy variable for *Unequal* treatment. Model 2 incorporates a control for endowment, while model 3 includes additional control variables such as encoding score in the real-effort task, demographics, prior experience with economic games, and scores for SDO and RWA, as well as order effects. In all models, the proportion of participants choosing to 'invest' in the stag-hunt game is significantly lower in unequal societies. By contrast, inequality has no significant effect on the likelihood of 'taking' in the prisoner's dilemma in either of the three models. Overall, the regression models confirm the non-parametric test results: equal societies experience higher coordination to the payoff dominant outcome in the stag-hunt game but has no discernible effect on defection rates in the prisoner's dilemma.

Table 7 Results of Probit regression models to explain decision made in the stag-hunt game and the prisoner's dilemma

Regressors	Investment Rate Invest = 1; Keep = 0			Taking Rate Take = 1; Not take = 0		
	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	0.930 ***	0.914 ***	0.991 *	0.165 **	0.109	0.331
	(0.078)	(0.091)	(0.582)	(0.067)	(0.079)	(0.536)
Unequal dummy	-0.318 ***	-0.317 ***	-0.322 ***	-0.026	-0.023	-0.06
	(0.094)	(0.094)	(0.096)	(0.082)	(0.083)	(0.084)
Rich status		0.03	-0.018		0.104	0.155 *
		(0.086)	(0.091)		(0.078)	(0.082)
Encoding Score			0.005			-0.022 ***
			(0.008)			(0.007)
Control for Demographics^, Prior experience with experiments, SDO and RWA scores	No	No	Yes	No	No	Yes
Control for Order Effects	No	No	Yes	No	No	Yes
Obs. [a]	1,044	1,044	1,044	1,044	1,044	1,044
Nagelkerke R^2	0.017	0.017	0.077	0	0.002	0.056
AIC	1139.249	1141.129	1141.915	1436.899	1437.114	1438.596

*** p <0.01, ** p < 0.05, * p <0.1; ^ Demographic variables include age, gender, education and employment
Note: Figures in parentheses are standard errors.
[a] Each observation represents an independent decision made by participants paired symmetrically in the equal and the unequal treatments.

Overall, our results reveal that trustworthiness, measured by the proportion of tripled amount returned by the second mover, is significantly lower in Unequal societies, specifically among the *poor*. This suggests that inequality diminishes the willingness to reciprocate trust. We also find that participants in unequal societies are less likely to coordinate on the payoff-dominant outcome in the stag-hunt game. Taken together, these findings suggest that inequality undermines key aspects of social capital, particularly trustworthiness and coordination.

4.2. Support for Hypothesis 2: Role of the Source of Inequality

In this section, we focus on how the source of inequality shapes behaviour. To do so, we restrict our analysis to the 692 participants from the *Unequal-Merit* and *Unequal-Luck* treatments, drawn from the initial sample of 1,044.

Our experimental design varies both endowment status (*rich* or *poor*) and the source of inequality (merit or luck). To clearly isolate the effects of the inequality's source, we adopt the following analytical strategy: we will first look at symmetric pairings, i.e., *rich-rich* and *poor-poor*, across the two sources of inequality, luck or merit. Here we are comparing symmetric endowments while varying the source of that endowment allocation, luck or merit. We will then look at behaviour in asymmetric pairings, i.e., *rich-poor* and *poor-rich,* across the luck and merit treatments. In short, we systematically analyse all possible pairings (*rich-rich*, *poor-poor*, *rich-poor*, and *poor-rich*) across luck and merit treatments. This strategy guarantees that we are changing one factor at a time, allowing for a clean test of how the source of inequality influences social capital.

4.2.1. Trust Game

Table 8 presents the average levels of trust and trustworthiness under the merit and luck treatments, disaggregated by participant endowment (*rich* or *poor*) and pairing type (symmetric or asymmetric). Contrary to our expectations, we observe higher average trust across all participant pairings under luck compared to merit, but the differences are not significant. The source of inequality does not significantly impact trustworthiness.[22]

[22] We also compared the differences in trust and trustworthiness between symmetric and asymmetric interactions under luck and merit-based inequality. Using Wilcoxon Rank Sum tests, we found no significant differences between luck and merit in how participants adjust their behaviour. The results are reported in Table B2 in Appendix B.

Table 8 Comparing decisions of participants in the trust game across merit and luck treatments

				Merit	Luck	Wilcoxon Rank Sum p-value
Symmetric Pairings	Trust	Poor	Obs.	182	165	
			Proportion transferred	40.55% (25.72)	45.45% (28.85)	0.129
		Rich	Obs.	158	187	
			Proportion transferred	28.04% (24.25)	33.32% (28.32)	0.162
	Trustworthiness	Poor	Obs.	182	165	
			Proportion returned	40.18% (16.59)	41.74% (17.53)	0.630
		Rich	Obs.	158	187	
			Proportion returned	42.94% (18.62)	41.52% (20.15)	0.380
Asymmetric Pairings	Trust	Poor	Obs.	182	165	
			Proportion transferred	37.69% (25.9)	42.3% (29.4)	0.152
		Rich	Obs.	158	187	
			Proportion transferred	27.15% (22.69)	32.51% (25.77)	0.072
	Trustworthiness	Poor	Obs.	182	165	
			Proportion returned	37.82% (17.55)	38.94% (17.24)	0.634
		Rich	Obs.	158	187	
			Proportion returned	43.41% (20.74)	43.88% (22.17)	0.817

Note: Figures in parentheses are standard deviations

Next, we analysed trust and trustworthiness using three linear mixed-effects regression models, as shown in Table 9.[23] Our approach mirrors the specification used in section 4.1, with *poor* participants in the merit treatment serving as the baseline. We incorporated participant ID as a random effect to account for the interdependence of repeated observations from the same participant under symmetric and asymmetric pairings. This adjustment ensures that within-subject variations do not bias our estimates. We find luck positively influences trust in all models, but not trustworthiness.[24]

[23] It is worth noting that when we conduct OLS regressions on split datasets without repeated observations – one with choices from symmetric interactions and the other using asymmetric interactions – we observe qualitatively consistent results.

[24] The Wilcoxon Rank Sum test, a non-parametric method, shows mostly non-significant differences between merit and luck, whereas the regression models reveal significant differences. This discrepancy likely arises from two factors. First, the non-parametric tests were conducted on smaller sub-samples based on interaction type, reducing statistical power and leading to largely non-significant results. In contrast, the regression models utilised the entire data from the unequal groups, which substantially increased statistical power. Second, the mixed-effects regressions accounted for repeated observations under symmetric and asymmetric conditions within the Unequal groups, a control that non-parametric tests do not offer.

Table 9 Results of Linear Mixed Effects Regression models to explain decisions in the trust game

Regressors	Trust			Trustworthiness		
	(1)	(2)	(3)	(1)	(2)	(3)
Fixed Effects						
Intercept	33.765 *** (1.37)	38.988 *** (1.59)	41.802 *** (13.35)	40.938 *** (0.963)	39.428 *** (1.145)	24.978 *** (9.671)
Luck dummy	4.289 ** (1.92)	5.037 *** (1.88)	4.227 ** (1.83)	0.656 (1.350)	0.44 (1.348)	0.273 (1.328)
Rich status		-11.240 *** (1.87)	-13.493 *** (1.96)		3.249 ** (1.347)	1.405 (1.420)
Encoding Score			0.299 * (0.17)			0.373 *** (0.119)
Control for Demographics^, Prior experience with experiments, SDO and RWA scores	No	No	Yes	No	No	Yes
Control for Order Effects	No	No	Yes	No	No	Yes
Random Effects						
Participant ID Variance	543.13	511.69	466.15	257.92	257.58	242.16
Participants / Obs. [a]	692 / 1384	692 / 1384	692 / 1384	692 / 1384	692 / 1384	692 / 1384
AIC	12497.665	12461.615	12382.023	11513.258	11507.048	11452.784
Marginal R^2 / Conditional R^2	0.006 / 0.746	0.049 / 0.746	0.111 / 0.746	0.000 / 0.748	0.008 / 0.748	0.060 / 0.748

*** p <0.01, ** p < 0.05, * p <0.1; ^ Demographic variables include age, gender, education and employment
Note: Figures in parentheses are standard errors.
[a] The study included 1,044 participants, with 692 in the unequal groups analysed in this section. Each of these participants made two choices – once under symmetric and once under asymmetric pairing – yielding a total of 1,384 observations, with each participant contributing two.

To explore the data futher, we conducted OLS regressions on subsamples categorised by pairing types (*poor-poor*, *poor-rich*, *rich-rich* and *rich-poor*) to understand how the source of inequality influences trust depending on pairing types. The results, shown in Table 10, reveal that the *rich* consistently display greater trust in the luck treatment, regardless of whether they are paired with other *rich* or *poor* participants.[25] We discuss possible explanations for this pattern in Section 5.

[25] The corresponding results for explaining trustworthiness using OLS regressions on subsamples based on pairing types is given in Table B3 in Appendix B. Luck does not significantly explain trustworthiness in any of the subsamples.

Table 10 Results of Ordinary Least Square (OLS) regression models to explain trust in the trust game, categorised by interaction types

	Poor-Poor pairings		Poor-Rich pairings		Rich-Rich pairings		Rich-Poor pairings	
	(1)	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Intercept	40.549*** (2.02)	74.624*** (18.67)	37.692*** (2.047)	30.955 (19.04)	28.038*** (2.111)	-4.246 (30.186)	27.152*** (1.942)	5.596 (28.682)
Luck dummy	4.905 * (2.93)	3.729 (3.286)	4.611 (2.969)	4.337 (3.351)	5.278* (2.867)	9.586*** (3.163)	5.361** (2.637)	8.241*** (3.005)
Encoding Score		0.014 (0.303)		-0.165 (0.309)		1.079 *** (0.272)		0.642 ** (0.258)
Control for Demographics^, Prior experience with experiments, SDO and RWA scores	No	Yes	No	Yes	No	Yes	No	Yes
Control for Order Effects	No	Yes	No	Yes	No	Yes	No	Yes
Obs.	347	347	347	347	345	345	345	345
R^2 / R^2 adjusted	0.008 / 0.005	0.082 / 0.017	0.007 / 0.004	0.070 / 0.003	0.010 / 0.007	0.172 / 0.113	0.012 / 0.009	0.119 / 0.056

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; ^ Demographic variables include age, gender, education and employment
Note: Figures in parentheses are standard errors

4.2.2. Stag-hunt Game and the Prisoner's Dilemma

Following a similar approach to Section 4.2.1, Table 11 reports the 'investment rate' in the stag-hunt game and the 'taking rate' in the prisoner's dilemma under the merit and luck treatments, disaggregated by participant endowment (*rich* or *poor*) and pairing type (symmetric or asymmetric). Using non-parametric tests, we find no significant effect of the source of inequality on behaviour in either game.

Table 11 Comparing decisions of participants in the trust game across merit and luck treatments, and between symmetric and asymmetric interactions

				Merit	Luck	Chi-squared Test p-value
Symmetric Pairings	**'Investment Rate' in the stag hunt game**	**Poor**	Obs.	182	165	0.328
			% of Participants who 'invest'	69.23% (0.46)	74.55% (0.44)	
		Rich	Obs.	158	187	0.855
			% of Participants who 'invest'	73.42% (0.44)	74.87% (0.43)	
	'Taking Rate' in the prisoner's dilemma game	**Poor**	Obs.	182	165	0.082
			% of Participants who 'take'	48.90% (0.50)	58.79% (0.49)	
		Rich	Obs.	158	187	0.797
			% of Participants who 'take'	56.33% (0.50)	58.29% (0.49)	
Asymmetric Pairings	**'Investment Rate' in the stag hunt game**	**Poor**	Obs.	182	165	0.955
			% of Participants who 'invest'	62.09% (0.49)	61.21% (0.49)	
		Rich	Obs.	158	187	0.896
			% of Participants who 'invest'	60.76% (0.49)	62.03% (0.49)	
	'Taking Rate' in the prisoner's dilemma game	**Poor**	Obs.	182	165	0.398
			% of Participants who 'take'	73.08% (0.44)	77.58% (0.42)	
		Rich	Obs.	158	187	0.300
			% of Participants who 'take'	63.29% (0.48)	57.22% (0.50)	

Note: Figures in parentheses are standard errors

We also applied three linear mixed-effects probit regression models, following the approach used in the trust game analysis in section 4.2.1. The results confirm that luck has no significant impact on choices made in either the stag-hunt game or the prisoner's dilemma (see Table B4 in Appendix B). We further extended our analysis by performing OLS regressions on subsamples categorised by pairing types, similar to our approach in the trust game. Consistent with the non-parametric tests, our results show no significant effect of luck on 'investment' in the stag-hunt game, regardless of pairing type (see Table B5 in Appendix B). However, we found that luck positively influences 'taking' in the prisoner's dilemma, but only when *poor* participants are paired with other *poor* participants (see Table B6 in Appendix B).

In this analysis, we explored how merit and luck-based inequality differently affect social capital. Contrary to our expectations, trust levels are generally higher under luck than merit-based inequality, with this difference being significant primarily among the *rich*. In contrast, we find no consistent effect of the inequality's source on behaviour in the other games.

4.3. Fairness Perceptions

In the final questionnaire, participants assessed the fairness of their treatment group's endowment allocation method, both before and after they learned about the other methods. Participants in the *Unequal-Merit* treatments rated their method as fairest, followed by the Equal and the *Unequal-Luck* treatments, as shown in Table 13. The results also reveal that learning about other methods reduced the perceived fairness of the luck method, while merit and equal methods' ratings improved. This highlights that having a reference point amplifies the perceived unfairness of luck.

Using Wilcoxon Rank Sum Tests, significant differences in fairness scores emerged between merit and luck, both before (p-value = 0.054) and after knowledge of other methods (p-value <0.001), and between equal and luck, but only after knowledge (p-value < 0.001). The differences were not significant between merit and equal, implying that there is no discernible fairness perception gap between an effort-based strategy and an egalitarian one among participants in a lab setting.

Table 12 Average fairness perception score of the three endowment allocation methods

Treatment Group	Obs.	Average fairness score (before knowledge about other methods)	Average fairness score (after knowledge about other methods)	Wilcoxon Rank Sum Test p-value
Equal	352	3.605 (0.979)	3.727 (1.024)	0.036
Luck	352	3.54 (1.053)	3.358 (1.039)	< 0.001
Merit	340	3.674 (1.000)	3.762 (1.036)	0.041
Wilcoxon Rank Sum Test p-value comparing between treatments				
Equal v/s Luck		0.345	< 0.001	
Equal v/s Merit		0.275	0.599	
Luck v/s Merit		0.054	< 0.001	

Note: The fairness perception rating ranges from 0 (very unfair) to 5 (very fair); Figures in parentheses are standard deviations

We also measured participants' fairness preferences for different allocation methods by asking them to choose the fairest method between equal, luck-based, merit-based, and uncertain options in the questionnaire.[26] Overall, participants have distinct fairness preferences for different endowment allocation processes (χ^2 = 430.12, df = 3, p-value < 0.001). As expected, the merit-

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[26] Recall that the uncertain allocation method simply means a 50 per cent chance of the endowment being determined based on luck and a 50 per cent chance of it being determined based on merit.

based allocation emerges as the most preferred, with 46.26% of participants considering it the fairest. This is followed by the egalitarian method (34.67%), the luck-based approach (11.21%), and the uncertain method (7.85%).[27] Table B7 in Appendix B shows the percentage of participants who selected each option grouped by treatment.

Overall, the results demonstrate that the treatment has a significant influence on the participants' fairness judgments. The participants' perceived fairness varies depending on the endowment allocation method they receive, with a general tendency to favour merit and equality over luck.

5. Discussion and Conclusion

In this study, we use economic experiments to manipulate the level and the source of inequality among participants and measure their subsequent behaviour using three economic games – trust game, stag-hunt game and the prisoner's dilemma – that are good proxies for measuring social capital. This allows us to test the causal effect of inequality, as well as to compare the differential impact of luck and merit-based inequality on social capital. Our findings indicate that inequality has a negative effect on some, but not all, dimensions of social capital. Inequality reduces the trustworthiness of the *rich* second movers in the trust game and the propensity to coordinate to the payoff dominant outcome in the stag-hunt game for both *rich* and *poor*. Overall, these findings are broadly consistent with Yang and Konrath's (2023) meta-analysis that identified a small but significant negative link between inequality and prosocial behaviour, a proxy for social capital (Brooks, 2005; Wang & Graddy, 2008).

On comparing the two sources of inequality, we find that, by and large, they have little impact on social capital. One possible explanation is a gap between stated and revealed preferences, a well-documented pattern in economics (List & Gallet, 2001). Participants may view merit-based inequality as fairer in surveys, but when real money is on the line, their behaviour does not reflect these stated beliefs. This disconnect may account for the lack of behavioural differences across games. However, we do find evidence of increased trust under luck compared to merit. This is contrary to our hypothesis and is especially interesting in the light of our other finding that participants perceive merit-based allocation to be fairer than luck.

[27] We also examined the differences in participant choices across three games focusing solely on participants who viewed merit-based allocation as the fairest. The results remained qualitatively consistent – inequality reduced trustworthiness in the trust game and the propensity to invest in the stag-hunt game and luck increased trust in the trust game.

Several explanations may account for this finding. First, an entitlement effect may be at play. Prior research shows that income is not purely fungible, and that people use their funds differently when it is earned compared to when it is unearned as they use different "mental accounts" for different income sources (Ambler & Godlonton, 2021; Cherry, 2001; Cherry et al., 2002; Jakiela, 2015; Umer et al., 2022). People feel more entitled to their earned income potentially leading to less prosocial behaviour with it compared to unearned income (Bulte et al., 2016; Cherry, 2001; Cherry et al., 2002; Jakiela, 2015). While participants perceive a merit-based system to be fairer, this perception does not translate to higher trust, possibly because participants under merit may feel justified in keeping their earned tokens rather than risk losing them. Moreover, the decision to trust inherently makes the trustor vulnerable to betrayal by the recipient, who can appropriate any surplus created (Bohnet et al., 2008; Bohnet & Zeckhauser, 2004). It is plausible that in a merit-based system, individuals feel a stronger sense of entitlement to their earnings and are thus less willing to expose themselves to potential exploitation, unlike in a luck-based system where the income is "unearned".

A second explanation is that people may act more prosocially under luck-based systems as a compensatory behaviour to address perceived unfairness. Cappelen et al. (2013) found that people generally prefer to redistribute earnings and equalise outcomes to account for differences due to luck as opposed to active choices. Our experiment supports this, as higher trust under luck-based inequality is most pronounced when *rich* first movers interact with *poor* second movers, suggesting an attempt to correct the unfairness by redistributing their windfall gains.

Overall, this study highlights the complex interplay between the source of inequality, perceived fairness, and its impact on social capital. While merit-based systems are perceived as fairer, they may undermine trust, challenging assumptions about fairness and social capital. Future research should investigate why individuals trust more in luck-based systems despite perceiving them as less fair. This could involve examining psychological factors like entitlement and perceived fairness using validated scales like the Support for Economic Inequality Scale (SEIS). Comparative studies using different economic games, like public goods and dictator games, can verify our findings. Finally, varying the visibility of how inequality arises (regardless of its true source) may reveal how beliefs about inequality shape perceptions of legitimacy and social cohesion, even when the underlying reality remains unchanged.

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Authors' Contributions

All authors were equally involved in the design of experiments. EL programmed the experiment in o-Tree and, along with AR conducted data collection via Prolific. SS handled the data analysis with input from EL, AR and AC. SS and AC were responsible for writing the paper. All authors reviewed and approved the final manuscript.

Statements and Declarations

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Competing interests

The authors declare that they have no conflicts of interest with respect to their authorship or the publication of this article.

Ethics approval and consent

The experiment was approved by the University of Auckland Human Participants Ethics Committee (Ref. No.: UAHPEC23602).

Data availability

We have uploaded the data to Mendeley Data.

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Appendix A: Summary Statistics and Balance Tables

'Investment Rate' in the Stag-hunt Game					
Treatment Group	**Obs.**	**Poor-Poor % of Participants who 'Invest'**	**Rich-Rich % of Participants who 'Invest'**	**Poor-Rich % of Participants who 'Invest'**	**Rich-Poor % of Participants who 'Invest'**
Equal	352	83.44% (0.37)	81.48% (0.39)	–	–
Unequal-Luck	352	74.55% (0.44)	74.87% (0.43)	61.21% (0.49)	62.03% (0.49)
Unequal-Merit	340	69.23% (0.46)	73.42% (0.44)	62.09% (0.49)	60.76% (0.49)

'Taking Rate' in the Prisoner's Dilemma Game					
Treatment Group	**Obs.**	**Poor-Poor % of Participants who 'Take'**	**Rich-Rich % of Participants who 'Take'**	**Poor-Rich % of Participants who 'Take'**	**Rich-Poor % of Participants who 'Take'**
Equal	352	53.99% (0.50)	58.73% (0.49)	–	–
Unequal-Luck	352	58.79% (0.49)	58.29% (0.49)	77.58% (0.42)	57.22% (0.50)
Unequal-Merit	340	48.90% (0.50)	56.33% (0.50)	73.08% (0.44)	63.29% (0.48)

Trust in the Trust Game					
Treatment Group	**Obs.**	**Poor-Poor Send Rate (in %)**	**Rich-Rich Send Rate (in %)**	**Poor-Rich Send Rate (in %)**	**Rich-Poor Send Rate (in %)**
Equal	352	43.37% (28.40)	31.96% (25.35)	–	–
Unequal-Luck	352	45.45% (28.85)	33.32% (28.32)	42.3% (29.40)	32.51% (25.77)
Unequal-Merit	340	40.55% (25.72)	28.04% (24.25)	37.69% (25.90)	27.15% (22.69)

Trustworthiness in the Trust Game					
Treatment Group	**Obs.**	**Poor-Poor Return Rate (in %)**	**Rich-Rich Return Rate (in %)**	**Poor-Rich Return Rate (in %)**	**Rich-Poor Return Rate (in %)**
Equal	352	43.88% (18.18)	39.55% (17.29)	–	–
Unequal-Luck	352	41.74% (17.52)	41.52% (20.15)	38.94% (17.24)	43.88% (22.17)
Unequal-Merit	340	40.18% (16.59)	42.94% (18.62)	37.82% (17.55)	43.41% (20.74)

The tables below present balance tests on key demographics. The results indicate differences in the distribution of respondents across the three methods of endowment allocation: luck, merit, and equal.

Balance tests on key demographics

Covariates	**Equal**	**Unequal-Luck**	**Unequal-Merit**	**p-value**
N	**352**	**352**	**340**	
Age [mean (SD)]	27.06 (8.89)	26.92 (8.54)	26.80 (8.10)	0.919
Female [N (%)]	183 (52.0%)	189 (53.7%)	206 (60.6%)	0.056
Education [mean (SD)]	3.52 (1.19)	3.62 (1.17)	3.59 (1.11)	0.545
Employment [mean (SD)]	2.38 (1.44)	2.37 (1.46)	2.48 (1.47)	0.531
Country of Birth [N (%)]				0.792
Argentina	0 (0.0)	2 (0.6)	1 (0.3)	
Australia	2 (0.6)	1 (0.3)	0 (0.0)	
Austria	0 (0.0)	1 (0.3)	0 (0.0)	
Belgium	3 (0.9)	3 (0.9)	2 (0.6)	
Bolivia	0 (0.0)	1 (0.3)	0 (0.0)	
Brazil	2 (0.6)	2 (0.6)	1 (0.3)	
Canada	4 (1.1)	4 (1.1)	5 (1.5)	
Chile	6 (1.7)	6 (1.7)	5 (1.5)	
China	0 (0.0)	2 (0.6)	0 (0.0)	
Colombia	0 (0.0)	0 (0.0)	1 (0.3)	
Czech Republic	4 (1.1)	3 (0.9)	3 (0.9)	
Denmark	1 (0.3)	0 (0.0)	0 (0.0)	
Estonia	2 (0.6)	1 (0.3)	4 (1.2)	
Finland	4 (1.1)	4 (1.1)	3 (0.9)	
France	4 (1.1)	4 (1.1)	5 (1.5)	
Germany	3 (0.9)	4 (1.1)	2 (0.6)	
Greece	7 (2.0)	11 (3.1)	13 (3.8)	
Hungary	4 (1.1)	11 (3.1)	9 (2.6)	
Iceland	0 (0.0)	0 (0.0)	1 (0.3)	

India	1 (0.3)	0 (0.0)	1 (0.3)
Iran	1 (0.3)	0 (0.0)	0 (0.0)
Israel	2 (0.6)	2 (0.6)	1 (0.3)
Italy	27 (7.7)	17 (4.8)	26 (7.6)
Latvia	2 (0.6)	4 (1.1)	2 (0.6)
Mexico	37 (10.5)	34 (9.7)	29 (8.5)
Namibia	0 (0.0)	1 (0.3)	0 (0.0)
Netherlands	5 (1.4)	6 (1.7)	1 (0.3)
New Zealand	1 (0.3)	0 (0.0)	0 (0.0)
Nigeria	0 (0.0)	0 (0.0)	1 (0.3)
Norway	0 (0.0)	2 (0.6)	0 (0.0)
Pakistan	0 (0.0)	0 (0.0)	1 (0.3)
Poland	49 (13.9)	45 (12.8)	47 (13.8)
Portugal	61 (17.3)	59 (16.8)	62 (18.2)
Qatar	1 (0.3)	0 (0.0)	0 (0.0)
Republic of Ireland	2 (0.6)	0 (0.0)	1 (0.3)
Romania	2 (0.6)	0 (0.0)	1 (0.3)
Slovakia	0 (0.0)	0 (0.0)	1 (0.3)
Slovenia	4 (1.1)	1 (0.3)	1 (0.3)
Somalia	0 (0.0)	0 (0.0)	1 (0.3)
South Africa	77 (21.9)	85 (24.1)	77 (22.6)
South Sudan	0 (0.0)	0 (0.0)	1 (0.3)
Spain	13 (3.7)	13 (3.7)	9 (2.6)
Sweden	3 (0.9)	1 (0.3)	1 (0.3)
Switzerland	3 (0.9)	0 (0.0)	1 (0.3)
Syria	1 (0.3)	0 (0.0)	0 (0.0)
Taiwan	1 (0.3)	0 (0.0)	0 (0.0)
Turkey	0 (0.0)	1 (0.3)	0 (0.0)
Ukraine	1 (0.3)	1 (0.3)	0 (0.0)
United Arab Emirates	0 (0.0)	1 (0.3)	0 (0.0)
United Kingdom	7 (2.0)	16 (4.5)	16 (4.7)

United States	1 (0.3)	3 (0.9)	2 (0.6)
Zimbabwe	4 (1.1)	0 (0.0)	2 (0.6)

Appendix B: Other Tables and Figures

Table B1 Participant dropouts at different experimental stages by treatment group

Stage	Equal Treatments	Unequal-Merit Treatment	Unequal-Luck Treatment	Total Dropouts
Dropouts during Initial Instructions	14	14	16	44
Dropouts during Stag-Hunt Game	0	5	4	9
Dropouts during Prisoner's Dilemma Game	2	2	3	7
Dropouts during Trust Game*	29	33	43	105
Dropouts during Final Questionnaire	0	1	2	3
Total Dropouts	**45**	**55**	**68**	**168**

* The high dropout rate during the trust game was primarily driven by participants' failure to pass the validation check question. This game also had higher cognitive demands and a longer completion time than the stag-hunt game and the prisoner's dilemma, which likely contributed to additional attrition. Importantly, all games were presented in random order, ruling out systematic ordering effects. Moreover, since participants learned their final earnings only at the end of the experiment, selective dropout based on performance is unlikely.

We examined how participants' decisions in the trust game differ between symmetric and asymmetric conditions, broken down by participant endowment, as shown in Table B2. Both *rich* and *poor* participants exhibit higher trust levels under symmetric pairings. This is evident from the positive values in the Δ trust measure. Trustworthiness, however, shows a more nuanced pattern. *Poor* participants display higher return rates under symmetry, aligning with the trust behaviour. *Rich* participants, conversely, demonstrate higher trustworthiness when interacting with *poor* counterparts compared to interactions with other *rich* participants. Notably, the source of inequality does not significantly influence the differences in decision-making patterns we observed.

Table B2 Difference in decisions between symmetric and asymmetric pairings in the trust game

		Merit	Luck	Wilcoxon Rank Sum p-value
Δ Trust [Symmetric – Asymmetric]	**[Poor-Poor] – [Poor-Rich]**	2.86% (20.26)	3.15% (21.72)	0.530
	[Rich-Rich] – [Rich-Poor]	0.89% (16.37)	0.8% (18.2)	0.887
Δ Trustworthiness [Symmetric – Asymmetric]	**[Poor-Poor] – [Poor-Rich]**	2.36% (11.3)	2.8% (10.82)	0.347
	[Rich-Rich] – [Rich-Poor]	-0.47% (14.23)	-2.36% (16.1)	0.103

Note: Figures in parentheses are standard deviations

Table B3 Results of Ordinary Least Square (OLS) regression models to explain trustworthiness in the trust game, categorised by pairing types

	Poor-Poor pairings		**Poor-Rich pairings**		**Rich-Rich pairings**		**Rich-Poor pairings**	
	(1)	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Intercept	40.176*** (1.263)	24.431** (11.624)	37.817*** (1.290)	25.454** (12.024)	42.940*** (1.548)	41.316* (22.540)	43.409*** (1.713)	38.111 (25.103)
Luck dummy	1.568 (1.832)	0.075 (2.046)	1.127 (1.871)	-0.387 (2.116)	-1.422 (2.103)	1.266 (2.362)	0.468 (2.326)	3.308 (2.630)
Encoding Score		0.275 (0.189)		0.315 (0.195)		0.484 ** (0.203)		0.577 ** (0.226)
Control for Demographics^, Prior experience with experiments, SDO and RWA scores	No	Yes	No	Yes	No	Yes	No	Yes
Control for Order Effects	No	Yes	No	Yes	No	Yes	No	Yes
Obs.	347	347	347	347	345	345	345	345
R^2 / R^2 adjusted	0.002 / 0.001	0.085 / 0.020	0.001 /0.002	0.060 / 0.007	0.001 / 0.002	0.135 / 0.073	0.000 / 0.003	0.122 / 0.059

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; ^ Demographic variables include age, gender, education and employment
Note: Figures in parentheses are standard errors

Table B4 Results of Linear Mixed Effects Probit Regression models to explain decision made in the stag-hunt game and the prisoner's dilemma

Regressors	**Investment Rate Invest = 1; Keep = 0**			**Taking Rate Take = 1; Not take = 0**		
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**
Fixed Effects						
Intercept	0.521 *** (0.069)	0.504 *** (0.081)	0.87 (0.661)	0.311 *** (0.062)	0.392 *** (0.074)	0.299 (0.614)
Luck dummy	0.064 (0.092)	0.062 (0.092)	0.045 (0.092)	0.07 (0.085)	0.084 (0.085)	0.081 (0.085)
Rich status		0.037 (0.092)	-0.074 (0.098)		-0.178 ** (0.086)	-0.119 (0.092)
Encoding Score			0.009 (0.008)			-0.012 (0.008)
Control for Demographics^, Prior experience with experiments, SDO and RWA scores	No	No	Yes	No	No	Yes
Control for Order Effects	No	No	Yes	No	No	Yes
Random Effects						
Participant ID Variance	0.40	0.40	0.33	0.29	0.29	0.24
Participants / Obs. [a]	692 / 1384	692 / 1384	692 / 1384	692 / 1384	692 / 1384	692 / 1384
AIC	1724.758	1726.601	1719.37	1827.5	1825.161	1825.892
Marginal R^2 / Conditional R^2	0.001 / 0.284	0.001 / 0.285	0.069 / 0.299	0.001 / 0.227	0.007 / 0.228	0.161 / 0.326

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; ^ Demographic variables include age, gender, education and employment
Note: Figures in parentheses are standard errors

Table B5 Results of Probit regression models to explain 'investment rate' in the stag-hunt game, categorised by pairing types

	Poor-Poor pairings		**Poor-Rich pairings**		**Rich-Rich pairings**		**Rich-Poor pairings**	
	(1)	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Intercept	0.502 ***	0.393	0.308 ***	1.820 **	0.625 ***	4.964	0.273 ***	4.854
	(0.097)	(0.932)	(0.095)	(0.910)	(0.107)	(376.75)	(0.101)	(235.03)
Luck dummy	0.158	0.031	-0.023	-0.112	0.045	0.021	0.033	-0.013
	(0.144)	(0.167)	(0.137)	(0.159)	(0.146)	(0.176)	(0.138)	(0.164)
Encoding Score		0.032 **		0.029 **		-0.006		-0.005
		(0.016)		(0.015)		(0.015)		(0.014)
Control for Demographics^, Prior experience with experiments, SDO and RWA scores	No	Yes	No	Yes	No	Yes	No	Yes
Control for Order Effects	No	Yes	No	Yes	No	Yes	No	Yes
Obs.	347	347	347	347	345	345	345	345
Nagelkerke R^2	0.005	0.16	0	0.145	0	0.124	0	0.101
AIC	415.876	419.995	465.933	470.759	397.844	411.521	463.962	481.369

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; ^ Demographic variables include age, gender, education and employment
Note: Figures in parentheses are standard errors

Table B6 Results of Probit regression models to explain 'taking rate' in the prisoner's dilemma, categorised by pairing types

	Poor-Poor pairings		Poor-Rich pairings		Rich-Rich pairings		Rich-Poor pairings	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Intercept	-0.028	-0.402	0.615 ***	1.488	0.159	5.572	0.340 ***	4.259
	(0.093)	(0.944)	(0.100)	(0.958)	(0.100)	(235.03)	(0.102)	(376.75)
Luck dummy	0.250*	0.361**	0.143	0.112	0.05	-0.023	-0.158	-0.191
	(0.135)	(0.159)	(0.147)	(0.176)	(0.136)	(0.161)	(0.137)	(0.165)
Encoding Score		-0.028 *		0.004		-0.021		-0.011
		(0.015)		(0.017)		(0.014)		(0.014)
Control for Demographics^, Prior experience with experiments, SDO and RWA scores	No	Yes	No	Yes	No	Yes	No	Yes
Control for Order Effects	No	Yes	No	Yes	No	Yes	No	Yes
Obs.	347	347	347	347	345	345	345	345
Nagelkerke R^2	0.013	0.126	0.004	0.153	0.001	0.095	0.005	0.156
AIC	479.833	492.821	391.662	398.793	474.57	493.335	467.06	470.073

*** p <0.01, ** p < 0.05, * p <0.1; ^ Demographic variables include age, gender, education and employment
Note: Figures in parentheses are standard errors

Table B7 Participants' response to which endowment allocation process do they find to be the "fairest"

			Which endowment allocation process is the fairest?			
Treatment	**Endowment**	**Obs.**	**Egalitarian**	**Luck**	**Merit**	**Uncertain**
Equal	**Poor**	163	38.65%	7.98%	47.85%	5.52%
	Rich	189	44.44%	4.76%	46.03%	4.76%
	All	352	41.76%	6.25%	46.88%	5.11%
Unequal-Luck	**Poor**	165	39.39%	16.36%	35.15%	9.09%
	Rich	187	35.83%	19.79%	35.29%	9.09%
	All	352	37.50%	18.18%	35.23%	9.09%
Unequal-Merit	**Poor**	182	31.32%	12.09%	45.60%	10.99%
	Rich	158	16.46%	5.70%	70.25%	7.59%
	All	340	24.41%	9.12%	57.06%	9.41%
All participants	**Poor**	510	36.27%	12.16%	42.94%	8.63%
	Rich	534	33.15%	10.30%	49.44%	7.12%
	All	1,044	34.67%	11.21%	46.26%	7.85%

Appendix C: Supplementary Materials – Experiment Instructions

See attached PDF file titled "Appendix C- Supplementary Materials–Experiment Instructions"