Why people prefer unequal societies

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There is immense concern about economic inequality, both among the scholarly community and in the general public, and many insist that equality is an important social goal. However, when people are asked about the ideal distribution of wealth in their country, they actually prefer unequal societies. We suggest that these two phenomena can be reconciled by noticing that, despite appearances to the contrary, there is no evidence that people are bothered by economic inequality itself. Rather, they are bothered by something that is often confounded with inequality: economic unfairness. Drawing upon laboratory studies, cross-cultural research, and experiments with babies and young children, we argue that humans naturally favour fair distributions, not equal ones, and that when fairness and equality clash, people prefer fair inequality over unfair equality. Both psychological research and decisions by policymakers would benefit from more clearly distinguishing inequality from unfairness.

We live in an age of inequality—or at least in an age of worrying about inequality. Pope Francis remarked that "inequality is the root of social evil", while President Obama called economic inequality "the defining challenge of our time". A recent Pew report found that Europeans and Americans judged inequality as posing the greatest threat to the world, beating religious and ethnic hatred, pollution, nuclear weapons, and diseases like AIDS. A majority of respondents in each of the 44 countries polled said the gap between rich and poor is a big or very big problem facing their country[1]. And a new report by Oxfam[2] revealed that the wealth owned by the eight richest people in the world is equivalent to the wealth owned by the poorest 50% of the world, sparking widespread outrage.

Academics—from philosophers, economists, and political scientists to psychologists, archaeologists, and even physicists—are also fascinated by the causes, consequences, and extent of economic inequality. This interest is reflected in the extent of attention to Thomas Piketty's book, *Capital in the Twenty-First Century*[3,4], and is grounded in a growing public and scholarly appreciation of the startling extent of economic inequality. Globally, the top 1% of the population owns 50% of the wealth, and the bottom 70% owns only 3% of the wealth[5].

Many are particularly concerned about the level of inequality in the United States, which has been growing rapidly since the 1970s[6] (see Fig. 1). The Gini coefficient (a measure of inequality whereby 0 is perfect equality and 100 is perfect inequality, or one person owning all the wealth) in the United States is now 85—the highest of all western nations, and sixth highest worldwide among countries with populations over 1 million (refs [6,7]). A typical American CEO currently makes about 354 times as much as a typical worker, while just 50 years ago the ratio was 20/1[8]. Although the United States has been getting richer overall, the vast majority of this increase in wealth (over 95%) has gone to the top 1% of wealthiest Americans[6].

The concern that people express about inequality is also found in controlled laboratory studies, which find that a desire for equal distributions of goods emerges early in human development and is apparent in many different cultures[9]. As such, Frans de Waal nicely summarizes a broad consensus across many fields when he writes: "Robin Hood had it right. Humanity's deepest wish is to spread the wealth."[10]

A puzzle arises, however, when we consider a largely separate body of research in political psychology and behavioural economics: it turns out that when people are asked about the ideal distribution of wealth in their country, they actually prefer unequal societies[11]. This preference for inequality materializes in a wide range of countries[12,13], across people on opposite sides of the political spectrum[11], and even in adolescents[14]. So, when people are asked to distribute resources among a small number of people in a lab study, they insist on an exactly equal distribution. But when people are asked to distribute resources among a large group of people in the actual world, they reject an equal distribution, and prefer a certain extent of inequality. How can the strong preference for equality found in public policy discussion and laboratory studies coincide with the preference for societal inequality found in political and behavioural economic research?

We argue here that these two sets of findings can be reconciled through a surprising empirical claim: when the data are examined closely, it turns out that there is no evidence that people are actually concerned with economic inequality at all. Rather, they are bothered by something that is often confounded with inequality: economic unfairness.

We should stress that our argument is not that scholars and researchers fail to notice the distinction between inequality and
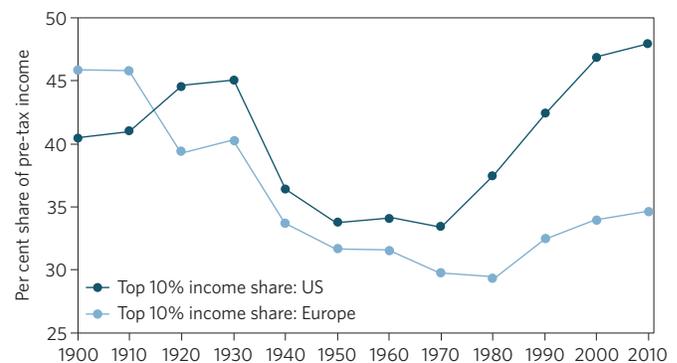
Figure 1 | Income inequality in Europe and the United States, 1900–2010. The graph shows the share of the top income decile in total pre-tax income. Figure adapted with permission from ref. 6, AAAS.

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unfairness. On the contrary, the scientists we cite below are often careful to distinguish equality and fairness in their studies. However, researchers, public figures, and the media often claim that people are specifically concerned about inequality of outcome. Much political discourse frames the problem in terms of growing economic inequality, with no reference to fairness concerns. And, as we discuss immediately below, many experimental studies claim to have discovered 'inequality aversion' or 'egalitarian motives'. We leave open the question of whether these researchers intend to claim that there is evidence for a specific aversion to inequality, above and beyond an aversion to fairness, or whether this is just 'loose talk'. However, to our knowledge, none of these researchers have made the specific claim we wish to make here: that there is no empirical evidence so far that people have any aversion to inequality itself.

We suggest that the perception that there is a preference for equality arises through an undue focus on special circumstances, often studied in the laboratory, where inequality and unfairness coincide. In most situations, however, including those involving real-world distributions of wealth, people's concerns about fairness lead them to favour unequal distributions.

An equality bias in the lab

Anyone looking for evidence that people have a natural aversion to inequality will find numerous laboratory studies that seemingly confirm their view. For example, studies have found "a universal desire for more equal pay"[12], "egalitarian motives in humans"[15], "egalitarianism in young children"[16], and that "equality trumps reciprocity"[17]. A Google Scholar search for "inequality aversion" yields over 10,000 papers that bear on this topic.

And, indeed, when subjects in laboratory studies are asked to divide resources among unrelated individuals, they tend to divide them equally[18,19]. If a previous situation has led to a pre-existing inequality, people will divide future resources unequally in order to correct or minimize the inequality between others[15,17]. This bias is so powerful that subjects sometimes prefer equal outcomes in which everyone gets less overall to unequal outcomes where everyone gets more overall[15,20,21]. The desire for equality, even at the expense of better average consequences, appears in non-monetary domains as well. For example, people object to medical interventions that would save more lives overall by reducing cure rates for a small group of people and increasing cure rates for a larger group of people[22].

Furthermore, people appear to view the equal distribution of resources as a moral good; they express anger toward those who benefit from unequal distributions[15]. This outrage is sufficiently strong that subjects will pay to punish unequal distributors[23]. One study examining this across 15 diverse cultures found that members of all populations demonstrated some willingness to administer costly third-party punishment for unequal division of resources (costing themselves the equivalent of a half-day's wages in some cases)—although the magnitude of this punishment varied substantially across populations[24,25]. Moreover, people expect others to engage in this kind of costly third-party punishment for those that make unequal offers[23].

Studies of children between the ages of three and eight years find a similar equality bias[26,16]. Three-year-olds divide resources equally among third parties[27,28], and, although they are typically selfish when they themselves are involved in the interaction, even three-year-olds report that they should share equally[29].

Six-year-olds show an even stronger commitment to equal distribution, insisting on throwing out extra resources rather than allowing them to be unequally distributed between two absent third parties[28,30]. In one study, six- to eight-year-olds were tasked with distributing erasers to two boys who had cleaned up their room. When there was an odd number of erasers, children insisted that

the experimenter should throw the extra eraser in the trash rather than establish an unequal division[28,31]. They responded this way even if the recipients would never know that one of them received less, suggesting that children weren't worried about the recipients' feelings, but were opposed to creating the inequality even if none of the recipients knew about it[28]. Even more tellingly, children are just as likely to reject unequal distributions when they reflect generosity (the distributor gave up all her candies to the receiver) as when they reflect selfishness (the distributor kept all the candies for herself). This suggests that the rejections are specifically an aversion to inequality, rather than punishing selfishness[30].

This bias shows up not only in children's behaviour, but also in their evaluations of others. In one study, six- to eight-year-old children were asked who they liked better: someone who split four erasers equally between the participant and another child, or someone who gave all four erasers to the participant. Children reported liking the equal distributor more than someone who gave them more than the other child[32].

Some suggestive evidence for a similar bias shows up in babies and toddlers. When twelve-month-old infants saw a puppet distribute two items to two other puppets, they looked at the scene longer when the distributor gave both toys to one puppet than when she gave the puppets one toy each, suggesting that they were surprised by the unequal distribution[33–35]. Infants not only expect people to equally distribute resources, they also actively prefer those who do. After watching two puppets distribute equally or unequally, 16-month-olds preferred to approach the equal distributor[34].

An inequality bias in the real world

Given these findings, one might expect that when people are asked to distribute resources across a real-world group of people, they would choose an equal distribution of resources across all segments of society. But they do not.

A recent study by Norton and Ariely[11] received well-deserved media attention, as it showed that people both underestimate the amount of inequality in our society and prefer a more egalitarian society to the one they think they live in. The authors describe their studies as examining "disagreements about the optimal level of wealth inequality", and report the finding of "a surprising level of consensus: all demographic groups—even those not usually associated with wealth redistribution such as Republicans and the wealthy—desired a more equal distribution of wealth than the status quo". And an article by Ariely in *Atlantic* was titled, "Americans want to live in a much more equal country (they just don't realize it)"[36].

These summaries are accurate: participants in these studies did prefer more equality than the current situation. But the results also suggest that they were not particularly worried about large inequalities. Instead, these subjects claimed that, in the perfect society, individuals in the top 20% should have more than three times as much money as individuals in the bottom 20% (see Fig. 2). And when they were given a forced choice between equal and unequal distributions of wealth, and told to assume that they would be randomly assigned to be anyone from the richest to the poorest person (that is, a 'veil of ignorance'[37]), over half of the subjects explicitly rejected the option of an equal distribution of wealth, preferring inequality[11]. Thus, the data suggest that when it comes to real-world distributions of wealth, people have a preference for a certain amount of inequality.

This preference for inequality materializes in 16 other countries[12,13], across people on both the left and right of the political spectrum[11], and in teenagers[14]. As Norton[38] puts it, "people exhibit a desire for unequality—not too equal, but not too unequal".

Indeed, these data might underestimate people's preferences for unequal distributions. One follow-up study[39] contrasted Norton and Ariely's question about the percentage of wealth that should correspond to each quintile of the American population with a question about what the average wealth should be in each quintile.

Figure 2 | The actual US wealth distribution plotted against the estimated and ideal distributions across all respondents. Because of their small percentage share of total wealth, both the fourth 20% value (0.2%) and the bottom 20% value (0.1%) are not visible in the actual distribution. Figure adapted with permission from ref. 11, SAGE.

The former question resulted in an ideal ratio of poorest to wealthiest of about 1/4, but for the latter question the ratio jumped to 1/50. When the connection between the two questions was explained to participants, a majority chose the higher inequality ratio as reflecting their actual beliefs for both measures.

Fairness in the lab
How can this preference for inequality in the real world be reconciled with the strong preference for equality found in laboratory studies? We suggest that this discrepancy arises because the laboratory findings reviewed above—which report the discovery of egalitarian motives, a desire for more equality, or inequality aversion—do not in fact provide evidence that an aversion to inequality is driving the preference for equal distribution. Instead, these findings are all consistent with both a preference for equality and with a preference for fairness, because the studies are designed so that the equal outcome is also the fair one. This is because the recipients are indistinguishable with regard to considerations such as need and merit. Hence, whether subjects are sensitive to fairness or to equality, they will be inclined to distribute the goods equally.

This idea is supported by numerous studies, including follow-ups of the experiments described above, by the same researchers, in which fairness is carefully distinguished from equality. These studies find that people choose fairness over equality. For example, in the study in which children had to award erasers to two boys who had cleaned up their room and chose to throw out the extra eraser, both boys were described as having done a good job. But when children were told that one boy did more work than the other, they awarded the extra eraser to the hard worker[28,40]. In fact, when one recipient has done more work, six-year-olds believe that he or she should receive more resources, even if equal pay is an option[26,41–43]. Likewise, although infants prefer equality in a neutral circumstance, they expect an experimenter to distribute rewards preferentially to individuals who have done more work[35].

This preference for inequality is not restricted to situations where one person has done more work, but also extends to rewarding people who previously acted helpfully or unhelpfully. When three-year-olds witnessed a puppet help another puppet climb a slide or reach a toy, they later allocated more resources to the helpful puppet than to a puppet that pushed another down the slide, or hit him on the head with the toy[44].

As a final twist, consider a situation with two individuals, identical in all relevant regards, where one gets 10 dollars and the other gets nothing. This is plainly unequal, but is it fair? It can be, if the allocation was random. Adults consider it fair to use impartial procedures such as coin flips and lotteries when distributing many different kinds of resources[45]. Children have similar views. In the erasers-for-room-cleaning studies described above, if children are given a fair 'spinner' to randomly choose who gets the extra eraser, they are happy to create inequality[46]. One person getting two erasers and another getting one (or ten and zero for that matter) can be entirely fair and acceptable, although it is clearly not equal.

Fairness in the real world
It follows, then, that if one believes that (a) people in the real world exhibit variation in effort, ability, moral deservingness, and so on, and (b) a fair system takes these considerations into account, then a preference for fairness will dictate that one should prefer unequal outcomes in actual societies. The ideal distributions of wealth proposed by participants in the Norton and Ariely study, then, may reflect how fairness preferences interact with intuitions about the extent to which such traits vary in the population.

Tyler[47] uses a related argument to explain why there is not a stronger degree of public outrage in the face of economic inequality. He argues that Americans regard the American market system to be a fair procedure for wealth allocation, and, accordingly, believe strongly in the possibility of social mobility (see Box 1). On this view, then, people's discontent about the current social situation will be better predicted by their beliefs about the unfairness of wealth allocation than by their beliefs about inequality.

We have argued that a preference for fair outcomes is early emerging and universal. But it is also clear that people differ in their intuitions as to which resources should be distributed on the basis of merit. Most Americans now believe that a fair system is one in which every adult gets a vote, but this is a relatively modern intuition. In our own time, there is controversy over whether fairness dictates that everyone should have equal access to health care and higher education. Put differently, there is some disagreement over what should be a right, held equally and unchanged by any sort of variation in merit.

There are also political and cultural differences. Norton and Ariely[11] found that women, Democrats, and the poor desired relatively more equal distributions than men, Republicans, and the wealthy, and were also more accurate in estimating the extent of current inequality. Or consider that a recent survey of wealthy technology entrepreneurs in Silicon Valley found that all predicted that a strict meritocracy, where everyone's income was strictly proportional to their productivity, would result in an extremely unequal society, with the top 10% earning more than 50% of the nation's wealth[48]. This intuition is probably considerably more extreme than one would find in a more typical sample. Looking outside of the United States and Europe, it is clear that there are wide differences in fairness concerns across world cultures[25,49–52].

Finally, there are developmental differences. While even the youngest infants tested show some sensitivity to fairness over

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Box 1 | Non-fairness motivations for inequality.

In addition to concerns about the unfairness of an equal distribution, people might have other motivations for preferring an unequal distribution of wealth in their society. Here we consider two such motivations more closely: a selfish desire to have more than others, and a belief that inequality is necessary to allow for mobility.

Selfishness

One consideration underlying an inequality preference has little to do with an abstract desire for fairness, but instead reflects a desire to have more than others. Obviously people have selfish motivations, but what is interesting here is that these desires are not always for increasing one's absolute amount, but are often for increasing one's standing relative to others[78–80]. For example, studies of income and happiness have revealed that, once a basic level of wealth is achieved, relative wealth is more important for overall happiness[81–83]. Similarly, a vast body of research in social psychology finds that people engage in constant comparison of themselves with others[84,85]. Knowing that one's income is much higher (or lower) than that of a neighbour has a substantial impact on happiness[80]. As Gore Vidal put it, "every time a friend succeeds I die a little".

This motivation for relative advantage can motivate a desire for unequal distributions. Indeed, to achieve the warm glow associated with relative advantage, people are even willing to pay a cost themselves to reduce others' incomes[86]. Even young children show this relative advantage-seeking behaviour. Five-year-olds often reject equal payouts of two prize tokens for themselves and two prize tokens for another child, and choose instead only one token for themselves, if that means that the other child will get none[87]. That is, the inequality associated with relative advantage is so appealing that it overrides both a desire for fairness and a desire for absolute gain.

Motivation and mobility

A further motivation for inequality may come from the idea that inequality is necessary to motivate industriousness and allow for social mobility. For example, Norton[38] argues that people prefer inequality because they see it as a motivating force that leads people to work harder and better, knowing that doing so can improve their station in life, and that of their children.

This belief entails a sort of meritocratic mobility, and, indeed, such mobility is a necessary condition for an unequal society to be a fair one. After all, a society lacking mobility is a society in which those born into poverty remain in poverty, regardless of their hard work and ingenuity. Hence, unless people view merit as being entirely heritable, fairness requires mobility. Not surprisingly, then, a belief in meritocratic mobility is associated with more tolerance for inequality, as reflected in less discomfort with existing wealth inequality, less support for the redistribution of educational resources, and less willingness to support raising taxes on the rich[88].

From this perspective, cultural differences in expectations about mobility may account for differences in tolerance of inequality across cultures. For example, Americans might have an unreasonable tolerance for inequality in part because they tend to overestimate the extent of mobility in the United States[77], which is in fact lower than in places like Canada and most of Europe[89–92]. One reason for this lack of mobility is that the income distribution in the United States—the distance between the poorest and richest citizens—is much greater than in rival countries. Moving from the tenth percentile to the ninetieth percentile in Denmark requires a US$45,000 increase in income, but making the same jump in the United States would require an increase of US$93,000 (ref. [93]). And the situation is not improving—while 92% of American children born in 1940 would go on to earn more than their parents, only 50% of children born in 1980 have done so[94].

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equality[35], young children may place a greater emphasis on an equality 'heuristic' than do older children[53–55]. Indeed, the relative weighting of various factors that can justify inequality—such as luck, effort, and skill—develops even through adolescence[56].

Why fairness is central

We are hardly the first to posit a universal moral concern with fairness. For instance, fairness is claimed to be one of the universal foundations of morality by scholars working in moral foundation theory[52,57], and has been argued by many developmental and comparative psychologists to be a universal and unlearned human capacity[10,58]. The universality of this concern raises the question of its evolutionary history.

Under one analysis, a desire for fairness—such as fair distribution of food to the members of a group—can be seen as a prosocial motivation, evolved to constrain our natural selfishness. A propensity to favour fair distributions is sometimes seen as arising because it benefits the group, a proposal developed in the context of cultural group selection[59] and, more controversially, genetic group selection[60,61]; see refs [62,63] for critical discussions. But a sensitivity to fairness might also benefit individuals, consistent with a more standard evolutionary approach. For example, fairness may serve as a signal of impartiality, avoiding the problems of signalling favouritism to one coalition over another[64,65].

But these analyses don't provide an explanation for why a propensity toward and sensitivity to fairness would emerge, as opposed to a presumably simpler equality bias. One proposal is that fairness intuitions are rooted in adaptations for differentially responding to the prosocial and antisocial actions of others. For cooperation and

prosociality to evolve, there has to be some solution to the problem of free-riders, cheaters, and bad actors. The usual explanation for this is that we have evolved a propensity to make bad behaviour costly and good behaviour beneficial, through punishment and reward[66,67]. That is, we respond differently to individuals based on what one can see as their 'deservingness'—responses that are present even in infants[68]. It's possible that fairness intuitions more generally develop from this moral foundation.

A related proposal focuses on shunning selfish individuals, rather than punishing them. When individuals can choose the people with whom they interact for mutually beneficial tasks, cooperative individuals gain benefits from being included and selfish individuals lose out on those benefits by being shunned[69,70]. But individuals who are too cooperative—too generous—run the risk of being taken advantage of by others[71]. So a balance must be struck. To treat everyone equally would entail penalization of more productive individuals when they collaborate with less productive individuals relative to highly productive individuals. In contrast with equality, fairness allows individuals with different levels of productivity to share the benefits of their collaboration proportionately[72]. This focus on fairness is particularly important for humans (compared with even our closest evolutionary relatives), due to the critical importance of collaboration in human hunting and foraging[73].

Conclusions and future directions

Here we have explored the notion that, contrary to appearances, people are not troubled by inequality for its own sake; indeed, they often prefer unequal distributions, both in laboratory conditions and in the real world. What really troubles people about the world
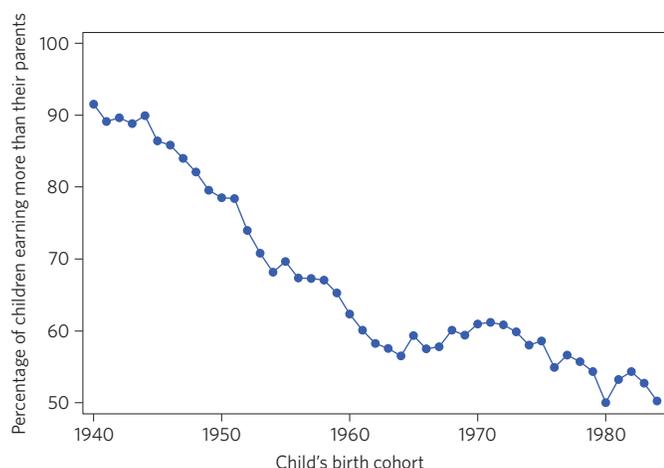
Figure 3 | Percentage of children earning more than their parents, by birth year. Figure adapted with permission from ref. 94, National Bureau of Economic Research.

we live in today are considerations that are related to inequality (see Box 2), such as adverse social consequences, a corrosion of democratic ideals, poverty, and, of most interest to us here, unfairness.

Indeed, we believe that there is no evidence so far that children or adults possess any general aversion to inequality. A related case against a focus on equality has been made recently by Frankfurt[74], who argues on normative grounds that people shouldn't care about reducing inequality. What really matters, he argues, is that everyone has a sufficient amount to live a decent life. Frankfurt acknowledges that a focus on improving the situation of the most needy may reduce inequality as a side effect, but argues that this reduction is not, in itself, a moral good.

Our own argument against a focus on inequality is a psychological one. In this paper we have outlined a wealth of empirical evidence suggesting that people don't care about reducing inequality *per se*. Rather, people have an aversion toward unfairness, and under certain special circumstances this leads them to reject unequal distributions. In other conditions, including those involving real-world distributions of wealth, it leads them to favour unequal distributions. In the current economic environment in the United States and other wealthy nations, concerns about fairness happen to lead to a preference for reducing the current level of inequality. However, in various other societies across the world and across history (for example, when faced with the communist ideals of the former USSR), concerns about fairness lead to anger about too much equality. To understand these opposite drives, one needs to focus not on whether the system results in a relatively equal or unequal distribution of wealth, but whether it is viewed as fair.

Of course, it may be that there really is a preference for equal outcomes that exists above and beyond a preference for fair outcomes. But to explore this, researchers need to construct studies that carefully distinguish equality from other related considerations. For example, perhaps if a procedure results in too large an inequality, people would be motivated to reduce that inequality, even if they believe the procedure to be fair and the inequality to have no other consequences. This is an empirical question.

Furthermore, the idea that people's discontent with the current distribution of wealth has to do with fairness, rather than inequality itself, opens up a wealth of new questions about which factors (for example, hard work, skill, need, morality) are psychologically relevant for fair distributions. In particular, the developmental trajectory of concerns for these different factors is largely unexplored, including questions relating to how children determine which factors are relevant to resource distribution (for example, effort, need,

Box 2 | Consequences of inequality.

While concerns about fairness, along with other considerations, may motivate a preference for inequality, there are, of course, various countervailing psychological forces that lead to an equality preference. One of these forces is a worry about the consequences of an unequal society. That is, even if people have no problem with inequality itself, it might have negative consequences that people are motivated to avoid.

For one thing, as inequality increases, self-reported happiness diminishes, especially among the bottom 40% of income earners[95]. One reason for this is that relative disadvantage has a larger negative impact on well-being than relative advantage has a positive impact[96]. When people know where they stand in the overall income distribution, those on the lower end of the scale report less job satisfaction, but those on the higher end of the scale do not report any greater satisfaction[97]. This has negative effects for productivity too: workers who know they are on the low side of the distribution decrease their effort, but knowing that one is on the high end does not lead to an increase in effort[98].

Still, as Tyler[47] points out, it is not clear whether the corrosive effects of inequality on happiness are due to inequality *per se,* or due to the perception of unfair inequality. That is, it is an open question whether people who get less than others would suffer decreases in happiness and productivity if they believed that they were in a fair system, one in which increased efforts on their part could lead to social mobility.

Nevertheless, inequality in a society also predicts a greater degree of violence, obesity, teenage pregnancy, and interpersonal distrust[99]. Areas of the United States with high income inequality also tend to have higher divorce and bankruptcy rates than areas with more egalitarian income distributions[100] and they suffer from higher homicide rates[101]. Similar negative effects show up in laboratory studies with simulated public goods games in which the extent of inequality is set by the researchers—when the inequities are made salient, there is less cooperation and inter-connectedness[102].

and so on) and which are not (for example, height). Emphasizing the role of fairness intuitions in population-level distribution preferences also raises some interesting and under-explored psychological questions relating to how people perceive the existing distribution of factors such as merit, skill, and deservingness in their societies.

What about practical implications? As with most psychological claims of this sort, our proposal has, at best, indirect implications for public policy. Even if the average individual desires a somewhat unequal society, one might argue that people are mistaken in what they want. Perhaps people would actually be better off in a perfectly equal society—they just don't know it. Also, even if it is assumed that people are correct in their desires for a society with some economic diversity (but not as much as we currently have), this doesn't tell us how to achieve such a society. It's perfectly coherent to be in favour of reduced inequality, but against certain plans for redistribution[75].

We do see two implications of this work, however.

First, it's clear that many people are misinformed about how well their society matches their ideals. They are wrong about how much inequality there is, believing the current situation to be much more equal than it actually is[11–12,39], but see ref. [76]. Furthermore, Americans have exaggerated views about the extent of social mobility in the United States[77], and thus the extent to which the current American market system is a fair procedure for wealth allocation. We have argued that views about fairness will be most predictive of discontent with economic inequality, and thus public education on the actual current rate of mobility will help to ensure that people's

moral assessment of the world that they live in is grounded in the relevant facts.

Second, as Frankfurt[74] points out, contemporary political discourse often blurs together various concerns that should be thought of as distinct. Worries about inequality are conflated with worries about poverty, an erosion of basic rights, and—as we have focused on here—unfairness. If it's true that inequality in itself isn't really what is bothering people, then we might be better off by more carefully pulling apart these concerns, and shifting the focus to the problems that matter to us more. The recognition that fairness and equality are different cannot merely be a footnote on empirical studies and cannot be a rarely invoked piece of trivia in political conversations that wrestle with unfairness but frame the conversation in terms of equality. Progress in the lab and in the real world will be facilitated by centring the discussion on exactly what people do care about—fairness—and not on what people do not care about—equality.

References

1. *Emerging and Developing Economies Much More Optimistic than Rich Countries about the Future* (Pew Research Center, 2014).
2. *An Economy for the 99%* (Oxfam, 2017).
3. Piketty, T. *Capital in the Twenty-First Century* (Belknap Press, 2014).
4. The science of inequality. *Science* http://www.sciencemag.org/site/special/inequality/ (2014).
5. Shorrocks, A., Davies, J. & Lluberas, R. *Credit Suisse Global Wealth Report* (Credit Suisse, 2015).
6. Piketty, T. & Saez, E. Inequality in the long-run. *Science* **344,** 838–843 (2014).
7. *Income Inequality Update – June 2014* (OECD, 2014).
8. Mishel, L. & Sabadish, N. *CEO Pay in 2012 was Extraordinarily High Relative to Typical Workers and Other High Earners* (Economic Policy Institute, 2013).
9. Blake, P. R. *et al.* The ontogeny of fairness in seven societies. *Nature* **528,** 258–261 (2015).
10. de Waal, F. *The Age of Empathy: Nature's Lessons for a Kinder Society* (Three Rivers Press, 2010).
11. Norton, M. I. & Ariely, D. Building a better America—one wealth quintile at a time. *Perspect. Psychol. Sci.* **6,** 9–12 (2011).
12. Kiatpongsan, S. & Norton, M. I. How much (more) should CEOs make? A universal desire for more equal pay. *Perspect. Psychol. Sci.* **9,** 587–593 (2014).
13. Norton, M. I., Neal, D. T., Govan, C. L., Ariely, D. & Holland, E. The not-so-common-wealth of Australia: evidence for a cross-cultural desire for a more equal distribution of wealth. *Anal. Soc. Issues Public Policy* **14,** 339–351 (2014).
14. Arsenio, W., Preziosi, S., Silberstein, E. & Hamburger, B. Adolescents' perceptions of institutional fairness: relations with moral reasoning, emotions, and behaviour. *New Dir. Youth Dev.* **136,** 95–110 (2013).
15. Dawes, C. T., Fowler, J. H., Johnson, T., McElreath, R. & Smirnov, O. Egalitarian motives in humans. *Nature* **446,** 794–796 (2007).
16. Fehr, E., Bernhard, H. & Rockenbach, B. Egalitarianism in young children. *Nature* **454,** 1079–1083 (2008).
17. Xiao, E. & Bicchieri, C. When equality trumps reciprocity. *J. Econ. Psychol.* **31,** 456–470 (2010).
18. Deutsch, M. Equity, equality, and need: what determines which value will be used as the basis of distributive justice? *J. Soc. Issues* **31,** 137–149 (1975).
19. Harris, R. J. & Joyce, M. A. What's fair? It depends on how you phrase the question. *J. Pers. Soc. Psychol.* **38,** 165–179 (1980).
20. Cooper, D. & Kagel, J. H. in *Handbook of Experimental Economics* Vol. 2 (eds Kagel, J. H & Roth, A. E.) Ch. 4 (Princeton Univ. Press, 2009).
21. Mitchell, G. Judgments of social justice: compromises between equality and efficiency. *J. Pers. Soc. Psychol.* **65,** 629–639 (1993).
22. Baron, J. Blind justice: fairness to groups and the do-no-harm principle. *J. Behav. Decis. Making* **8,** 71–83 (1995).
23. Fehr, E. & Fischbacher, U. Third-party punishment and social norms. *Evol. Hum. Behav.* **25,** 63–87 (2004).
24. Henrich, J. *et al.* "Economic man" in cross-cultural perspective: behavioral experiments in 15 small-scale societies. *Behav. Brain Sci.* **28,** 795–815 (2005).
25. Henrich, J. Markets, religion, community size, and the evolution of fairness and punishment. *Science* **327,** 1480–1484 (2010).
26. Damon, W. *The Social World of the Child* (Jossey-Bass, 1979).
27. Olson, K. R. & Spelke, E. S. Foundations of cooperation in young children. *Cognition* **108,** 222–231 (2008).
28. Shaw, A. & Olson, K. R. Children discard a resource to avoid inequity. *J. Exp. Psychol. Gen.* **141,** 382–395 (2012).
29. Smith, C. E., Blake, P. R. & Harris, P. L. I should but I won't: why young children endorse norms of fair sharing but do not follow them. *PLoS ONE* **8,** e59510 (2013).
30. McAuliffe, K., Jordan, J. J. & Warneken, F. Costly third-party punishment in young children. *Cognition* **134,** 1–10 (2015).
31. Blake, P. R. & McAuliffe, K. "I had so much it didn't seem fair": eight-year-olds reject two forms of inequity. *Cognition* **120,** 215–224 (2011).
32. Shaw, A., DeScioli, P. & Olson, K. R. Fairness versus favoritism in children. *Evol. Hum. Behav.* **33,** 736–745 (2012).
33. Geraci, A. & Surian, L. The developmental roots of fairness: infants' reactions to equal and unequal distributions of resources. *Dev. Sci.* **14,** 1012–1020 (2011).
34. Schmidt, M. F. H. & Sommerville, J. A. Fairness expectations and altruistic sharing in 15-month-old human infants. *PLoS ONE* **6,** e23223 (2011).
35. Sloane, S., Baillargeon, R. & Premack, D. Do infants have a sense of fairness? *Psychol. Sci.* **23,** 196–204 (2012).
36. Ariely, D. Americans want to live in a much more equal country (they just don't realize it). *The Atlantic* (2 August 2012).
37. Rawls, J. *A Theory of Justice* (Harvard Univ. Press, 1971).
38. Norton, M. I. Unequality: who gets what and why it matters. *Policy Insights Behav. Brain Sci.* **1,** 151–155 (2014).
39. Eriksson, K. & Simpson, B. What do Americans know about inequality? It depends on how you ask them. *Judgm. Decis. Mak.* **7,** 741–745 (2012).
40. Baumard, N., Mascaro, O. & Chevallier, C. Preschoolers are able to take merit into account when distributing goods. *Dev. Psychol.* **48,** 492–498 (2012).
41. Sigelman, C. K. & Waitzman, K. A. The development of distributive justice orientations: contextual influences on children's resource allocations. *Child Dev.* **62,** 1367–1378 (1991).
42. Kanngiesser, P. & Warneken, F. Young children consider merit when sharing resources with others. *PLoS ONE* **7,** e43979 (2012).
43. Hamann, K., Bender, J. & Tomasello, M. Meritocratic sharing is based on collaboration in 3-year-olds. *Dev. Psychol.* **50,** 121–128 (2014)
44. Kenward, B., Dahl, M. Preschoolers distribute scarce resources according to the moral valence of recipients' previous actions. *Dev. Psychol.* **47,** 1054–1064 (2011).
45. Kimbrough, E. O., Sheremeta, R. M. & Shields, T. W. When parity promotes peace: resolving conflict between asymmetric agents. *J. Econ. Behav. Organ.* **99,** 96–108 (2014).
46. Shaw, A. & Olson, K. Fairness as partiality aversion: the development of procedural justice. *J. Exp. Child Psychol.* **119,** 40–53 (2014).
47. Tyler, T. Procedural justice shapes evaluations of income inequality: commentary on Norton and Ariely (2011). *Perspect. Psychol. Sci.* **6,** 15–16 (2011).
48. Ferenstein, G. I quizzed dozens of Silicon Valley elites about inequality. Here's what they told me. *Vox* http://go.nature.com/2lWVaaO (2016).
49. Rochat, P. *et al.* Fairness in distributive justice in 3-and 5-year-olds across seven cultures. *J. Cross Cult. Psychol.* **40,** 416–442 (2009).
50. House, B. R. *et al.* Ontogeny of prosocial behavior across diverse societies. *Proc. Natl Acad. Sci. USA* **110,** 14586–14591 (2013).
51. Schäfer, M., Haun, D. B. M. & Tomasello, M. Fair is not fair everywhere. *Psychol. Sci.* **26,** 1252–1260 (2015).
52. Haidt, J. *The Righteous Mind: Why Good People Are Divided by Politics and Religion* (Penguin, 2012).
53. Sheskin, M. *et al.* Some equalities are more equal than others: quality equality emerges later than numerical equality. *Child Dev.* **87,** 1520–1528 (2016).
54. McCrink, K., Bloom, P. & Santos, L. R. Children's and adults' judgments of equitable resource distributions. *Dev. Sci.* **13,** 37–45 (2010).
55. Chernyak, N. & Sobel, D. M. Equal but not always fair: value-laden sharing in preschool-aged children. *Soc. Dev.* **25,** 340–351 (2015).
56. Almås, I., Cappelen, A. W., Sørensen, E. Ø. & Tungodden, B. Fairness and the development of inequality acceptance. *Science* **328,** 1176–1178 (2010).
57. Haidt, J. & Joseph, C. Intuitive ethics: how innately prepared intuitions generate culturally variable virtues. *Daedalus* **133,** 55–66 (2004).
58. Pinker, S. *The Blank Slate: The Modern Denial of Human Nature* (Penguin, 2003).
59. Henrich, J. Cultural group selection, coevolutionary processes and large-scale cooperation. *J. Econ. Behav. Organ.* **53,** 3–35 (2004).
60. Gintis, H., Bowles, S., Boyd, R. & Fehr, E. Explaining altruistic behavior in humans. *Evol. Hum. Behav.* **24,** 153–172 (2003).
61. Nowak, M. A. Five rules for the evolution of cooperation. *Science* **314,** 1560–1563 (2006).
62. Pinker, S. The false allure of group selection. *Edge* http://go.nature.com/2nAwy3T (2012).

63. West, S. A., El Mouden, C., Gardner, A. Sixteen common misconceptions about the evolution of cooperation in humans. *Evol. Hum. Behav.* **32,** 231–262 (2011).

64. DeScioli, P. & Kurzban, R. A solution to the mysteries of morality. *Psychol. Bull.* **139,** 477–496 (2013).

65. DeScioli, P. The side-taking hypothesis for moral judgment. *Curr. Opin. Psychol.* **7,** 23–27 (2016).

66. Trivers, R. L. The evolution of reciprocal altruism. *Q. Rev. Biol.* **46,** 35–57 (1971).

67. Cosmides, L. The logic of social exchange: has natural selection shaped how humans reason? Studies with the Wason selection task. *Cognition* **31,** 187–276 (1989).

68. Hamlin, J. K. & Wynn, K. Young infants prefer prosocial to antisocial others. *Cogn. Dev.* **26,** 30–39 (2011).

69. Baumard, N., André, J. B. & Sperber, D. A mutualistic approach to morality: the evolution of fairness by partner choice. *Behav. Brain Sci.* **36,** 59–78 (2013).

70. Baumard, N. & Sheskin, M. in *The Moral Brain* (eds Decety, J. & Wheatley, T.) (MIT Press, 2015).

71. Debove, S., André, J. B. & Baumard, N. Partner choice creates fairness in humans. *Proc. R. Soc. B* https://doi.org/10.1098/rspb.2015.0392 (2015).

72. Debove, S. *The Evolutionary Origins of Human Fairness* PhD thesis, École Normale Supérieure (2015).

73. Tomasello, M. *A Natural History of Human Morality* (Harvard Univ. Press, 2016).

74. Frankfurt, H. G. *On Inequality* (Princeton Univ. Press, 2015).

75. Kagan, S. Unclear implications: commentary on Norton and Ariely (2011). *Perspect. Psychol. Sci.* **6,** 17–18 (2011).

76. Chambers, J. R., Swan, L. K. & Heesacker, M. Better off than we know: distorted perceptions of incomes and income inequality in America. *Psychol. Sci.* **25,** 613–618 (2013).

77. Davidai, S. & Gilovich, T. Building a more mobile America—one income quintile at a time. *Perspect. Psychol. Sci.* **10,** 60–71 (2015).

78. Dohmen, T., Falk, A., Fliessbach, K., Sunde, U. & Weber, B. Relative versus absolute income, joy of winning, and gender: brain imaging evidence. *J. Public Econ.* **95,** 279–285 (2011).

79. Cox, C. A. Inequity aversion and advantage seeking with asymmetric competition. *J. Econ. Behav. Organ.* **86,** 121–136 (2013).

80. Boyce, C. J., Brown, G. D. A. & Moore, S. C. Money and happiness: rank of income, not income, affects life satisfaction. *Psychol. Sci.* **21,** 471–475 (2010).

81. Easterlin, R. A. in *Nations and Households in Economic Growth: Essays in Honour of Moses Abramovitz* (eds David, P. A. & Reder, M. W.) (Academic Press, 1974).

82. Easterlin, R. A., Morgan, R. Switek, M. & Wang, F. China's life satisfaction, 1990–2010. *Proc. Natl Acad. Sci. USA* **109,** 9775–9780 (2012)

83. Sacks, D. W., Stevenson, B. & Wolfers, J. The new stylized facts about income and subjective well-being. *Emotion* **12,** 1181–1187 (2012).

84. Festinger, L. A theory of social comparison processes. *Hum. Relat.* **7,** 117–140 (1954).

85. Fiske, S. T. *Envy Up, Scorn Down: How Status Divides Us* (Russell Sage Foundation, 2011).

86. Zizzo, D. J. & Oswald A. J. Are people willing to pay to reduce others' incomes? *Ann. Econ. Statis.* **63/64,** 39–65 (2001).

87. Sheskin, M., Bloom, P. & Wynn, K. Anti-equality: social comparison in young children. *Cognition* **130,** 152–156 (2014).

88. Savani, K. & Rattan, A. A choice mind-set increases the acceptance and maintenance of wealth inequality. *Psychol. Sci.* **23,** 796–804 (2012).

89. Hilger, N. G. *The Great Escape: Intergenerational Mobility Since 1940* Working Paper No. 21217 (National Bureau of Economic Research, 2015).

90. Jantti, M. *American Exceptionalism in a New Light: A Comparison of Intergenerational Earnings Mobility in the Nordic Countries, the United Kingdom and the United States* (IZA, 2006).

91. Mitnik, P. A. & Grusky, D. B. *Economic Mobility in the United States* (The Pew Charitable Trusts, Russell Sage Foundation, 2015).

92. Corak, M. Income inequality, equality of opportunity, and intergenerational mobility. *J. Econ. Perspect.* **27,** 79–102 (2013).

93. Salam, R. Should we care about relative mobility? *National Review* http://go.nature.com/2mnQ02O (2011).

94. Chetty, R. *et al.* *The Fading American Dream: Trends in Absolute Income Mobility Since 1940* Working Paper No. 22910 (National Bureau of Economic Research, 2016)

95. Oishi, S., Kesebir, S. & Diener, E. Income inequality and happiness. *Psychol. Sci.* **22,** 1095–1100 (2011).

96. Boyce, C. J., Wood, A. M., Banks, J., Clark, A. E. & Brown, G. D. Money, well-being, and loss aversion: does an income loss have a greater effect on well-being than an equivalent income gain? *Psychol. Sci.* **24,** 2557–2562 (2013).

97. Card, D., Mas, A., Moretti, E. & Saez, E. Inequality at work: the effect of peer salaries on job satisfaction. *Am. Econ. Rev.* **102,** 2981–3003 (2012).

98. Cohn, A., Fehr, E. & Goette, L. Fair wages and effort provision: combining evidence from a choice experiment and a field experiment. *Manage. Sci.* **61,** 1777–1794 (2014).

99. Wilkinson, R. G. & Pickett, K. E. Income inequality and social dysfunction. *Ann. Rev. Soc.* **35,** 493–511 (2009).

100. Frank, R. H., Levine, A. S. & Dijk, O. Expenditure cascades. *Rev. Behav. Econ.* **1,** 55–73 (2014).

101. Daly, M., Wilson, M. & Vasdev, S. Income inequality and homicide rates in Canada and the United States. *Can. J. Criminol.* **43,** 219–236 (2001).

102. Nishi, A., Shirado, H., Rand, D. G. & Christakis, N. A. Inequality and visibility of wealth in experimental social networks. *Nature* **526,** 426–429 (2015).

Additional information

Competing interests

The authors declare no competing interests.