

# **Income Inequality Influences Perceptions of Legitimate Income Differences<sup>1</sup>**

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## **Abstract**

This paper argues that public opinion regarding the legitimacy of income differences is influenced by actual income inequality. When income differences are (perceived to be) high, the public thinks of larger income inequality as legitimate. The phenomenon is explained by the system justification motivation and other psychological processes that advantage and legitimate existing social arrangements. This is demonstrated in three experiments, which show that personal experiences of inequality as well as information regarding national-level income inequality can affect which income differences are thought of as legitimate. A fourth experiment shows that the system justification motivation is a cause of this effect. The results can help us explain the empirical puzzle of why higher income inequality across time and space does not systematically result in higher dissatisfaction with inequality.

This paper argues that income inequality influences perceptions of the legitimacy of income differences. The influence occurs in a counter-intuitive direction: individuals who perceive larger income differences in their society come to think of greater income differences as legitimate. The phenomenon occurs at least in part because perceptions of legitimacy are formed through a process of motivated social cognition: human beings are motivated to think of their social system as fundamentally fair and therefore tend to attribute legitimacy to inequality (where such an interpretation is available). This process, by which public opinion adjusts to increasing inequality, may help explain some of the outstanding puzzles in the literature on attitudes toward income differences.

Income inequality in advanced industrial countries has been growing since the 1970s (Atkinson 2003), and income inequality in the United States is now at a historic high (Saez 2014, Mishel and Finio 2013). Even though income inequality has increased, popular concern with inequality (for example, agreement with the statement that inequality is too high) has not grown (McCall 2013, Luttig 2013). In comparative perspective, public opinion in more unequal countries is not systematically more concerned about income differences and does not exhibit stronger demands for redistribution (Alesina and Glaeser 2004, Kenworthy and McCall 2008). This is despite the fact that recent increases in income inequality have been heavily top-skewed (Atkinson, Piketty and Saez 2011), making it in the economic self-interest of a majority of the population in these societies to oppose the increases.

This absence of popular opposition to increasing income inequality poses a theoretical puzzle, given that it violates the predictions made by models of public attitudes that rely on economic self-interest as the key determinant of public opinion (Meltzer and Richard 1981). Why does increasing income inequality not systematically result in increased concern with inequality and increased demands for redistribution? This paper provides evidence that this happens in part because public opinion adjusts to existing levels of income inequality. This ‘adjustment hypothesis’ suggests that when income inequality increases, perceptions of which income differences are legitimate also adjust upward, and public opinion can thus become aware of increased inequality without exhibiting increased opposition to it. This paper provides experimental tests of the adjustment hypothesis, concludes that adjustment to

inequality occurs, and suggests that this process provides a plausible explanation for the lack of systematic public objections to increasing income inequality.

Following a brief summary of the current state of knowledge on attitudes toward inequality, I present four experiments that explore the impact of income inequality on perceptions of legitimacy in income differences. A laboratory experiment shows that taking part in a competition with unequal prizes causes individuals to subsequently recommend more unequal prizes. A survey experiment with American subjects shows that receiving information regarding the high levels of income inequality in the United States causes individuals to upward revise their perceptions of how large income differences are legitimate (without changing their attitudes on whether inequality is too high). The survey experiment is replicated in Sweden, illustrating that the phenomenon is not confined to the American cultural and political environment. Finally, a further survey experiment with American subjects demonstrates that a psychological motivation to legitimate one's social system (the system justification motivation) is at least partly responsible for producing this phenomenon. Together, the experiments illustrate that increasing inequality can affect perceptions of legitimacy in income differences, even in situations where the participants are already concerned about the original levels of inequality.

### **Attitudes toward inequality**

Popular concern with inequality has not increased as inequality has increased (McCall 2013). On the contrary, in the United States, increasing inequality since the 1970's has occurred at the same time as a general conservative turn in public opinion (Kelly and Enns 2010, Luttig 2013). To the extent that concern about income inequality has fluctuated over this period of time, the fluctuations do not occur in sync with actual changes in inequality (McCall 2013). In a comparative perspective, more unequal countries tend to exhibit *lower* levels of demands for redistribution (Alesina and Glaeser 2004), and a cross-national study of 9 countries (Kenworthy and McCall 2008) has shown that changes in actual levels of inequality do not predict preferences for redistribution.

These trends suggest that, even if economic self-interest is an important determinant of attitudes to income inequality (Meltzer and Richard 1981), these attitudes are also determined by other, possibly non-economic, considerations. As per the literature, these other considerations can include racial or ethnic heterogeneity

(Gilens 1999, Alesina and Glaeser 2004, Roemer et al. 2007, Donnelly 2012), features of the electoral system (Iversen and Soskice 2006), or beliefs in upward mobility (Benabou and Tirole 2006). Each of these factors can in turn be affected by whether the population is aware of levels and/or changes in economic inequality (Cruces et al. 2013, Osberg and Smeeding 2006). In this paper, I test whether the legitimacy of income differences is affected by (perceptions of) existing income differences. In other words, I ask whether popular perceptions of what constitutes *legitimate* income differences are influenced by popular perceptions of *existing* income differences.<sup>3</sup>

The perceived legitimacy of income differences influences individual attitudes toward income inequality and the (re)distribution of income. The importance of legitimacy for evaluations of income distributions has been emphasized both in economic experiments and in studies of public attitudes toward income inequality and redistribution. In economic experiments, traditional dictator and ultimatum games can be modified to include an element of legitimacy by allowing the participants to ‘earn’ their starting share. The introduction of legitimate income differences in this way results in a significant change in the participants’ subsequent distributive preferences (in the direction of allowing players to keep their initial endowments) (Frohlich et al. 2004, Almås et al. 2010, Barber and English 2012). Similar findings can be obtained in the context of survey experiments regarding national-level income differences: if the perceived legitimacy of country-level income differences is manipulated (by manipulating perceptions of ‘desert’), preferences for taxation change (Durante and Putterman 2009). More broadly, when evaluating actual income differences, we typically take into account the origins of income, asking ourselves whether the differences we observe are justly deserved and thus legitimate. Hochschild (1981) points out that some inequalities are more readily perceived as legitimate than others: Americans tend to think of political inequality as unjustified and illegitimate, but economic inequality as justified and legitimate. Both Dahl (1971) and Lane (1959) point out that to the extent that economic inequality is perceived as legitimate, objections to it (in the form of demands for redistribution, for example) are unlikely to

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<sup>3</sup> In this paper, I use the expression “legitimate” interchangeably with “fair” when referring to income differences. In all studies, the respondents’ opinions on what constitutes “legitimate” income differences are elicited by asking them how large income differences “ought” to be. It is assumed that the income distributions that participants think “ought” to exist are deemed “legitimate” by these same participants.

occur. More recently, Alesina and Giuliano (2009) have suggested that differences between European and American attitudes toward economic inequality stem from different understandings of the role of luck, as opposed to hard work, in the determination of incomes (with the understanding that income accrued through luck is less legitimate than income accrued through hard work).

These traditional treatments of the relationship between legitimacy and attitudes toward economic inequality all involve looking at different *levels* of legitimacy, either across domains (Hochschild, 1981), across cultural contexts (Alesina and Giuliano 2009) or by experimentally manipulating the strength/presence of legitimacy (Frohlich et al. 2004). Here, I am interested in a related but distinct question. Rather than manipulating the legitimacy of the resource distribution, I am interested in manipulating the *distribution* itself. When we are exposed to a relatively unequal distribution of income, do we attribute income differences to ‘fair desert’ and accept the distribution as legitimate? Can inequality itself systematically change our perceptions of what constitutes legitimate income differences? I argue that the answer to these questions is yes.

### ***The legitimation of income differences***

What do we know about public opinion toward the legitimacy of income inequality? In particular, how large are the income differences that the public considers legitimate, and what appears to influence the level of legitimate inequality? Studies that directly focus on the legitimacy of income differences<sup>4</sup> consistently find that *perceptions of inequality* are the strongest predictor of legitimate income differences (Austen 2002, Gijsberts 2002, Kelley and Zagorski 2004, Castillo 2012, Trump 2013). Individuals who believe that income inequality in their society is high also tend to think that higher income inequality is legitimate. This pattern holds in developed and developing countries (Castillo 2012, Trump 2013), and in market economies and state socialist economies (Austen 2002, Gijsberts 2002, Kelley and Zagorski 2004). After the transition of Eastern European state socialist economies to market-based economies, the level of income inequality that was considered legitimate increased at the same time as actual income inequality increased; on the

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<sup>4</sup> Legitimate income differences are usually measured by asking survey respondents how much money a number of different occupations ‘ought’ to make; see Jasso (2000).

individual level, the best predictor of what income differences were considered legitimate was *perceptions* of income inequality (as opposed to demographic or social characteristics) (Austen 2002, Gijsberts 2002).

This strong correlation between perceived income inequality and legitimate income inequality has led several observers to suggest that perceptions of inequality may systematically affect perceptions of legitimacy (Gijsberts 2002, Listhaug and Aalberg 1999, Castillo 2012). Discussing the (non-)reaction of American public opinion against increased income inequality, Bartels (2008, Ch.5) also suggests that the population may be adjusting their fairness expectations to the fact of increased income inequality. While available survey data is consistent with this ‘adjustment hypothesis’, until now we have not had direct evidence that this causal relationship exists. The experiments presented in this paper seek to establish whether the adjustment hypothesis holds: whether *inequality itself* can influence perceptions of what fair income differences look like.

#### *The legitimation of income inequality as motivated social cognition*

Theoretically there are good reasons to suspect that an adjustment process occurs, and that it is caused by specific psychological phenomena, particularly the system justification motivation (Jost and Banaji 1994, Jost et al. 2004). System justification theory directly aims to explain when and how social outcomes are perceived as legitimate (see Costa-Lopes et al. 2013 for a review of approaches that treat the perception of legitimacy as the result of motivated social cognition). This theory proposes that human beings are inherently motivated to think of their social systems as fair and legitimate, and to maintain this belief even when faced with information that may indicate the opposite. This subconscious motivation is known as the system justification motivation. The belief that one’s social system is unfair or illegitimate causes psychological discomfort, and human beings are motivated to avoid this discomfort by interpreting information about their social system in a way that legitimizes and ‘makes sense of’ social outcomes (including unequal outcomes). The system justification motivation has broad applicability in social cognition and has, among other things, been shown to affect adherence to social stereotypes (Jost and Banaji 2004), perceptions of discrimination (Hafer and Choma 2009), perceptions of whether women belong in politics (Kay et al. 2009), and policy attitudes toward affirmative action (Phelan and Rudman 2011).

System justification theory also predicts that attitudes toward income inequality are affected by the system justification motivation (Jost and Hunyady 2003). When it comes to interpreting information about income inequality, we are biased in favor of interpretations that do not challenge our pre-existing beliefs regarding the fairness of our social system. With respect to income inequality in particular, such legitimacy-maintaining interpretations are readily available because the concept of ‘justly earned’ income differences is culturally accessible and judgments of fairness in income differences are inherently ambiguous. For example, let us say that an individual receives credible information that CEO salaries are higher than this individual previously thought. Two alternative interpretations of the information are immediately available to this individual: they can conclude that the salary is too high and therefore reflects an injustice, or they can conclude that the salary is probably an accurate reflection of the hard work of the CEO and therefore no injustice has occurred. The system justification motivation tilts the playing field in favor of the second conclusion: by adopting this interpretation, we avoid the psychological discomfort associated with concluding that our social system is more unjust than we previously thought. Note that the prediction is *not* that all individuals always accept all inequalities (which is patently not the case). Rather, the prediction is that when several alternative interpretations of facts are available to us, we are biased in favor of interpretations that do not cause us psychological distress (interpretations that do not point to unfairness or illegitimacy in our social system). Therefore, exposure to information about large income differences is likely to produce a re-evaluation of what fairness in income differences looks like (how much the CEO ought to earn), rather than to produce a re-evaluation of the fairness of the system that produced these income differences (whether income inequality is too high).

The system justification tendency thus predicts an adjustment process whereby income inequality itself affects perceptions of how much income inequality is legitimate.<sup>5</sup> This approach provides the main theoretical basis for the hypotheses in

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<sup>5</sup> The prediction that existing inequality influences perceptions of legitimate inequality can also be derived from the existence of status quo bias. Broadly defined, status quo bias is the tendency to prefer existing things, events and arrangements to hypothetical ones (see for example Kahneman and Tversky 1979, LeBoeuf and Shafir 2009, Zajonc 1968. Eidelman and Crandall 2009 provide a review). Because of status quo bias, information about the status quo may affect perceptions of what a desirable state of the world looks like. The main purpose of this paper is to evaluate the



this paper, and the role of system justification in the adjustment process will be tested directly in Experiment 4.

*Hypothesis: inequality affects perceptions of legitimacy*

The hypothesis tested in this paper is that income inequality affects perceptions of legitimacy in income differences. Empirically, the hypothesis is inspired by a) the lack of public opposition to growing income inequality and b) the strong correlation between perceptions of existing income inequality and perceptions of legitimacy in income inequality. Theoretically, the hypothesis relies on system justification theory. Relying on these empirical and theoretical antecedents, I hypothesize that income inequality systematically affects perceptions of legitimacy: individuals who are exposed to high income inequality come to think of *higher* income inequality as legitimate. This adjustment process reduces the probability of individuals reacting to information about inequality with the conclusion that the inequality is undesirable or unfair. Therefore, this phenomenon may help us explain the (non)reaction of public opinion to increased inequality.

**Laboratory experiment: manipulating experiences of inequality**

The first experiment acts as a test of principle, showing that experiences of different levels of inequality influence subsequent attitudes toward inequality. In this laboratory experiment, participants took part in a competition where the inequality of prizes was randomly assigned. Since the object of study is the impact of inequality under conditions of plausible legitimacy, the experiment is designed as a competition in which the rewards are “earned”. To look at the impact of inequality itself (and not the impact of economic self-interest) on distribution preferences, all participants are by design disadvantaged by inequality. I hypothesize that individuals who are

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proposition that a process *exists* whereby public opinion adapts to income differences. For this purpose, distinguishing between these two plausible mechanisms is not crucial. The main focus of the article is on system justification theory because this theory explicitly addresses the importance and motivated nature of the concept of legitimacy, and because it has implications for the political conditions under which the adjustment process may be particularly strong or weak. The first three experiments do not differentiate between status quo bias and system justification as potential explanatory variables for the experimental findings; the fourth experiment explicitly shows that the system justification motivation is a cause of the adjustment process.

randomly assigned to experience higher inequality will subsequently think of higher inequality as appropriate.

### *Method*

Participants were recruited for a study about experiences of competitive situations. The participants were told that they would take part in a competition against a second participant (who was in fact a confederate of the researcher). The participants first filled in a background survey that included only the Big Five personality measures, the Global Belief in a Just World scale (Lipkus 1991), the Social Dominance Orientation scale (Sidanius and Pratto 1999) and demographic variables including ideology and partisanship. The participants then ‘competed’ in a 4-minute anagram solving competition. The anagram competition included the randomly assigned treatment condition: a monetary prize. In the ‘more unequal’ condition, the winner was awarded \$9 and the loser was awarded \$1. In the ‘less unequal’ condition, the winner was awarded \$6 and the loser was awarded \$4. To reduce the role that economic self-interest could play in bolstering the participants’ support for inequality, the confederate always ‘won’ the competition, and the participant always ‘lost’. In other words, the participants never personally benefitted from the inequality of competition prizes. The researcher verbally pointed out the existence of a money prize in the competition; however, the exact dollar amount was only specified on the written instructions received by the participant prior to the anagram task. Both the researcher and the confederate were blind to the experimental condition until after the experiment was completed.

The words in the anagram task were neutral with respect to inequality (e.g. ‘rat’, ‘elbow’, ‘ocean’). The anagram task was designed to be challenging, and most participants reported that they experienced the task to be ‘somewhat’ to ‘very’ difficult. The participants scored between 0 and 32 points on the anagram task (roughly equivalent to solving 0 to 12 anagrams), and the confederate always ‘scored’ 2 points more than the participant.<sup>6</sup> When the scores were announced, the participants were reminded that they would get the second-place prize while the confederate would get the winner's prize. They then filled in the final questionnaire of the experiment, which was ostensibly about their experience of the competition. This

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<sup>6</sup> Except in the case of very low participant scores, 0-5 points, in which case the confederate ‘scored’ 1 point more than the participant.

final questionnaire included a question on the fairness of the payment that the participant had received, and a question on how the participant herself would distribute the \$10, were she to design the game. The participants were then asked whether they recalled what their monetary payment was going to be (manipulation check), asked for any suspicions regarding the purpose of the experiment, debriefed, and paid.

### *Participants*

65 participants were recruited using the Psychology Department Study Pool of a large university in northeastern United States in February - May 2012. They completed the study for a cash payment of \$5 (55 participants) or course credit (10 participants) plus the cash payment earned during the experiment. 12 participants were excluded from the analysis due to one or a combination of: guessing the purpose of the experiment, guessing that the confederate was not a true participant, and/or treatment failure (not remembering the payments of the winner and loser). Including these participants does not change the results of the experiment. The remaining 53 participants were a combination of college students and community members. Ages ranged from 15 to 56 (mean 30, median 24). 25 were female and 28 male. 55% of participants were White, 17% were African American, 11% were Hispanic, and 13% were Asian. 26 participants were in the 'more unequal' condition (\$1-\$9) and 28 in the 'less unequal' condition (\$4-\$6). A balance table is provided in Supplementary Information.

### *Results*

The main dependent variable was the amount of money the participant would award to the winner of the competition, were she to design the game. The amount of money awarded to the winner is used as a direct measure of how unequal the participant would make the payments, as the participants were constrained to divide exactly \$10 between the winner and loser. The results are shown in Figure 1: participants in the 'less unequal' condition would, on average, give the winner \$6.15, while participants in the 'more unequal' condition would, on average, give the winner \$7.77. The difference is significant at  $p < 0.001$ . Individuals in the 'more unequal' condition reported with a significantly ( $p=0.02$ ) higher probability that their payment was not fair, and the average dollar amount they allocate to the winner is below the \$9

they experienced. Despite this difference in perceived fairness, individuals in the ‘more unequal’ condition recommend a more unequal allocation of money than individuals in the ‘less unequal’ condition, indicating a partial adjustment to high inequality.

[Figure 1 about here.]

This experiment demonstrates that experiences of inequality can have an impact on preferences for inequality. Participants who experienced more inequality came to think of higher inequality as a legitimate way to divide a fixed resource. This experimental effect is present even though perceived fairness in the ‘more unequal’ condition is lower. In other words, even when people think of a given distribution as unfair, and even when they aim to reduce the unfairness of the initial distribution (in this case, by not offering the winner a full \$9), their attempt at equalizing the outcomes still ‘falls short’ of the answers they would have given had they been in a more equal environment to begin with. As such, *even* when people perceive a situation as unfair and attempt to correct for this, they do not endorse a distribution that is as equal as the one endorsed by people who start out in a more equal status quo.

### **Survey experiments: Attitudes toward income inequality**

The laboratory experiment showed that it is possible for experiences of inequality to affect how much inequality is perceived as legitimate. The two survey experiments below show that the adjustment phenomenon also occurs in the context of public opinion: participants in survey experiments are asked to think about real-life income inequality in the United States and Sweden, respectively. The hypothesis in both experiments is that individuals who are informed that their society is more unequal than they previously believed will come to think of higher income inequality as legitimate.

#### *Measuring attitudes toward legitimate income differences*

The outcome variable in the following survey experiments is attitudes toward income inequality, specifically the respondents’ opinion on how large the income differences between different occupations ‘ought’ to be. Inequality at the societal level is a relatively abstract concept, and it can be difficult to formulate questions on income inequality that are straightforward and easy to understand for all

respondents. With this in mind, I chose to use a set of questions on occupational earnings that has previously been used in the International Social Survey Project's (ISSP) Inequality Module and in the General Social Survey. The respondents are asked how much money they believe that a list of occupations earns in a year, after which they are asked how much they believe that these occupations *ought* to earn in a year. This provides estimates of the respondents' *perceived* level of income inequality and their *recommended* level of income inequality. The recommended level of income inequality is in this paper interpreted as a *legitimate* income difference in the eyes of the respondent.

The occupational groups used in this survey are: unskilled factory worker, skilled factory worker, owner of a small shop, a doctor in general practice, a member of the federal cabinet and a CEO of a large national corporation. To develop a uniform measure of perceived and recommended inequality, I use a justice index formalized by Jasso (1999, 2000), which has been previously used to analyze this question as asked in the ISSP (Austen 2002, Gijsberts 2002, Hadler 2005, Kelley and Evans 1993, Kelley and Zagorski 2004, Kenworthy and McCall 2008, Osberg and Smeeding 2006, Verwiebe and Wegener 2000). In this index, perceptions of and recommendations for inequality are captured as  $\log(\text{income of high prestige occupations} / \text{income of low prestige occupations})$ . Since I am focusing purely on perceptions of overall income inequality, without hypotheses regarding the relative prestige of occupations, I use the highest earning and lowest earning occupations, as defined by the respondent.<sup>7</sup> For each respondent, then, the index of perceived and recommended income differences becomes  $\log(\text{highest specified income} / \text{lowest specified income})$ . This yields two indices for each person: a *perceived* income gap index, and a *recommended* income gap index. This log index is used for computing the statistical significance of my findings in the tables below; for ease of interpretation, the non-logged ratio of high to low incomes is provided in all figures. The intuitive interpretation of this non-logged ratio is simply "how many times more than the poorest occupation should the richest occupation earn?"

In data from the ISSP almost all respondents underestimate the true extent of income inequality in the United States (Osberg and Smeeding 2006, see also

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<sup>7</sup> A small number of respondents recommend that some occupations (most commonly, a member of the federal cabinet) should earn nothing. In these cases, I use the next lowest estimate provided by the respondent.

Norton and Ariely 2010 for a similar observation with respect to wealth inequality). This finding is replicated in my survey sample: 93% of respondents guessed that income differences between occupational groups are smaller than they truly are. Because of this, no deception is required to create a treatment that tells individuals that income inequality is higher than they think it is. My treatment, thus, is simply a presentation of factually correct income data.

*Experiment 2: impact of information regarding inequality in the U.S.*

407 U.S. participants were recruited on Mechanical Turk in August 2012 to answer an “Opinion survey”.<sup>8</sup> The mean age of participants was 30, 36% were female, 55% had a college degree or higher, 77% were Caucasian, and 20% self-identified as Republican. A balance table is provided in Supplemental Information. One half of my sample (203 participants) was the control group: they answered some basic demographic questions, the scale on belief in a just world (Lipkus 1991), and an attention prompt (which was not used to exclude participants from analysis), followed by the questions on perceived and ideal income inequality. The remaining half of the sample (204 participants) additionally received information regarding current income inequalities in the U.S. (see Figure 2 for an image of the information treatment). This

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<sup>8</sup> For a discussion of Mechanical Turk as a subject pool, particularly its suitability as an alternative to other convenience samples, see Berinsky et al. (2012) and Buhrmeister et al. (2011). There have been recent concerns regarding non-naïveté (Chandler et al. 2013) and misrepresentation (Shapiro et al. 2013) on Mechanical Turk; these are concerns that are worth taking seriously. In the case of the experiments presented here, no common or recurring psychological aptitude tests were administered, and “repeat participation” by a MTurk worker ID in more than one of my experiments, even in the case of separate research questions, was not allowed. Misrepresentation or demand effects are a concern on MTurk; however, in this particular study, which is clearly about income inequality (and where the researcher’s account is visibly associated with a large institution that has a liberal reputation), the demand effect is likely to be in the direction of encouraging respondents to exhibit *more* opposition to inequality, rather than less (particularly in the information treatment condition). Insofar as there is a demand effect at work here, it is thus likely to be in the opposite direction to my hypotheses. Finally, MTurk respondents, while relatively more representative of the U.S. population than other available convenience samples, are relatively young, female, educated and liberal to name some relevant characteristics. There is no strong theoretical prior to expect the hypothesized effect to be confined to these subpopulations; I therefore expect that an effect found among this population ought to also be present among the general population.

information was inserted immediately after the participants gave their guesses for existing income inequality, and immediately before they gave their responses for how large income inequality *ought* to be. All respondents also indicated their occupation, their annual income, and answered six political attitude questions, including a question on whether income differences in America are too large.<sup>9</sup>

[Figure 2 about here.]

### *Results and discussion*

The results of the survey experiment are summarized in Figure 3 and Table 1. The outcome variable depicted in Figure 3 is a simple ratio measure of recommended income inequality (highest recommended income/lowest recommended income). After receiving the information treatment, the recommended level of income inequality rises from 9 to 14.3 - a 50% increase from control group preferences ( $p < 0.001$ ). The information that income inequality is higher than previously thought thus caused an *upward adjustment* in recommendations for how much income inequality there should be. In Model 2, Table 1, the experimental effect is compared to the relationship between relevant covariates and recommended levels of inequality. As can be seen in Model 2, Republican partisans recommend higher inequality than other participants, as do participants with higher levels of belief in a just world.<sup>10</sup> The effect of the information treatment is larger than the estimated relationship between Republican identification and recommended inequality.<sup>11</sup> Individuals who entered the

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<sup>9</sup> The six political attitude questions were: ‘How often do you trust the government in Washington to do what is right?’, ‘Differences in income in America are too large.’, ‘Large differences in income are necessary for America’s prosperity.’, ‘It is the responsibility of the government to reduce the differences in income between people with high incomes and people with low incomes.’, ‘The rich pay too much in taxes.’ and ‘The government has a responsibility to help the poor.’

<sup>10</sup> Belief in a Just World (Lipkus 1991) is a measure of the participants’ belief that people generally get what they deserve and that the world is fair. This belief is expected to make it easier to think that existing income differences are deserved and legitimate; the relationship to recommended inequality is thus in the expected direction.

<sup>11</sup> It is interesting to ask whether the main effect could be driven by a Republican subgroup of partisans who may be relatively more likely to accept income differences as justified because of an ideological belief (for example, the belief that income differences in general reflect hard work and are therefore legitimate). Further analysis shows, however, that the treatment effect is not limited to a partisan subgroup of participants: both Democrats and Republicans recommend higher income inequality after receiving the information treatment (see Supplemental Information for the statistical analysis).

experiment thinking that income inequality in the United States is relatively high also recommend higher inequality, thus exhibiting the same relationship that has been repeatedly found in ISSP data (Austen 2002, Gijssberts 2002, Kelley and Zagorski 2004). The fact that the information treatment, which increases perceptions of income inequality, causes an upward adjustment of recommended inequality shows that the previously established correlation between inequality perceptions and preferences has a causal element in the direction from perceptions to preferences.<sup>12</sup>

[Figure 3 about here.]

[Table 1 about here.]

Showing an upward adjustment in respondents' opinions regarding legitimate income inequality is not the same thing as showing that they have not become more concerned about inequality. Indeed, it is possible that the upward adjustment of inequality recommendations is accompanied by increased dissatisfaction with inequality. After all, a plausible hypothetical link between increasing income inequality and increasing demands for redistribution (frequently expected as a consequence) is that, as people are made aware of inequality, they are increasingly dissatisfied with it. In order to test for this impact of the information treatment, the respondents were asked a number of policy attitude questions at the end of the survey. The degree of agreement with the statement 'Differences of income in America are too large' is modeled as a dependent variable in Models 3 and 4 in Table 1. As the analysis shows, there are no significant differences by treatment condition. Essentially identical null results are found with the related propositions 'It is the responsibility of the government to reduce the differences in income between people with high incomes and people with low incomes.' and 'Large differences in income are necessary for America's prosperity'.

In conclusion, while the information treatment caused respondents to upward revise their recommended levels of income inequality, it did not have any discernible impact on their attitudes on whether differences of income in America are too large. This is the pattern of results we would expect if the adaptation hypothesis is due to a motivated mechanism (system justification motivation), and if the adjustment

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<sup>12</sup> This does not rule out the existence of reverse causality: for example, a motivated perception mechanism may result in a causal direction from preferences to perceptions. The experiments in this paper do not speak to the existence of this alternative causal direction.



in recommended inequality occurs in order to *avoid* the conclusion that differences in income in America are too large (or to avoid agreeing with this statement more strongly than before).

However, one alternative explanation of these findings may be that the adjustment phenomenon, rather than stemming from universal psychological mechanisms like the system justification motivation, is particular to the American ethos (broadly understood as a widespread belief in the American dream, i.e. that individuals who work hard can make it and by corollary, individuals who have made it deserve their fortune) (Kluegel and Smith 1986, Alesina and Glaeser 2004, Page and Jacobs 2009). The following two experiments put alternative explanations to the test: replicating the survey experiment in Sweden shows that the phenomenon is not uniquely American, and directly manipulating the system justification motivation illustrates its causal role in producing the mental adjustment to inequality.

### *Experiment 3: impact of information regarding inequality in Sweden*

Experiment 3 replicates Experiment 2 in Sweden. Beyond the usual value of a direct replication, the change of political environment to Sweden also serves as a mechanism check. If the results of Experiment 2 were due to a uniquely American ethos, we would not expect to find the same result in Sweden, a country with an extensive welfare state, higher taxation and lower income inequality than the United States (Esping-Andersen 1990, Osberg 2003). Swedish citizens are more in favor of government redistribution than are Americans (Svallfors 2004), and recommend lower income inequalities in the type of income questions that are used in this experiment (Svallfors 1997). Finally, Swedes are more likely than Americans to believe that luck determines a person's income (Alesina and Angeletos 2002), a belief that should dampen the impact of the information treatment (since it weakens the claim to legitimacy of income differences). In other words, if American exceptionalism in attitudes toward luck vs. desert in determining an individual's income is wholly responsible for the information effect found in Experiment 2, the results should not be replicable in Sweden. On the other hand, if the phenomenon that produced the effect is not limited to a specific cultural context (the system justification motivation is not expected to be culturally confined), then the different political environment may attenuate but will not entirely remove the impact of the information treatment on recommended levels of inequality.

### *Methods and participants*

The experimental set-up is a direct replication of Experiment 2, albeit with a modified information treatment that gave participants correct information on income inequalities in Sweden (see Supplemental Information for an image of the information treatment). Income inequality in Sweden is lower than in the United States, but just like in the American sample, a vast majority (244 out of 250) of the Swedes in this sample underestimated the extent of income inequality in their country. It follows that the information treatment in this experiment serves the same function as in Experiment 2: it informs participants that inequality is higher than they previously believed.

250 participants were recruited in Sweden in July-August 2013. The participants were recruited from a combination of a psychology study pool at a Swedish university (90 participants; the study pool does not include undergraduates majoring in psychology) and the online study pool “Studentkaninen” (160 participants).<sup>13</sup> All participants took the survey online and received a lottery ticket (approx. value \$5) for their participation. The participants ranged in age from 19 to 59 (mean age 26, median age 24), and 60% were female. 47% had a university education. 41% of the participants reported voting for a left-wing party in the last general elections; 27% reported voting for a right-wing party. The participants all lived in urban areas; the vast majority lived in the greater Stockholm area (including Uppsala). A balance table is provided in Supplemental Information. During the experiment, participants only answered demographic questions, filled in the Global Belief in Just World scale, and answered the questions on perceived and recommended income inequalities, followed by four political opinion questions.<sup>14</sup>

### *Results*

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<sup>13</sup> The online study pool at [www.studentkaninen.se](http://www.studentkaninen.se) is run by researchers affiliated with Karolinska University, and is primarily used to recruit participants for clinical and psychological studies. The site is open to the public and anyone can sign up as a participant.

<sup>14</sup> The political opinion questions were: ‘How often do you trust politicians?’, ‘Income differences in Sweden are too large’, ‘Large differences in income are necessary for America’s prosperity.’, and ‘It is the responsibility of the government to reduce the differences in income between people with high incomes and people with low incomes.’

The replication was successful, and the results of the experiment are presented in Figure 4 and Table 2. Receiving information regarding actual income inequality in Sweden moves the participants' mean recommended income ratio from 3.0 to 3.6 – a 20% increase that is statistically significant at the 95% confidence level. The effect size is comparable to the relationship between recommended inequality and having voted for a right-wing party in the last parliamentary elections (Model 2, Table 2). The increase in recommended inequality occurs even though the Swedish participants overall recommend much lower income inequality and are more concerned about the level of income inequality in their country than the American participants in Experiment 2. Further replicating the findings of Experiment 2, the information treatment has no impact on the Swedish participants' level of concern about income inequality, as shown in Models 3 and 4 in Table 2.

[Figure 4 about here.]

[Table 2 about here.]

### *Discussion*

The successful replication, first and foremost, increases confidence that the findings of Experiment 2 were not obtained by chance or were not in some other way a feature of the peculiarities of the sample obtained through Mechanical Turk. Further, this replication shows that the mechanism by which perceptions of the legitimacy of income inequality change is not solely the function of an American ethos. The point estimate of the treatment effect is substantially smaller in the Swedish sample; it is plausible that the smaller factual inequality to which participants were exposed may account for the smaller adjustment (the CEO's of the largest Swedish companies make 48 times the salary of an average unskilled factory worker; in the American experimental information treatment, this ratio was 480). However, it is also possible that a different political and ideological background reduces the impact of this information (Swedes may be less likely to attribute high incomes to individual merit). This interpretation is supported by the fact that Swedish participants scored lower on the Belief in Just World scale than American participants. On a scale from 1 to 6, where higher numbers indicate a stronger belief in a just world, the mean Swedish score was 2.82 while the mean American score was 3.24. In other words, there are several plausible reasons for the smaller information effect in the Swedish sample, and this experiment cannot distinguish between these

explanations. The experiment does show that the process by which individuals upward adjust their perceptions of legitimate inequality in response to information about inequality is present in each of two socio-political environments, even though the cultural emphases on individualism, equality and redistribution of incomes are markedly different in these two countries. The question of which mechanisms are at work is now further explored in Experiment 4.

#### **Experiment 4: The role of the system justification motivation**

The three experiments presented so far have demonstrated that when (perceptions of) inequality change, recommended levels of inequality also change in the same direction. The main mechanism proposed to drive this effect is the system justification motivation, which directly explains why and how we tend to imbue existing social arrangements with legitimacy, where such an interpretation is available. While a system justifying process is consistent with the findings presented above, the fourth experiment directly tests this causal mechanism. Showing that system justification is a cause of the adjustment process is relevant for future work on attitudes toward inequality, because system justification theory predicts that the political and social environment can increase or decrease the strength of the motivation to view the social system as legitimate.<sup>15</sup> Applied to the question of income inequality, this implies that the extent to which the public adjusts their perceptions of legitimacy in response to existing income inequalities may depend on the political environment. Experiment 4 therefore directly tests whether the system justification motivation influences adaptation to income inequality, by experimentally manipulating the strength of the system justification motivation. The hypothesis will be that, given exposure to the information treatment, experimentally increasing the system justification motivation will further increase recommended levels of inequality (beyond the already demonstrated information treatment effect).

#### *Manipulating the system justification manipulation*

The strength of the system justification motivation varies across individuals, and it also has situational determinants (Jost et al. 2004). Jost and Hunyady (2003,

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<sup>15</sup> The prediction that social and political environments influence the system justification motivation may also explain the different effect sizes observed in the United States (Experiment 2) and Sweden (Experiment 3).

p.111) argue that system justifying tendencies provide a “palliative function in that they reduce [...] discomfort and uncertainty”. The particular discomforts that are reduced by engaging in system justification include feelings that the world is unfair, or that social outcomes are illegitimate. The motivation is activated in conditions where the individual is particularly dependent on a social system for their own valued outcomes; this feeling of dependence can occur, for example, when the social system cannot be exited, or when the system is perceived to have particularly large control over the individual. Kay and Friesen (2011, p.360) summarize the conditions under which the system justification motivation is activated: “(a) system threat, (b) system dependence, (c) system inescapability, and (d) low personal control”.

These situational determinants of the system justification motivation can be experimentally manipulated (Kay et al. 2009, Laurin et al. 2010, van der Toorn et al, 2014). The experimental manipulations are designed to temporarily *increase* the system justification motivation and in this experiment I use an experimental treatment previously established in this literature. The treatment is a paragraph of text that manipulates perceptions of the inescapability of the social system (with a reverse-worded control paragraph); for previous uses of this experimental treatment see Kay et al. (2009) and Laurin et al. (2010). The full text of the treatment and control paragraphs is included in the Supplemental Information accompanying this article. This paragraph tells participants that in the future it will become harder to escape their social system (by emigrating from the United States). This information makes participants feel more dependent on their social system, and it is expected that the resulting psychological discomfort will increase their motivation to believe that the social system (in this case, the United States) is generally fair. Note that, importantly for this experiment, the paragraph does not mention economic inequality. Therefore, it should not impact preferences for income differences *other* than through the system justification motivation. I hypothesize that, in the presence of information on income inequality, participants with an experimentally increased system justification motivation will recommend higher income inequality than will participants who read the control paragraph.

### *Methods*

This experiment is a replication of Experiment 2, with the added condition of reading a system threat treatment or control paragraph, where the treatment

paragraph (described above) is designed to temporarily increase the participant's system justification motivation. In addition, the information treatment was updated to reflect the most up to date information on income inequality in the United States (see Supplemental Information). The experimental design thus has a 2 (inequality information) x 2 (system justification manipulation) set-up. Below, the terms "control" and "treatment" condition refer to the type of paragraph read by the participant (and not whether the participant saw the information treatment), unless otherwise specified.

### *Participants*

616 participants were recruited on Amazon's Mechanical Turk in July 2013.<sup>16</sup> The mean age of the respondents was 30 years, with a median of 27 and a range from 19 to 74. 37% were female, 54% had a college degree, and 61% identified as Democrats (including independents who lean Democrat) while 20% identified as Republicans (including independents who lean Republican). 71% self-identified as Caucasian, 13% as Asian and 7% as African American. A balance table is provided in Supplemental Information. On the Belief in a Just World Scale, which ranges from 1-6, the mean response was 3.36 and the median response was 3.38.

### *Results*

The results are presented in Table 3 and Figure 5. Across the whole sample, individuals who read the system justification-inducing paragraph endorsed higher income inequality; this is shown in Models 1 and 2 in Table 3. Adding an interaction effect reveals that the impact of the system justification treatment occurs entirely among people who were exposed to information regarding income inequality; this relationship is illustrated in Figure 4. Because the treatment paragraph makes no

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<sup>16</sup> Measures were taken to avoid repeat participation by unique MTurk worker ID's in more than one experiment in this paper. 15 of the recruited respondents were identified as repeat participants who had circumvented this restriction, and these individuals were not included in the analysis. In addition, 4 individuals completed the survey in less than 2 minutes while giving nonsensical answers to occupational earnings questions (e.g. entering only single digits such as "2", or digit sequences like "2323" for each occupation). These individuals were also excluded from analysis, leaving 597 participants used in the analysis. Since participants were allowed to skip questions they preferred not to answer, the final number of participants available for each specific analysis varies.

mention of income inequality, the only theoretical explanation for these results is the following sequence: a) the paragraph successfully increased participants' motivation to justify their social system, b) the presentation of income inequality data then presented a salient feature of the participants' society, and c) the participants proceeded to interpret this income inequality as more legitimate than they would have done in the control condition. Therefore, at least part of the phenomenon by which individuals adjust their expectations for legitimate income differences in the face of increasing inequality likely occurs because of the system justification motivation.

[Figure 5 about here.]

[Table 3 about here.]

In addition to providing evidence in favor of the system justification mechanism, the results of this experiment have potential implications for studying the relationship between national political events and the formation of public opinion. The topics that are discussed in typical system justification manipulations are not limited to possibilities for migration but also include the degree to which individual outcomes depend on the political system and the presence of outside threats to the polity. These topics are not directly about inequality, but they are profoundly political and may readily be discussed on the front pages of national newspapers – alongside reports about historically high levels of CEO pay. In light of these findings it is interesting to consider whether the presence or absence of outside threats to the nation can modify reactions to domestic developments such as increasing income inequality; this and other questions on the role of system justification in public opinion formation may provide interesting future research questions.

## **Conclusion**

Even though income inequality has been rising in the United States and other advanced industrialized nations, popular concern with income inequality has not increased in tandem with these economic changes. One of the potential explanations for the absence of (theoretically expected) stronger opposition to income inequality is an adaptation hypothesis. The adaptation hypothesis states that increasing inequality causes individuals to upward adapt their perceptions of what constitutes *legitimate* inequality. Given that the perceived legitimacy of inequality is a major explanation for acceptance of inequality (Hochschild 1981, Page and Jacobs 2009), shifting perceptions of how much inequality is legitimate could potentially explain the lack of

concern with inequality, and by extension, the lack of demands for redistribution or other government action to deal with such inequality.

This paper presented four experiments, the findings of which support the adaptation hypothesis. A laboratory experiment demonstrated that participants took their cues for appropriate levels of inequality from the experimental set-up: participants who took part in a game with unequal prizes subsequently suggested more unequal prizes for the same game. In two survey experiments, carried out in the United States and Sweden, the hypothesis was evaluated using real-life income inequality as a referent. When participants were given the information that income inequality in their country was higher than they believed it to be, they upward revised their recommended levels of income inequality. Despite the participants' changed appraisals regarding the income differences they recommended as legitimate, their opinion on whether income differences in their country were too large did not change in response to the information. I argue that these results are indicative of a motivated cognitive process whereby individuals ascribe large income differences to individual desert in a subconscious effort to maintain their pre-existing level of belief in the fairness and legitimacy of their social system. The fourth experiment directly tested this mechanism by experimentally manipulating the system justification motive and showed that when the motive is activated, people react to information about income inequality by adjusting their recommendations for legitimate inequality up further than when the motive has not been activated. Therefore, motivated social cognition in the form of system justification is a cause of the adaptation phenomenon.

It is important to note that while preferences regarding inequality move up in response to the information treatments, almost no respondents completely accept the actual level of income inequality as justified. Just as most respondents initially underestimate the true level of income inequality, most of them recommend a reduction in inequality, in both the control and treatment groups. This tendency is consistent with the observation that not all inequality is always thought of as legitimate, and that resistance to inequality exists in the political world. Rather than showing that *all* inequality is automatically accepted, my argument here is more modest: increased inequality increases, on average, our perception of how much inequality is acceptable.

Demonstrating that inequality influences perceptions of legitimacy gives direct empirical support to previously tentative interpretations of survey data. These



experiments demonstrate that it is reasonable to interpret the strong relationship between popular perceptions of inequality and popular recommendations for inequality as causal, with perceptions influencing recommendations. The results also shed light on the debate regarding between-country differences in popular support for (or objections to) inequality. Cross-nationally, it tends to be the case that more unequal countries exhibit more support for inequality - and if inequality generates its own support, this is not surprising.

These findings further serve as a qualifier to any assumption that a more informed public would be more likely to oppose increased income inequality. Osberg and Smeeding (2006) observe that Americans, when compared to other nationalities, were (at least in the early 2000's) *particularly* likely to underestimate the true extent of income inequality in their country. Given the results in this paper, fixing this knowledge gap would not necessarily raise Americans' concern with inequality; on the contrary, it may have the counter-intuitive effect of making Americans think of higher income differences as legitimate. At the same time, it is important to bear in mind that the data presented to participants in these experiments was neutral in terms of partisanship, and that more politically charged ways of presenting this data may well have a different impact on opinion – this potential variation is certainly important enough that it should be the topic of future research. If *all* information regarding the currently high levels of income inequality causes the public to support higher wage gaps as fair, the findings ought to give pause to any left-wing organizations that seek to change minds regarding the acceptability of inequality mainly by informing the public. If, on the other hand, there are important differences in how this information is received depending on source and presentation, then exploring the nature of such variation will be important for better understanding the over-time development of acceptance of as well as resistance to income inequality.

## References

- Alesina, Alberto F, and Paola Giuliano. 2009. "Preferences for Redistribution." *NBER Working Paper*. Available online at: <http://www.nber.org/papers/w14825>.
- Alesina, Alberto F, and Edward Glaeser. 2004. *Fighting Poverty in the U.S. and Europe: A World of Difference*. Oxford: Oxford University Press.
- Alesina, Alberto F., and George-Marios Angeletos. 2002. "Fairness and Redistribution: US versus Europe." *SSRN Electronic Journal*. Available online at: <http://www.ssrn.com/abstract=346545>.
- Almås, Ingvild, Alexander W Cappelen, Erik Ø Sørensen, and Bertil Tungodden. 2010. "Fairness and the Development of Inequality Acceptance." *Science (New York, N.Y.)* 328 (5982): 1176-8
- Atkinson, A.B. 2003. "Income Inequality in OECD Countries: Data and Explanations." *Economic Studies* 49 (4): 479–514.
- Atkinson, Anthony B, Thomas Piketty, and Emmanuel Saez. 2011. "Top Incomes in the Long Run of History." *Journal of Economic Literature* 49 (1): 3–71.
- Austen, Siobhan. 2002. "An International Comparison of Attitudes to Inequality." *International Journal of Social Economics* 29 (3): 218–237.
- Barber, Benjamin S. IV, and William English. 2012. "Divide Our Dollars, Not Divide The Dollar: Redistribution, Fairness, and the Ultimatum Game." *Working Paper: Cambridge, MA*.
- Bartels, Larry M. 2008. *Unequal Democracy: The Political Economy of the New Gilded Age*. Princeton: Princeton University Press.
- Benabou, Roland, and Jean Tirole. 2006. "Belief in a Just World and Redistributive Politics." *Quarterly Journal of Economics* 121 (2): 699–746.
- Berinsky, Adam J, Gregory A Huber, and Gabriel S Lenz. 2012. "Evaluating Online Labor Markets for Experimental Research: Amazon.com's Mechanical Turk." *Political Analysis* 20 (3): 351–368.
- Buhrmester, M., T. Kwang, and S. D. Gosling. 2011. "Amazon's Mechanical Turk: A New Source of Inexpensive, Yet High-Quality, Data?" *Perspectives on Psychological Science* 6 (1) (February 3): 3–5.
- Castillo, Juan Carlos. 2012. "Is Inequality Becoming Just? Changes in Public Opinion about Economic Distribution in Chile." *Bulletin of Latin American Research* 31 (1): 1–18.

- Costa-Lopes, R U I, John F Dovidio, Cícero Roberto Pereira, and John T Jost. 2013. "Social Psychological Perspectives on the Legitimation of Social Inequality: Past, Present and Future." *European Journal of Social Psychology* 237 (43): 229–237.
- Cruces, Guillermo, Ricardo Perez Truglia, and Martin Tetaz, 2013. "Biased Perceptions of Income Distribution and Preferences for Redistribution: Evidence from a Survey Experiment." *Journal of Public Economics* 98: 100-112
- Dahl, Robert A. 1971. *Polyarchy*. New Haven: Yale University Press.
- Donnelly, Michael. 2012. "Identity and Interests in the United Kingdom." Paper presented at the *Fifth Annual NYU-CESS Conference*. New York, NY, February 2012.
- Durante, Ruben, and Louis Putterman. 2009. "Preferences for Redistribution and Perception of Fairness: An Experimental Study." *Working Paper*. Available online at: <http://ssrn.com/abstract=1004573>.
- Eidelman, Scott, and Christian S. Crandall. 2009. "A Psychological Advantage for the Status Quo." In *Social and Psychological Bases of Ideology and System Justification*, edited by John T. Jost, Aaron C. Kay, and Hulda Thorisdottir, 85–106. Oxford: Oxford University Press.
- Esping-Andersen, Gösta. 1990. *The Three Worlds of Welfare Capitalism*. Princeton: Princeton University Press.
- Frohlich, Norman, J O E Oppenheimer, and Anja Kurki. 2004. "Modeling Other-Regarding Preferences and an Experimental Test." *Public Choice* 119 (June 2001): 91–117.
- Gijsberts, Mérove. 2002. "The Legitimation of Income Inequality in State-Socialist and Market Societies." *Acta Sociologica* 45 (4) (December 1): 269–285.
- Gilens, Martin. 1999. *Why Americans Hate Welfare: Race, Media, and the Politics of Antipoverty Policy*. Chicago: University of Chicago Press.
- Hadler, M. 2005. "Why Do People Accept Different Income Ratios? A Multi-Level Comparison of Thirty Countries." *Acta Sociologica* 48 (2) (June 1): 131–154.
- Hafer, Carolyn L., and Becky L. Choma. 2009. "Belief in a Just World, Perceived Fairness, and Justification of the Status Quo." In *Social and Psychological Bases of Ideology and System Justification*, edited by John T. Jost, Aaron C. Kay, and Hulda Thorisdottir. 107–125. Oxford: Oxford University Press.

- Hochschild, Jennifer. 1981. *What's Fair? American Beliefs about Distributive Justice*. Cambridge: Harvard University Press.
- Iversen, Torben, and David Soskice. 2006. "Electoral Institutions and the Politics of Coalitions: Why Some Democracies Redistribute More Than Others." *American Political Science Review* 100 (2): 165–181.
- Jasso, Guillermina. 1999. "How Much Injustice Is There in the World? Two New Justice Indexes." *American Sociological Review* 64 (1): 133–168.
- Jasso, Guillermina. 2000. "Trends in the Experience of Injustice: Justice Indexes About Earnings in Six Societies, 1991 – 1996." *Social Justice Research* 13 (2): 101–122.
- Jost, John, and Orsolya Hunyady. 2003. "The Psychology of System Justification and the Palliative Function of Ideology." *European Review of Social Psychology* 13 (1): 111–153.
- Jost, John T, and Mahzarin R Banaji. 1994. "The Role of Stereotyping in System-Justification and the Production of False Consciousness." *British Journal of Social Psychology* 33: 1–27.
- Jost, John T, Mahzarin R Banaji, and Brian A Nosek. 2004. "A Decade of System Justification Theory: Accumulated Evidence of Conscious and Unconscious Bolstering of the Status Quo." *Political Psychology* 25 (6): 881–919.
- Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica* 47 (2): 263–291.
- Kay, A. C., and J. Friesen. 2011. "On Social Stability and Social Change: Understanding When System Justification Does and Does Not Occur." *Current Directions in Psychological Science* 20 (6) (December 5): 360–364.
- Kay, A. C., M. C. Jimenez, and J. T. Jost. 2002. "Sour Grapes, Sweet Lemons, and the Anticipatory Rationalization of the Status Quo." *Personality and Social Psychology Bulletin* 28 (9) (September 1): 1300–1312.
- Kay, Aaron C, Danielle Gaucher, Jennifer M Peach, Kristin Laurin, Justin Friesen, Mark P Zanna, and Steven J Spencer. 2009. "Inequality, Discrimination, and the Power of the Status Quo: Direct Evidence for a Motivation to See the Way Things Are as the Way They Should Be." *Journal of Personality and Social Psychology* 97 (3) (September): 421–34.

- Kelley, J, and K Zagorski. 2004. "Economic Change and the Legitimation of Inequality: The Transition From Socialism To the Free Market in Central-East Europe." *Research in Social Stratification and Mobility* 22: 319–364.
- Kelley, Jonathan, and M. D. R. Evans. 1993. "The Legitimation of Inequality: Occupational Earnings in Nine Nations." *American Journal of Sociology* 99 (1) (July): 75-125.
- Kelly, Nathan J., and Peter K. Enns. 2010. "Inequality and the Dynamics of Public Opinion: The Self-Reinforcing Link Between Economic Inequality and Mass Preferences." *American Journal of Political Science* 54 (4) (July): 855–870.
- Kenworthy, L., and L. McCall. 2008. "Inequality, Public Opinion and Redistribution." *Socio-Economic Review* 6 (1) (December 4): 35–68.
- Kluegel, James R, and E. R. Smith. 1986. *Beliefs about Inequality: Americans' Views of What Is and What Ought to Be*. New York: Aldine De Gruyter.
- Lane, Robert E. 1959. "The Fear of Equality." *The American Political Science Review* 53 (1): 35–51.
- Laurin, Kristin, Steven Shepherd, and Aaron C Kay. 2010. "Restricted Emigration, System Inescapability, and Defense of the Status Quo: System-Justifying Consequences of Restricted Exit Opportunities." *Psychological Science* 21 (8) (August): 1075–82.
- LeBoeuf, Robyn A., and Eldar Shafir. 2009. "Anchoring on the 'Here' and 'Now' in Time and Distance Judgments." *Journal of Experimental Psychology. Learning, Memory, and Cognition* 35 (1) (January): 81–93.
- Lipkus, Isaac. 1991. "The Construction and Preliminary Validation of a Global Belief in a Just World Scale and the Exploratory Analysis of the Multidimensional Belief in a Just World Scale." *Journal of Personality* 12 (11): 1171–1178.
- Listhaug, Ola, and Toril Aalberg. 1999. "Comparative Public Opinion on Distributive Justice." *International Journal of Comparative Sociology* 40: 117–140.
- Luttig, M. 2013. "The Structure of Inequality and Americans' Attitudes Toward Redistribution." *Public Opinion Quarterly* (Gordon 2009) (September 12): 1–11.
- McCall, Leslie. 2013. *The Undeserving Rich: Beliefs about Inequality, Opportunity, and Redistribution in American Society*. Cambridge: Cambridge University Press.

- Meltzer, Allan H, and Scott F Richard. 1981. "A Rational Theory of the Size of Government." *Journal of Political Economy* 89 (5): 914–927.
- Mishel, Lawrence, and Nicholas Finio. 2013. "Earnings of the Top 1.0 Percent Rebound Strongly in the Recovery". 347. *Economic Policy Institute Issue Brief*. Washington, D.C.
- Norton, Michael I., and Dan Ariely. 2010. "Building a Better America - One Wealth Quintile at a Time." *Perspectives on Psychological Science* 6 (1): 9–12.
- Osberg, L., and T. Smeeding. 2006. "'Fair' Inequality? Attitudes toward Pay Differentials: The United States in Comparative Perspective." *American Sociological Review* 71 (3) (June 1): 450–473.
- Osberg, Lars. 2003. "Long Run Trends in Income Inequality in the United States, UK, Sweden, Germany and Canada: A Birth Cohort View." *Eastern Economic Journal* 29 (1): 121–142.
- Page, Benjamin I., and Lawrence R. Jacobs. 2009. *Class War: What Americans Really Think About Economic Inequality*. Chicago: University of Chicago Press.
- Phelan, Julie E, and Laurie A Rudman. 2011. "System Justification Beliefs, Affirmative Action, and Resistance to Equal Opportunity Organizations." *Social Cognition* 29 (3): 376–390.
- Roemer, John E., Woojin Lee, and Karine van der Straeten. 2007. *Racism, Xenophobia, and Distribution: Multi-Issue Politics in Advanced Democracies*. New York: Russell Sage Foundation.
- Saez, Emmanuel. 2014. "Striking It Richer: The Evolution of Top Incomes in the United States (Updated with 2012 Preliminary Estimates)." *Working Paper*. Stanford University.
- Shapiro, D. N., J. Chandler, and P. a. Mueller. 2013. "Using Mechanical Turk to Study Clinical Populations." *Clinical Psychological Science* 1 (2) (January 31): 213–220.
- Sidanius, Jim, and Felicia Pratto. 1999. *Social Dominance: An Intergroup Theory of Social Hierarchy and Oppression*. New York: Cambridge University Press.
- Svallfors, Stefan. 2004. "Class, Attitudes and the Welfare State: Sweden in Comparative Perspective." *Social Policy and Administration* 38 (2) (April): 119–138.

- Trump, Kris-Stella. 2013. "The Status Quo and Perceptions of Fairness: How Income Inequality Influences Public Opinion". (PhD Diss., Harvard University).
- Van der Toorn, Jojanneke, Matthew Feinberg, John T. Jost, Aaron C. Kay, Tom R. Tyler, Robb Willer, and Caroline Wilmuth. 2014. "A Sense of Powerlessness Fosters System Justification: Implications for the Legitimation of Authority, Hierarchy, and Government." *Forthcoming in Political Psychology*.
- Verwiebe, Roland, and Bernd Wegener. 2000. "Social Inequality and the Perceived Income Justice Gap." *Social Justice Research* 13 (2): 123–149.
- Wakslak, Cheryl J, and Patrick Bauer. 2011. "Spreading Rationalization: Increased Support for Large-Scale and Small-Scale Social Systems Following System Threat." *Social Cognition* 29 (2): 288–302.
- Wakslak, Cheryl J, John T Jost, Tom R Tyler, and Emmeline S Chen. 2007. "Moral Outrage Mediates the Dampening Effect of System Justification on Support for Redistributive Social Policies." *Psychological Science* 18 (3) (March): 267–74.
- Zajonc, R. B. 1968. "Attitudinal Effects of Mere Exposure." *Journal of Personality and Social Psychology Monograph* 9 (2 (Pt. 2)): 1–27.

## Supplemental Information

### *Supplemental Information I.*

The information treatments provided to participants in the survey experiments.

Experiment 2:

Occupation	Mean annual salary in 2010
<b>Chairman of a large national corporation</b>	\$11,400,000
<b>Member of the cabinet in the federal government</b>	\$199,700
<b>Doctor in general practice</b>	\$173,860
<b>Owner of small shop</b>	\$74,580
<b>Skilled factory worker</b>	\$33,770
<b>Unskilled factory worker</b>	\$24,240
Sources: Bureau of Labor Statistics, AFL-CIO, Payscale.com	

Experiment 3:

Yrke	Genomsnittlig månadslön (SEK)
<b>VD av ett stort nationellt företag</b>	1 100 000
<b>Riksdagsledamot</b>	58 300
<b>Läkare</b>	57 400
<b>Ägare av en liten butik</b>	31 300
<b>Yrkesutbildad fabriksarbetare</b>	26 300
<b>Ej yrkesutbildad fabriksarbetare</b>	22 900
<i>Uppgifterna gäller 2011 och kommer från Statistiska Centralbyrån samt LO.</i>	

Experiment 4:

Occupation	Average annual salary in 2012
<b>Chairman of a large national corporation</b>	\$15,100,000
<b>Member of the cabinet in the federal government</b>	\$199,700
<b>Doctor in general practice</b>	\$180,850
<b>Owner of small shop</b>	\$94,180
<b>Skilled factory worker</b>	\$34,500
<b>Unskilled factory worker</b>	\$24,620
Sources: Bureau of Labor Statistics, U.S. Executive Schedule, Equilar.Inc	



*Supplemental Information II.*

Additional analysis of Experiment 2: adding an interaction variable between the information treatment and partisan identity reveals that both Democrats and Republicans upward adjust their perceptions of fair income inequalities after receiving the information treatment. The point estimate of the interaction effect with Republican identity is positive and suggests that Republicans may react twice as strongly as Democrats to the information treatment; this is consistent with the fact that conservatives generally tend to score higher on the system justification motivation. However, the small number of Republicans (80/407) in this sample prevents any firm conclusions about this possible heterogeneity of the treatment effect between partisan subgroups.

Dependent variable:	Recommended inequality			
	Model 1		Model 2	
	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>
Information treatment	<b>0.43</b>	0.13	<b>0.44</b>	0.12
Partisan identity: Republican	0.39	0.20	0.23	0.19
Information*Republican	0.42	0.29	0.45	0.28
Belief in Just World scale			<b>0.18</b>	0.07
Perception of inequality (log)			<b>0.23</b>	0.03
Intercept	<b>2.11</b>	0.09	<b>0.73</b>	0.27
N	402		402	
Adjusted $R^2$	0.07		0.17	

**Table S1. Results of survey experiment with American sample: interaction with partisan identity.** The information treatment presents participants with information on actual income inequality in the United States, informing the participant that inequality is higher than they previously thought. Inequality preference is measured as  $\log(\text{highest suggested income}/\text{lowest suggested income})$ . Coefficients that are statistically significant at the 95% confidence level are shown in bold.

*Supplemental Information III.*

**Treatment [control] paragraph used in Experiment 4 to experimentally increase the motivation to believe the world is just. Source: Kay et al. (2009).**

“Since the 1950’s, a group at Harvard University, in Cambridge, has been using current political and international trends to predict patterns of population movements. Recent reports by this group of experts have indicated that people who wish to move out of the United States will find it increasingly difficult [easy] to do so, in the coming years. Thus, even if the number of Americans wishing to leave and settle elsewhere remains constant, we should expect a significant slow-down [increase] over the next few years in terms of those who actually are able to do so.”

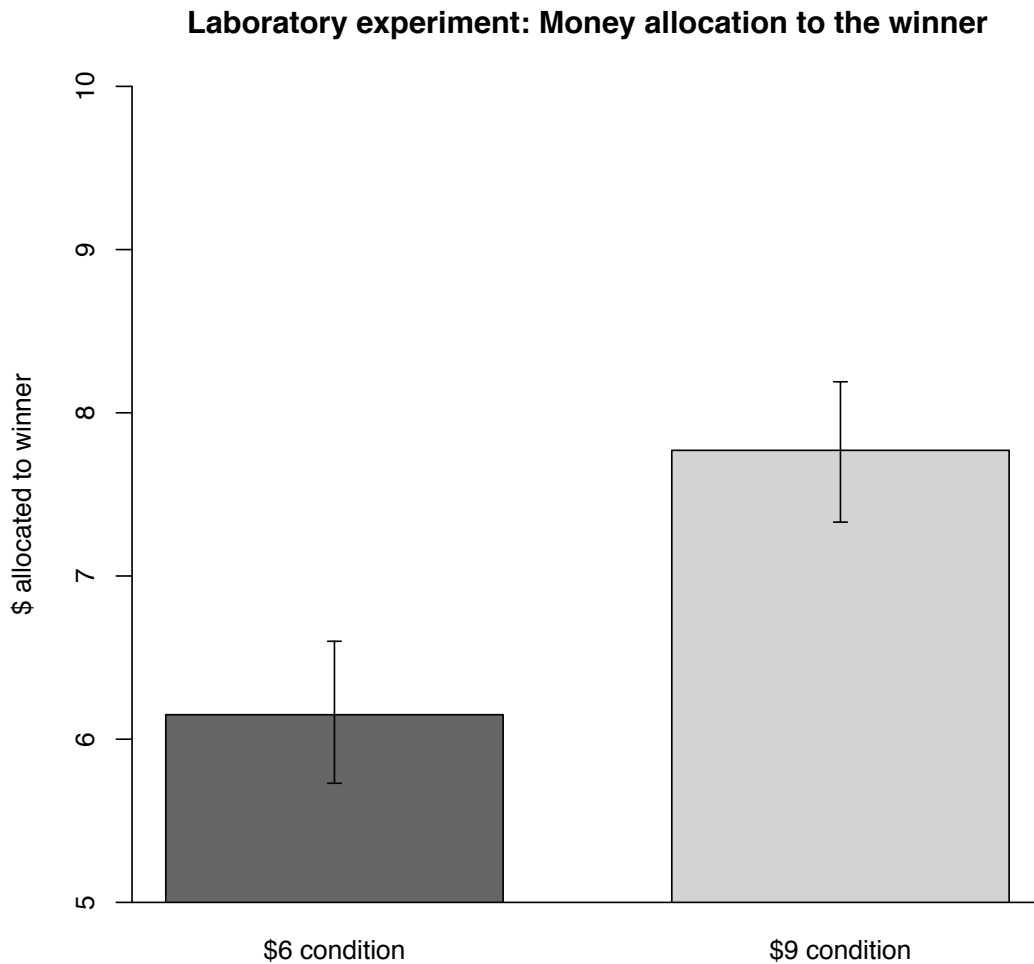
## Supplemental Information IV

### Balance tables

The descriptive statistics columns show unadjusted shares and means by treatment condition. The p-values are obtained through entering the demographic variables in a linear multivariate regression with treatment condition as outcome variable, performed separately for each experiment.

<b>Experiment 1</b>	<b>More unequal</b>	<b>Less unequal</b>	<b>p-value</b>
<i>Age (mean)</i>	28.8	31	0.82
<i>Gender (share female)</i>	0.54	0.41	0.33
<i>Race (share white)</i>	0.50	0.59	0.64
<i>Belief in just world (mean)</i>	3.34	3.10	0.35
<i>Partisanship (share Republican)</i>	0.31	0.11	0.09
<b>Experiment 2</b>	<b>Control</b>	<b>Information</b>	<b>p-value</b>
<i>Age (mean)</i>	30	30	0.57
<i>Gender (share female)</i>	0.38	0.35	0.55
<i>Race (share white)</i>	0.80	0.74	0.29
<i>Belief in just world (mean)</i>	3.30	3.19	0.26
<i>Partisanship (share Republican)</i>	0.22	0.17	0.50
<i>Education (share w/ college degree)</i>	0.54	0.55	0.69
<i>Perceived inequality (log of the ratio of highest to lowest perceived income)</i>	3.56	3.53	0.85
<b>Experiment 3</b>	<b>Control</b>	<b>Information</b>	<b>p-value</b>
<i>Age (mean)</i>	26	27	0.87
<i>Gender (share female)</i>	0.60	0.60	0.29
<i>Belief in just world (mean)</i>	2.88	2.76	0.06
<i>Partisanship (voted right-wing last election)</i>	0.24	0.29	0.33
<i>Education (share w/ college degree)</i>	0.43	0.51	0.20
<i>Perceived inequality (log of the ratio of highest to lowest perceived income)</i>	1.80	1.65	0.21
<b>Experiment 4</b>	<b>Control</b>	<b>Threat condition</b>	<b>p-value</b>
<i>Age (mean)</i>	31	30	0.27
<i>Gender (share female)</i>	0.38	0.36	0.57
<i>Race (share white)</i>	0.70	0.71	0.57
<i>Belief in just world (mean)</i>	3.36	3.35	0.86
<i>Partisanship (share Republican)</i>	0.22	0.18	0.25
<i>Education (share w/ college degree)</i>	0.51	0.56	0.09
<i>Perceived inequality (log of the ratio of highest to lowest perceived income)</i>	3.66	3.55	0.30

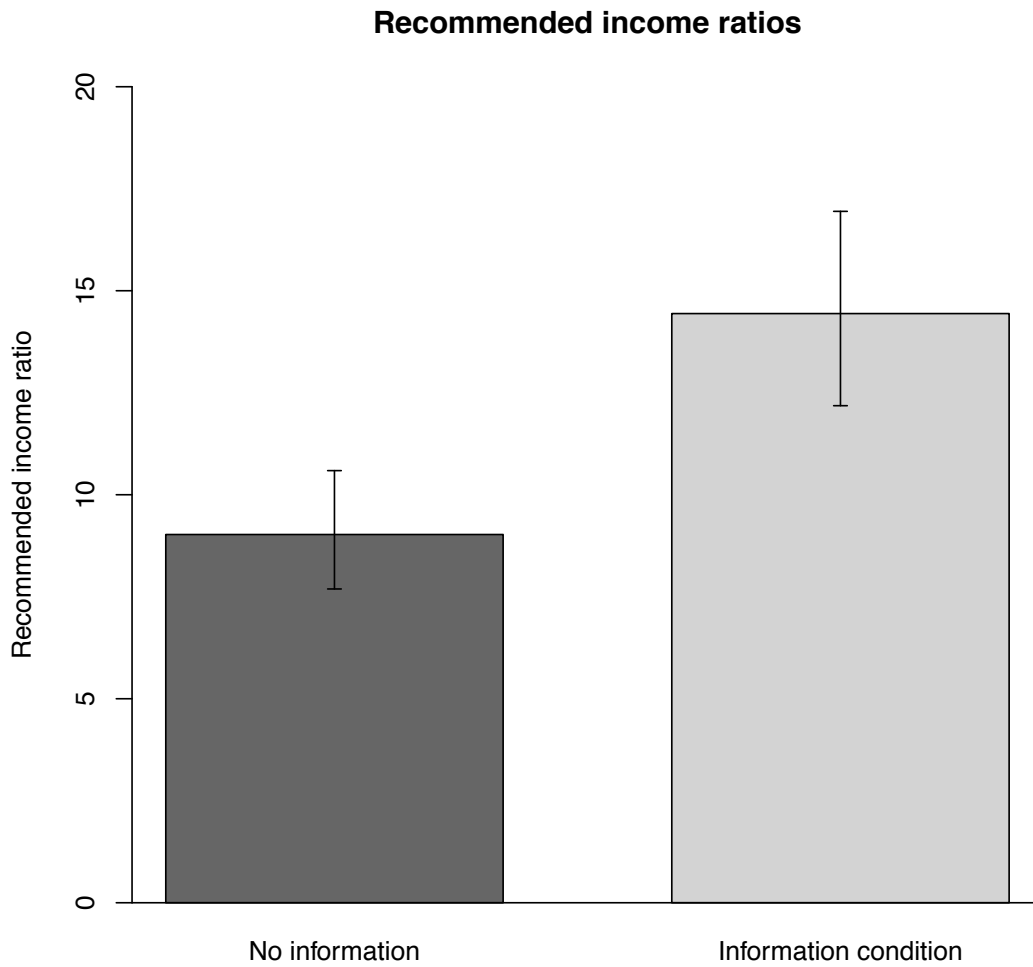
## Tables and Figures



**Figure 1: Laboratory experiment results.** The bars represent the amount of money (out of \$10) that the participants recommended as a fair allocation to the winner of an anagram competition. Showing mean allocations with 95% confidence intervals. The 53 participants were randomly assigned to competitions where the winner got \$9 or \$6 (out of \$10) respectively; the difference in subsequent recommendations is statistically significant at  $p < 0.001$ .

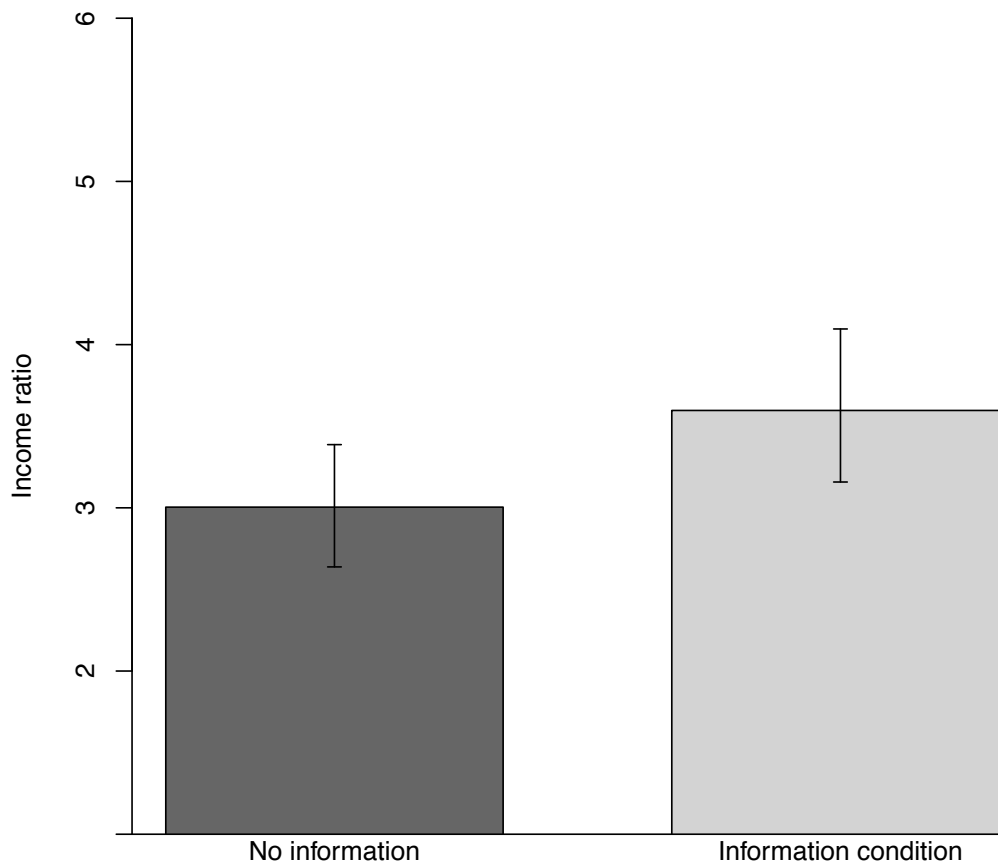
Occupation	Mean annual salary in 2010
Chairman of a large national corporation	\$11,400,000
Member of the cabinet in the federal government	\$199,700
Doctor in general practice	\$173,860
Owner of small shop	\$74,580
Skilled factory worker	\$33,770
Unskilled factory worker	\$24,240
Sources: Bureau of Labor Statistics, AFL-CIO, Payscale.com	

**Figure 2: Information treatment from Experiment 2.** The participants were first asked to give their estimates of how much a member of each of the shown occupations earns in a year. After they had given their answers, the treatment group was shown this table with the prompt: “Thank you for your guesses. For your information, here are the actual amounts that the average people in these occupations made in 2010. Please have a look at this information. When you are done reading, please press the continue button below.”

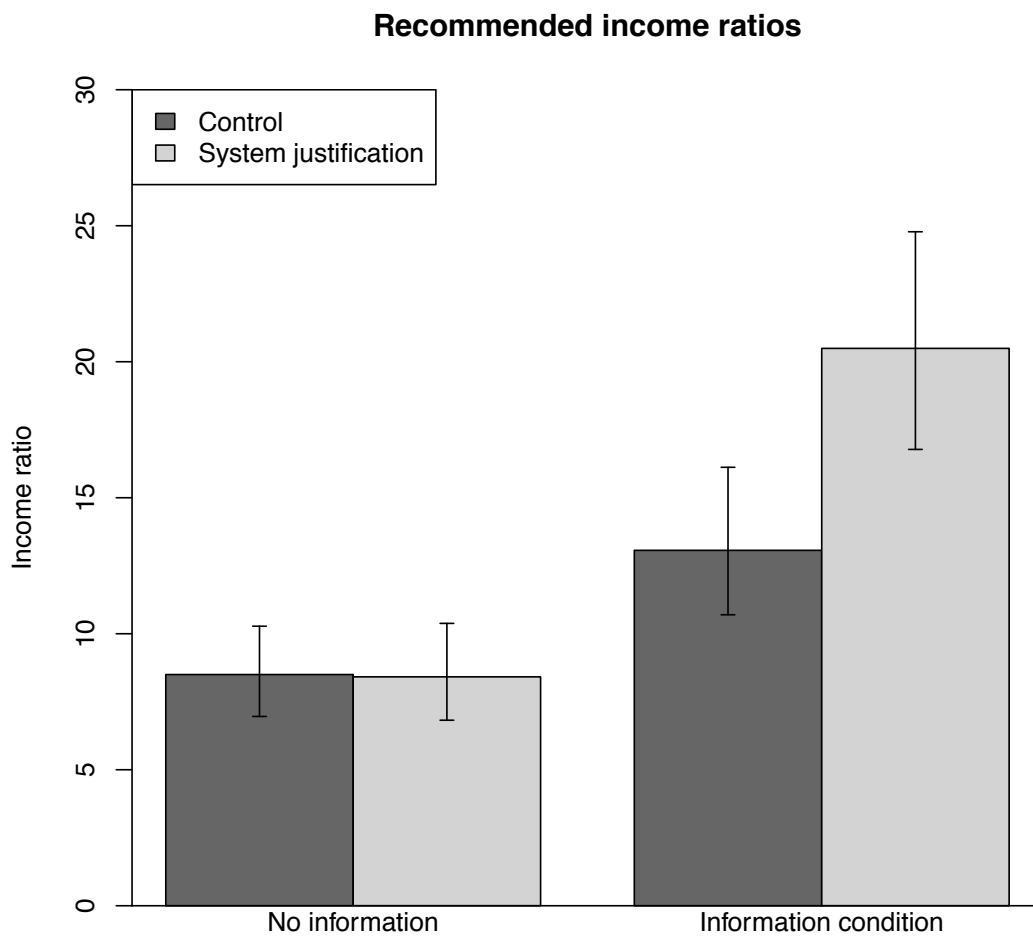


**Figure 3. Results of survey experiment with American sample.** The figure shows recommended ratios of income inequality between the highest and lowest paid occupations (see Figure 2 for list of occupations), by information treatment condition. The values are predicted values with 95% confidence intervals, based on Model 1 in Table 1, and are presented as non-logged for ease of interpretation.

### Recommended income ratios



**Figure 4. Results of survey experiment with Swedish sample.** The figure shows recommended ratios of income inequality between the highest and lowest paid occupations (see Figure 2 for list of occupations) by information treatment condition. The values are predicted values based on Model 1 in Table 2, with 95% confidence intervals, and are presented as non-logged for ease of interpretation. The effect of the information treatment is statistically significant at  $p < 0.05$ .



**Figure 5. Results of survey experiment with an experimental manipulation of the system justification motive.** The figure shows recommended ratios of income inequality between the highest and lowest paid occupations (see Figure 2 for list of occupations) by information and system justification treatments. Showing predicted values based on Model 3 in Table 3, with 95% confidence intervals.



Dependent variable:	Recommended inequality				Income diff's too large			
	Model 1		Model 2		Model 3		Model 4	
	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>
Information treatment	<b>0.47</b>	0.12	<b>0.52</b>	0.11	0.16	0.11	0.09	0.09
Belief in Just World scale			<b>0.18</b>	0.07			<b>-0.32</b>	0.06
Partisan identity: Republican			<b>0.44</b>	0.15			<b>-1.07</b>	0.12
Perception of inequality (log)			<b>0.23</b>	0.03			-0.03	0.03
Intercept	<b>2.20</b>	0.08	<b>0.70</b>	0.27	<b>3.93</b>	0.08	<b>5.01</b>	0.23
N	407		403		406		402	
Adjusted $R^2$	0.03		0.17		0.003		0.28	

**Table 1. Results of survey experiment with American sample.** The information treatment presents participants with information on actual income inequality in the U.S., informing the participant that inequality is higher than they previously thought (see Figure 2). Recommended inequality is measured as  $\log(\text{highest suggested income}/\text{lowest suggested income})$ . Agreement with the statement “Income differences in America are too high” is measured on a 1-5 scale where 5 indicates stronger agreement. Coefficients that are statistically significant at the 95% confidence level are shown in bold.

Dependent variable:	Recommended inequality				Income diff's too large			
	Model 1		Model 2		Model 3		Model 4	
	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>
Information treatment	<b>0.19</b>	0.09	<b>0.24</b>	0.08	0.21	0.16	0.18	0.13
Belief in Just World scale			<b>0.19</b>	0.06			<b>-0.61</b>	0.09
Last vote: right-wing party			<b>0.26</b>	0.10			<b>-0.98</b>	0.15
Perception of inequality (log)			<b>0.38</b>	0.05			<b>-0.19</b>	0.08
Intercept	<b>1.09</b>	0.07	-0.15	0.19	<b>3.44</b>	0.11	5.76	0.31
N	249		240		249		240	
Adjusted $R^2$	0.01		0.26		0.003		0.35	

**Table 2: Results of survey experiment with Swedish sample.** The information treatment presents participants with information on actual income inequality in Sweden, informing the participant that inequality is higher than they previously thought (see Supplemental Information for visual image of the treatment). Recommended inequality is measured as  $\log(\text{highest suggested income}/\text{lowest suggested income})$ . Agreement with the statement “Income differences in Sweden are too high” is measured on a 1-5 scale where 5 indicates stronger agreement. Coefficients that are statistically significant at the 95% confidence level are shown in bold.

Dependent variable:	Recommended inequality							
	Model 1		Model 2		Model 3		Model 4	
	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>	<i>Coef</i>	<i>S.E.</i>
Information treatment	<b>0.66</b>	0.10	<b>0.71</b>	0.10	<b>0.44</b>	0.15	<b>0.52</b>	0.14
System justification treatment	<b>0.22</b>	0.10	<b>0.24</b>	0.10	-0.01	0.15	0.04	0.14
Info*Justification					<b>0.45</b>	0.21	<b>0.39</b>	0.19
Belief in Just World scale			<b>0.24</b>	0.06			<b>0.24</b>	0.06
Partisan identity: Republican			<b>0.29</b>	0.12			<b>0.29</b>	0.12
Perception of inequality (log)			<b>0.24</b>	0.03			<b>0.24</b>	0.03
Intercept	<b>2.03</b>	0.09	0.24	0.25	<b>2.14</b>	0.10	0.35	0.25
N	589		582		589		582	
Adjusted $R^2$	0.07		0.19		0.08		0.19	

**Table 3: Results of survey experiment with system justification manipulation.**

The information treatment presents participants with information on actual income inequality in the United States (see Supplemental Information for a visual image of the treatment). The system justification treatment increases the system justification motivation. Recommended inequality is measured as  $\log(\text{highest suggested income}/\text{lowest suggested income})$ . Coefficients that are statistically significant at the 95% confidence level are shown in bold.