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Socioeconomic Background and Judgments of Economic Inequality

By

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in

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Committee in charge:

Professor Dacher Keltner, Chair

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Abstract

Socioeconomic Background and Judgments of Economic Inequality

by

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Doctor of Philosophy in Psychology

University of California, Berkeley

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The current investigation documented how individuals of different socioeconomic backgrounds differ in their judgments of the severity of economic inequality. Seven empirical studies provide robust support for the central hypothesis that those of higher (vs. lower) socioeconomic backgrounds will judge wealth distributions as less severely unequal. Further analyses suggested that these differences (in economic inequality judgments) can, in part, be explained by differences in economic system justification (i.e., stronger among those of higher socioeconomic backgrounds). Toward the end, I demonstrated how such differences can lead to, and explain, diverging reactions (in emotions and attributions) toward other societal issues – in current data, the unhousedness problem.

Dedicated to Dacher Keltner and Serena Chen, my family, all my coauthors and research assistants and committee members and travel/drinking partners, and the very missed and “precious” Hyun Jung Kang

Socioeconomic Background and Judgments of Economic Inequality

Money divided the world into winners and losers, haves and have-nots. That was an excellent arrangement for the winners, but what about the people who lost? (Auster, *Hand to Mouth*)

This species of inequality consists in the different privileges, which some men enjoy, to the prejudice of others, such as that of being richer, more honoured, more powerful, and even that of exacting obedience from them. (Rousseau, *Discourse on Inequality*)

Structural economic inequality has spread dramatically across the globe over the past 40 years (Bauman, 2013; Davies, Sandstrom, Shorrocks, & Wolff, 2008; Fisher & Bubola, 2020; Firebaugh, 2003; OECD, 2020). This deeply entrenched, skewed distribution of resources has many origins: the capitalistic structures of domestic and international markets, governmental tax policies, compensation for executives, and the emergence of certain commodities on Wall Street (Frank & Cook, 2010; Hacker & Pierson, 2010; Mankiw & Taylor, 2017). As a result, in the U.S., while the wealth of the bottom 95% has remained mostly stagnant over this time span, the wealth of the top 5% continues to rise (Lansley, 2012).

These external circumstances have drawn interdisciplinary interest in addressing the societal and psychological origins and effects of structural economic inequality. Researchers have found that income inequality, as most typically assessed with the Gini index of income inequality at the regional or national level, predicts undermined health, both physical and psychological (for reviews, see Buttrick, Heintzelman, & Oishi, 2017; Oishi, Kushlev, & Schimmack, 2018; Wilkinson & Pickett, 2009, 2020). The Gini index (of income inequality) is one of the most widely used (objective) indicators of structural economic inequality, wherein 0 represents perfect equality (everyone has the same income) and 1 represents perfect inequality (one person has all the income and all others have no income). Thus, within this way of assessing structural economic inequality, higher numbers reflect greater income inequality in the respective region or nation.

And therefore, the aforementioned studies reveal that, more specifically, simply residing in a more unequal place (in terms of the income distribution) predicts (or is associated with) reduced happiness, increased prejudice and aggression, prevalent symptoms of anxiety and depression, mistrust and dissatisfaction in relationships, and a wide range of other healthy issues such as poor bone growth in children (Buttrick & Oishi, 2017; Cho, Chen, & Keltner, 2021; Connor, Sarafidis, Zypur, Keltner, & Chen, 2019; Delhey & Dragolov, 2014; Kawachi & Kennedy, 2006; Oishi & Kesebir, 2015; Oishi, Kesebir, & Diener, 2011; Wilkinson & Pickett, 2009). These findings, together, point to how the growing economic inequality is becoming a central threat to the well-being and sustainability of our current societies (Payne, 2017).

In the current investigation, the central question that I raise is whether a person's socioeconomic background might profoundly shape judgments of the severity of economic inequality. I propose and (systematically) test the main hypothesis that individuals of higher (vs. lower) socioeconomic backgrounds will judge wealth distributions (of various sorts) as less severely unequal. I expect these differences to be evident even when people are exposed to the identical, objective information (about the distribution of wealth), and to persist over and beyond the influence of individual differences in political ideology (conservatism vs. liberalism).

After providing robust empirical evidence for these predicted differences (in economic inequality judgments), in the latter studies I test a second hypothesis: that economic system justification (ESJ) will statistically mediate the link between socioeconomic background and economic inequality judgments (Bauman, 2013; Dorling, 2015; Jost & Thompson, 2000; Piff, Kraus, & Keltner, 2018; Stiglitz, 2012). Next, I examine how these hypothesized differences might lead to, and explain, the diverging reactions (in emotions and attributions), of those of higher vs. lower socioeconomic backgrounds, toward social-political issues of the day: for example, in the current data, the unhousedness problem. In these examinations I test the third and final hypothesis: that judgments of wealth inequality (in the U.S.) will statistically mediate the link between socioeconomic background and both the emotional and attributional reactions toward the unhousedness problem (see Supplemental Materials, Figure 1, for the full theoretical model depicting these hypotheses).

Socioeconomic Background and Judgments of Economic Inequality

As wealth disparities continue to deepen, the rich and poor face lives of different resources, opportunities, and outcomes – ranging from education to health care to happiness and life expectancy (Adler & Ostrove, 1999; Killingsworth, 2021). Important to the current work, recent studies have revealed that people’s judgments of this growing, structural economic inequality strongly predict various social-political attitudes (more so than do objective, economic indicators), such as those toward redistributive governmental policies (Arsenio, 2018; García-Castro, Rodríguez-Bailón, & Willis, 2020; Niehues, 2014; Willis, García-Sánchez, Sánchez-Rodríguez, García-Castro, & Rodríguez-Bailón, 2022).

In prior, related studies, the extent to which people are accurate judges of wealth inequality has been a focus of considerable academic debate (Chambers, Swan, & Heesacker, 2014; Eriksson & Simpson, 2012; Hauser & Norton, 2017; Norton & Ariely, 2011). However, how people vary in these judgments is a relatively novel area of empirical inquiry. In relevant work, which has been mostly focused on the role of ideological factors, researchers have found that political liberals (vs. conservatives) are more likely to overestimate the rise of economic inequality over time (Chambers et al., 2014). Also in a related vein, Kteily and colleagues have found that social dominance orientation (which reflects individual differences in the preference for social hierarchy) is associated with the reduced likelihood to acknowledge the hierarchy (or inequality) between various high- and low-power groups of society (Kteily, Sheehy-Skeffington, & Ho, 2017).

The current investigation focuses on socioeconomic background – questioning, and testing, how an individual’s own, relative position in the socioeconomic hierarchy (i.e., socioeconomic background) might shape judgments of (the severity of) economic inequality. The top 5%, through their influential roles as policy makers, board members, and executives, wield a disproportionate impact on factors (such as policies on taxation rates or compensations) that contribute to the degree of structural economic inequality within a given society (Bauman, 2013; Kraus & Keltner, 2013; Kraus & Callaghan, 2014). However, on many metrics, those of lower socioeconomic backgrounds mostly bear the brunt of economic inequality (Cheung & Lucas, 2016; Oishi et al., 2011; Wilkinson & Pickett, 2007, 2020). Throughout the current research, I test the central hypothesis that elevated socioeconomic background will be associated with the reduced likelihood to judge wealth distributions as severely unequal.

The basis of this central prediction primarily derives from studies of socioeconomic background (and social class). A person’s socioeconomic background is, in general, determined by material wealth, educational attainment, and occupational prestige (Adler, Epel, Castellazzo,

& Ickovics, 2000; Fiske & Markus, 2012; Kraus, Piff, & Keltner, 2011). Individuals of higher socioeconomic backgrounds have greater access to abundant resources (material, social, and cultural), higher-quality education, stronger health care, and, by implication, the freedom of choice and agency (Côté, Piff, & Willer, 2013; Dorling, 2015; Fiske & Markus, 2012; Kraus, Piff, Mendoza-Denton, & Rheinschmidt, 2012; Snibbe & Markus, 2005; Stephens, Markus, & Fryberg, 2012; Stiglitz, 2012). In contrast, individuals of lower socioeconomic backgrounds, relatively lacking such resources or freedom, are instead more vigilant to the threats in their external environments, experience a diminished sense of control, and are more attuned to the needs and intentions of other individuals (Côté, 2011; Destin, Rheinschmidt-Same, & Richeson, 2017; Johnson, Richeson, & Finkel, 2011; Kraus, Horberg, Goetz, & Keltner, 2011; Kraus et al., 2012; Piff, Kraus, Côté, Cheng, & Keltner, 2010; Piff, Stancato, Martinez, Kraus, & Keltner, 2012; Stellar, Manzo, Kraus, & Keltner, 2012; Stephens, Mahedani, & Destin, 2014; Stephens, Markus, & Phillips, 2014).

Most pertinent to the current work, researchers have found that those of higher socioeconomic backgrounds are more optimistic in their judgments of the economy – in judging the upward social class mobility or the societal progress toward Black-White racial economic equality in the U.S. (Kraus & Tan, 2015; Kraus, Richeson, & Richeson, 2017; Piff et al., 2018). Building on, and extending, these recent findings, the current research tests if elevated socioeconomic background is associated with the reduced tendency to judge wealth distributions as less severely unequal, and does so by testing this central hypothesis across different measures of inequality (for example, judging regional, national, and global wealth inequality, or estimating the incomes of different populations in the U.S.), and across 22 different societies.

Socioeconomic Background and Economic System Justification

Then, how might one explain the proposed link between socioeconomic background and economic inequality judgments? The processes underlying this predicted phenomenon are likely to be many – such as the greater optimism observed among those of higher socioeconomic backgrounds, noted above. In the current work, to answer this question, I focus on differences in the tendency to view the economic system as just (economic system justification) – a tendency that has been found to be heightened among those who occupy higher rank positions in various hierarchies (Jost & Banaji, 1994; Jost & Kay, 2010; Keltner & Robinson, 1997; Piff et al., 2018). Elevated rank, or status, gives an individual more incentive to see the current system, as is, as just, for the obvious reason that the status quo tends to favor them, their families, and the groups/organizations they belong to (Brown-Iannuzzi, Lundberg, Kay, & Payne, 2015; Kay, Banfield, & Laurin, 2010; Pratto, Sidanius, & Levin, 2006).

Indeed, researchers have found that those of higher socioeconomic backgrounds are more likely to believe in the just world, support ideologies of individual merit (e.g., “people get what they deserve”, and endorse class-related essentialism (e.g., “the upper-class are superior in genetic-biological ways”) – altogether, beliefs that tend to justify the current economic system at the cost of redistribution of resources or novel opportunities promoting upward mobility (Horberg, Kraus, & Keltner, 2013; Kraus & Keltner, 2013; Phillips & Lowery, 2020; Piff et al., 2018). Studies have also found that, even in the U.S. House of Representatives, higher status members (as assessed by their wealth, race, and gender) are more likely to defend economic inequality in their legislative behavior (Kraus & Callaghan, 2014). And in laboratory experiments, simply inducing a random subgroup of participants to feel higher in subjective status (by giving them false feedback on their discretionary income as compared to others in

society) led them to be less favorable of redistributive governmental policies and the supporting ideological principles (Brown-Iannuzzi et al., 2015).

However, the tendency to view the economic system, as is, as just can, inevitably, result in the blindness to extant inequality – which eventually contributes to the maintenance or perpetuation of extant inequality (Goudarzi, Pliskin, Jost, & Knowles, 2020; Kay et al., 2010; Piff et al., 2018). One such example is revealed in studies of complementary stereotypes (Fiske, Cuddy, Glick, & Xu, 2002; Kay & Jost, 2003; Lerner, 1980). For instance, researchers have found that the need to justify the extant system activates complementary stereotypes: attributing positive outcomes/characteristics to lower status groups (e.g., “poor but happier”) and attributing negative outcomes/characteristics to higher status groups (e.g., “successful but cold”). By portraying social reality as balanced in these ways, wherein elevated rank in societal hierarchies is assumed to be countervailed by personal costs, complementary stereotypes can promote people’s overall satisfaction with the status quo (Kay, Jimenez, & Jost, 2002; Kay, Czaplinsky, & Jost, 2009).

And when satisfied with the status quo, people become more likely to neglect disadvantaged others, and less likely to advocate for societal change (Kay et al., 2010). Finding insight from these literatures, in the current research I also test a second hypothesis – namely, that economic system justification (expected to be stronger among those of higher socioeconomic backgrounds) will statistically mediate the link between socioeconomic background and judgments of economic inequality (Goudarzi et al., 2020; Jost & Thompson, 2000).

Judgments of Economic Inequality and the Unhousedness Problem

Next, what would be the potential downstream consequences of the proposed differences in economic inequality judgments? To begin to address this question, I examine how the hypothesized differences might shape reactions toward other social-political issues of the day – examining the unhousedness problem as a specific example. In these analyses I test a third and final hypothesis: that judgments of economic inequality in the U.S. will statistically mediate the link between socioeconomic background and the diverging reactions (among those of higher vs. lower socioeconomic backgrounds) in the form of emotions and attributions related to the unhousedness issue.

Emotions

Hostile emotions such as anger and disgust have been found to predict more punitive attitudes toward other individuals (Carlsmith & Darley, 2002; Haidt, McCauley, & Rozin, 1999). In contrast, empathic emotions such as sympathy and compassion have been found to predict shifts in actions or attitudes that can benefit others who are more vulnerable, disadvantaged, and in pain/need (Batson & Shaw, 1992; Darlo, Mestre, Samper, Tur, & Armenta, 2010; Eisenberg et al., 1989; Goetz, Keltner, & Simon-Thomas, 2010; Haidt, 2003; Goetz & Peng, 2019; Horberg, Oveis, & Keltner, 2009; Malti, Eisenberg, & Kim, 2013; Oveis, Horberg, & Keltner, 2010; Piff & Moskowitz, 2017; Sontag, 2003). In Study 6, a study on the unhousedness problem, I expect elevated socioeconomic background to predict more (i.e., stronger) hostile emotions and less (i.e., weaker) empathic emotions toward unhoused people.

These predictions about emotions follow prior studies that have found reduced compassion among those of higher socioeconomic backgrounds – as measured in self-reports of baseline trait compassion, peripheral physiological responses (vagal activity) while watching videos of suffering children, and brain activity in empathy-related regions while viewing photos of others in pain (Piff & Moskowitz, 2017, 2018; Stellar et al., 2012; Varnum, Blais, & Brewer, 2016).

These predictions also, more broadly, build on studies that have shown how elevated social rank or power undermines empathy and perspective taking (Cho & Keltner, 2020; Galinsky, Magee, Inesi, & Gruenfeld, 2006; Keltner, 2016; Keltner, Gruenfeld, & Anderson, 2003; Van Kleef & Lange, 2020). Extending these lines of research, I test if judgments of economic inequality in the U.S. would mediate the link between socioeconomic background and the predicted emotions (empathic and hostile, each) related to the unhousedness problem.

Attributions

Also central to people's reactions toward social-political issues are the attributions that people make. Studies have shown that attributions (most commonly, internal vs. external) shape people's attitudes toward governmental policies related to a wide range of issues, from punishment to redistribution (Carlsmith et al., 2002; Darley, Carlsmith, & Robinson, 2000; Weiner, 1985). In the current work, with regard to the unhousedness problem (in Study 6), I expect those of higher (vs. lower) socioeconomic backgrounds to make more internal attributions and less external attributions – overall, being harsher judges of the unhoused people themselves (blaming them, rather than society, as responsible for their situation and the related societal costs).

These predictions, about attributions, derive from prior studies that have shown the critical role of socioeconomic background in shaping how an individual explains various life outcomes and incidents, good or bad (Fiske & Markus, 2012; Inesi, Gruenfeld, & Galinsky, 2012; Kraus et al., 2012). Elevated social rank or status enables a person to focus on one's own interests and goals, to the relative neglect of other individuals or the surrounding, social context (Cho & Keltner, 2020; Dietze & Knowles, 2016; Fiske, 1993, 2010; Guinote, 2007; Keltner, Gruenfeld, & Anderson, 2003). In a similar way, elevated socioeconomic background increases a person's freedom to act independently of the needs/intentions of others, whereas those of lower socioeconomic backgrounds tend to perceive their lives as more constrained by the external environment (Kraus, Piff, & Keltner, 2009; Snibbe & Markus, 2005; Stephens, Markus, & Townsend, 2007).

Accordingly, when explaining the cause of various social-political issues, those of higher socioeconomic backgrounds are more likely to attribute the outcome/incident to individual traits, genetic-biological tendencies, or choice (overall, making more internal attributions), while those of lower socioeconomic backgrounds are more likely to attribute the same outcome/incident to external social forces such as socioeconomic factors or institutions (overall, making more external/structural attributions; for related research, see Kraus & Keltner, 2013; Piff et al., 2018; Stellar et al., 2012). Findings from studies of social power, more broadly, also converge with the aforementioned findings (Cho & Keltner, 2020; Inesi et al., 2012; Lammers, Stapel, & Galinsky, 2010). Hence, in the current work, I build on these prior findings and test if judgments of economic inequality in the U.S. would mediate the link between socioeconomic background and the predicted attributional tendencies related to the cause of the unhousedness problem (and the related, negative consequences).

Overview of Methods

Seven studies tested the first and central hypothesis: that elevated socioeconomic background would be associated with the reduced likelihood to judge wealth distributions as severely unequal. Studies 1A and 1B examined judgments of regional income inequality. Study 2 analyzed data from 22 countries, for greater representativeness and replicability, examining judgments of national and global economic inequality. Study 3 analyzed participants' direct numerical estimates of incomes of various sectors of the U.S. society (top 1%, top 20%, average,

and bottom 20%) – a method which can distinguish judgments of inequality from judgments of poverty, and avoids limits of the self-report measures of economic inequality judgments used in Studies 1A to 2. Studies 4 and 5 manipulated the objective income distribution – to test if, when exposed to the same objective information about the distribution of wealth as depicted in manipulated photographs of actual high- or low-income pedestrians or as depicted in manipulated economic pie charts, participants of higher (vs. lower) socioeconomic backgrounds would still judge the same wealth distribution as less severely unequal. Studies 5 and 6 tested the second hypothesis: that economic system justification (expected to be stronger among those of higher socioeconomic backgrounds) will statistically mediate the hypothesized link between socioeconomic background and economic inequality judgments. Study 6 (the unhousedness problem study) tested the third and final hypothesis: that judgments of wealth inequality in the U.S. will statistically mediate the link between socioeconomic backgrounds and the predicted emotional and attributional reactions vis-à-vis the unhousedness problem.

Study 1A

Study 1A, an exploratory survey, examined judgments of regional income inequality – testing if elevated socioeconomic background is associated with the reduced likelihood to judge the regional income distribution as severely unequal.

Method

Participants. Participants were 185 individuals (53.51% female, 77.84% European American) residing in the U.S. and recruited from Amazon’s Mechanical Turk (Buhrmester, Kwang, & Gosling, 2011). Mean age of the sample was 36.6 years ($SD = 11.49$), and all received \$1 for taking part in the study.

Measures.

Socioeconomic background. Throughout the current studies (except for Study 2, using publicly available data collected by other researchers), I assessed the socioeconomic background of participants using both subjective and objective measures. First, participants completed the MacArthur Scale of Subjective SES (Adler et al., 2000; Kraus et al., 2009). This measure involves a ladder image and the question: “Think of a ladder with 10 rungs representing where people stand in the United States. At the top of the ladder are the people who are the best off, those who have the most money, most education, and best jobs. At the bottom are the people who are the worst off, those who have the least money, least education, and worst jobs or no job. Between 1 (bottom) and 10 (top), where do you think you stand on the ladder in general?” Higher scores indicate higher subjective SES ($M = 4.77$, $SD = 1.80$).

Participants also reported on their objective, annual household income (before tax): (a) less than \$15,000, (b) \$15,001-\$25,000, (c) \$25,001-\$35,000, (d) \$35,000-\$50,000, (e) \$50,001-\$75,000, (f) \$75,001-\$100,000, (g) \$100,001-\$150,000, and (h) greater than \$150,000. Median household income was between \$35,000 and \$50,000.

Judgment of income inequality. On a 7-point scale (1 = extremely equal to 7 = extremely unequal), participants judged the income distribution in their residential area and surrounding community ($M = 4.35$, $SD = 1.39$).

Gini index of income inequality. For an objective indicator of regional income inequality (to compared with participants’ judgments), based on the participants’ self-reported ZIP codes, I obtained the Gini index of income inequality (of the respective ZIP codes) from the 2015 American Community Survey (which matches the year when this MTurk survey was conducted). Higher scores indicate greater income inequality within the ZIP code ($M = .44$, $SD = .05$).

Political ideology. As a control variable, I also measured the political ideology of participants (Chambers et al., 2013). On a 7-point scale (1 = extremely liberal to 7 = extremely conservative), participants indicated the degree to which they consider themselves as liberal or conservative on most political and social issues ($M = 4.05$, $SD = 2.53$).

Results and Brief Discussion

I found that participants of higher (vs. lower) socioeconomic backgrounds were significantly less likely to judge the regional income distribution as severely unequal (Table 1) – a tendency that was found across both subjective and objective measures of socioeconomic background, and held significant after controlling for political ideology. Next, I tested whether, and the degree to which, participants' judgments of regional income inequality reflected the objective inequality (as captured in the Gini index of the respective ZIP codes). I found a significant, positive association between participants' judgments and the Gini index. Thus, their judgments did significantly reflect the objective reality in this study – those residing in more unequal ZIP codes actually being significantly more likely to judge the regional income distribution as unequal. This association between participants' judgments and the objective inequality was not significantly moderated by their socioeconomic background (subjective SES: $B = -.91$, $SE = .98$, $t = -.93$, $p = .35$, 95% CI = [-2.83, 1.01]; household income: $B = -.83$, $SE = 1.17$, $t = -.71$, $p = .48$, 95% CI = [-3.13, 1.47]) – not revealing significant differences between those of higher vs. lower socioeconomic backgrounds in the extent to which their judgments reflected reality. And even after controlling for the Gini index, those of higher (vs. lower) socioeconomic backgrounds were significantly less likely to judge the regional income distribution as severely unequal.

Study 1B

I conducted Study 1B, a confirmatory study, to replicate the main findings of Study 1A in a different sample (college students).

Method

Participants. Participants were 360 undergraduate students (68.1% female, 28.1% European American) of a large public university on the West Coast of the U.S. Age ranged from 18 to 44 ($M = 21.24$, $SD = 2.94$), and all received course credit for participating in the study.

Measures.

Socioeconomic background. As in Study 1A participants completed the MacArthur Scale of Subjective SES (Adler et al., 2000; $M = 6.17$, $SD = 1.82$) and reported on their objective household income (median: \$50,001-\$75,000).

Judgment of income inequality. Using the same scale from Study 1A (1 = extremely equal to 7 = extremely unequal), participants judged the income distribution in their residential area and surrounding community ($M = 4.82$, $SD = 1.41$).

Political ideology. Participants also reported on their political ideology as in Study 1A (1 = extremely liberal to 7 = extremely conservative; $M = 2.72$, $SD = 1.23$).

Results and Brief Discussion

Replicating Study 1A, elevated socioeconomic background was associated with the reduced likelihood to judge the regional income distribution as severely unequal (Table 1) – a tendency which was observed across both measures of social class and persisted after controlling for political ideology.

Study 2

Turning to large-scale, cross-country data for greater representativeness and replicability, Study 2 analyzed the 2019 ISSP (International Social Survey Programme, Social Inequality V) data.

Method

Participants. Participants were 35,127 respondents residing in 22 countries (Bulgaria, Chile, Croatia, Czech Republic, Denmark, Finland, Germany, Iceland, Israel, Italy, Japan, Lithuania, New Zealand, Philippines, Russia, Slovenia, South Africa, Suriname, Switzerland, Taiwan, Thailand, United Kingdom).

Measures.

Socioeconomic background. From the original survey I obtained one indicator of subjective SES, based on a ladder measure which is fairly similar to my MacArthur ladder measure ($M = 5.24$, $SD = 1.82$).

Judgment of income inequality. I obtained two measures of economic inequality judgments: judgment of national economic inequality assessed with the statement, “Differences in income in [country] are too large (1 = strongly disagree, 5 = strongly agree; $M = 4.15$, $SD = .92$)” and judgment of global economic inequality assessed with the statement, “Present economic differences in between rich and poor countries are too large (same 5-point scale; $M = 4.12$, $SD = .84$).”

Gini index of income inequality. As an objective indicator of national income inequality, I obtained the Gini index for the respective countries ($M = .76$, $SD = .08$), from the World Inequality Database.

Results and Brief Discussion

I analyzed the data from 22 countries using the lme function in R, to account for the nature of the data (participants nested within countries). Across the 22 countries, participants of higher (vs. lower) socioeconomic backgrounds were significantly less likely to judge that income differences (between the wealthy and poor) in their country (of residence) are too large (Table 1). Next, similar to my prior analyses involving the Gini index in Study 1A, I tested if participants’ judgments of national economic inequality significantly reflected the objective national inequality (as captured in the Gini index of the respective countries). As a result, I did not find a significant association between participants’ judgments of national economic inequality and the Gini index. Next, to test if there are significant differences between those of higher vs. lower socioeconomic backgrounds in the extent to which their judgments of national economic inequality reflected objective national inequality, I tested if there is a significant interaction between participants’ socioeconomic background and the Gini index in predicting judgments of national economic inequality. However, I did not find a significant interaction between their socioeconomic background and the Gini index predicting judgments of national economic inequality ($B = .04$, $SE = .03$, $t = 1.09$, $p = .28$). Moving on to examine judgments of global economic inequality, I found that those of higher (vs. lower) socioeconomic backgrounds were also significantly less likely to judge that global economic differences (between wealthy and poor countries) are too large ($B = -.03$, $SE = .00$, $t = -11.05$, $p = .000$).

Study 3

In Study 3, participants provided direct numerical estimates of incomes in the U.S. In raw USD, they estimated the incomes of various populations in different percentiles of earning (top 1%, top 20%, average, and bottom 20%). In keeping with my prior findings, and the central hypothesis, I expected the estimates provided by those of higher (vs. lower) socioeconomic backgrounds to reveal a smaller income gap between higher and lower income populations.

By using this particular method, I sought to overcome the measurement limitations inherent in my prior, single-item measures of economic inequality judgments (used in Studies 1A, 1B, and 2). Also, importantly, I attempted to rule out an alternative account: that the observed differences in economic inequality judgments (between those of higher vs. lower socioeconomic backgrounds) might in fact reflect judgments (or awareness) of poverty rather than judgments of the full spectrum of inequality. Moreover, these income estimates also allowed more direct, objective, and fine-grained examinations of accuracy (the extent to which participants' thoughts about current economic inequality are accurate reflections of the actual distribution of wealth), compared to prior studies (Studies 1A and 2) wherein I was comparing statement-based self-reports with the Gini index.

Method

Participants. Participants were 420 individuals (51.79% male; 76.61% European American) living in the U.S. and recruited via Amazon's Mechanical Turk. Mean age was 35.43 ($SD = 13.40$), and all received \$.5 for participating.

Measures.

Socioeconomic background. Participants completed the MacArthur Scale of Subjective SES (Adler et al., 2000; $M = 4.74$, $SD = 1.72$) and provided their household income (median: \$50,001-\$75,000) as in my other studies.

U.S. income estimates. In raw USD, and without referring to external sources of information such as the internet, participants provided their own numerical estimates about incomes in the U.S. In randomized order, which prevents potential anchoring or order effects, they answered the following questions: "In the U.S., how much do you think the average person earns each year? ($M = 4.67$, $SD = .23$)" "In the U.S., how much do you think the average person in the top 1% of the income distribution earns each year? ($M = 6.32$, $SD = 1.16$)" "In the U.S., how much do you think the average person in the top 20% of the income distribution earns each year? ($M = 5.39$, $SD = .58$)" "In the U.S., how much do you think the average person in the bottom 20% of the income distribution earns each year? ($M = 4.27$, $SD = .29$)." The aforementioned descriptive statistics are based on log-transformed income (Kahneman & Deaton, 2010; Killingsworth, 2021; Stevenson & Wolfers, 2008, 2013). For the means and medians in raw USD, see Supplemental Materials, Table 1. Furthermore, in order to compare these estimates (provided by participants) with the actual, respective incomes (to assess the accuracy of participants' estimates), I also obtained the actual numbers from the U.S. Census Bureau (see Supplemental Materials, Table 1).

Political ideology. Participants reported on their political ideology as in my other studies (1 = extremely liberal to 7 = extremely conservative; $M = 2.92$, $SD = 1.49$).

Results and Brief Discussion

I found that, across measures of socioeconomic background, the estimates provided by participants of higher (vs. lower) socioeconomic backgrounds revealed a smaller income gap between higher and lower income populations in the U.S. (Table 2). In other words, elevated socioeconomic background was associated with the tendency to estimate that the top 1% and 20% in the U.S. earn less, and that the bottom 20% and average person in the U.S. earn more. These results rule out the alternative account that judgments of economic inequality simply reflect judgments of poverty – in that those of higher vs. lower socioeconomic backgrounds significantly differed in their estimates of incomes at both ends of the income distribution.

Next, to examine "which people are being more accurate (those of higher vs. lower socioeconomic backgrounds), I examined if socioeconomic background is also significantly

associated with the absolute accuracy of participants' income estimates (Table 2). To do so, I computed two indicators: 1) difference scores (estimated income – actual income) and 2) absolute difference scores (|estimated income – actual income|). In the difference scores, which reflect overestimation and underestimation of incomes, I rarely observed significant effects of socioeconomic background. However, in the absolute difference scores, which reflect overall accuracy regardless of whether it reflects overestimation or underestimation, I found a tendency for the estimates provided by those of higher (vs. lower) socioeconomic backgrounds to deviate less from the actual, respective incomes. I revisit and discuss these results in the General Discussion, to discuss altogether with results from my other studies in the current investigation. And I also provide more detailed plots depicting the distributions of participants' estimates, as is, and as functions of their socioeconomic background, in Supplemental Materials, Figures 2A to 6B.

Study 4

In Study 4, I conducted a between-person experiment with four conditions (inequality, high-income equality, middle-income equality, and low-income equality) to manipulate the objective income distribution. Participants viewed a photograph of a manipulated array of 21 actual pedestrians, photographed from the actual streets of the San Francisco Bay Area. These pedestrians, photographed in their naturalistic contexts, were arrayed in one of four different ways based on their actual, objective incomes (Supplemental Materials, Figures 7A and 7D; also see Connor et al., 2020 for detailed information on the creation and validation of these stimuli). That is, in the inequality condition, the 21 pedestrians represented a significantly wide spread of economic wealth (or economic inequality). In the three equality conditions, the 21 pedestrians represented either similarly high-income, middle-income, or low-income.

Depending on the experimental condition, participants judged the wealth distribution among the 21 pedestrians presented to them. Confronted with the same visual and social information (within each condition), I expected participants of higher (vs. lower) socioeconomic backgrounds to still judge the same wealth distribution (among the pedestrians) as less severely unequal.

Method

Participants and procedure. Participants were 405 individuals (55.06% male; 63.46% European American) residing in the U.S. and recruited via Amazon's Mechanical Turk. Mean age was 36.04 ($SD = 11.37$) and all received \$.5 upon completion. After indicating their consent, all participants were randomly assigned to one of four experimental conditions: inequality ($N = 101$), high-income equality ($N = 104$), middle-income equality ($N = 101$), and low-income equality ($N = 99$).

Measures.

Socioeconomic background. As in my prior studies participants completed the MacArthur Scale of Subjective SES (Adler et al., 2000; $M = 5.58$, $SD = 1.90$) and provided their objective household income (median: \$50,001-\$75,000).

Judgment of wealth inequality. Participants in each condition viewed one of the four different photographs, portraying an array of 21 pedestrians (Supplemental Materials, Figures 7A to 7D; Connor et al., 2020). Each photo portrayed an array of 21 pedestrians who, depending on the condition, had significantly varying income or had similarly high-, middle-, or low-income.

Participants were presented with the following instructions: "This is a group of people who represent a hypothetical society. Now, with regard to this hypothetical society, please indicate the extent to which you agree with the following statements." They judged the degree of wealth

inequality by responding to the following items 1 = strongly disagree to 7 = strongly agree): “The distribution of wealth in this society is very unequal,” “There is not a big difference in the distribution of wealth from the bottom to the top of this society (reverse),” “Wealth in this society is fairly equally spread (reverse).” These three items, adapted from relevant, prior research (Kteily et al., 2017), were averaged across for a single score (total $\alpha = .679$; all conditions: $M = 3.88$, $SD = 1.35$; inequality condition: $M = 4.67$, $SD = 1.30$, high-income equality condition: $M = 3.50$, $SD = 1.34$; middle-income equality condition: $M = 3.61$, $SD = 1.21$; low-income equality condition: $M = 3.78$, $SD = 1.23$).

Political ideology. Participants reported on their political ideology (1 = extremely liberal to 7 = extremely conservative; $M = 3.38$, $SD = 1.52$).

Results and Brief Discussion

In Study 4 I conducted an experiment with four between-person conditions, to manipulate the objective income distribution: inequality, high-income equality, middle-income equality, and low-income equality (Supplemental Materials, Figures 7A to 7D). As a result, I observed an overall tendency for participants of higher (vs. lower) socioeconomic backgrounds to judge the wealth distribution as less severely unequal (Table 1). This tendency, when testing the main hypothesis within each of the four conditions, was statistically significant only within the inequality condition. In that socioeconomic background was significantly associated with differences in wealth inequality judgments when there was an objectively significant, and visually evident, variation in wealth among the 21 pedestrians (and not when the 21 pedestrians had similarly low-income), these results contribute to ruling out the alternative account that differences in wealth inequality judgments simply reduce to judgments or awareness of poverty. If this alternative explanation were true, I would be observing significant differences between participants of higher vs. lower socioeconomic backgrounds in their wealth inequality judgments when exposed to the low-income equality stimuli.

In addition, in that there was an overall tendency for participants to actually judge the wealth distribution as most unequal in the inequality condition, as compared to the three equality conditions, the pattern of results from this study are, in part, in keeping with my results from Study 1A. That is, in both studies, based on different methods, the participants’ judgments of wealth inequality were reflecting the actual, objective inequality (participants’ judgments of regional income inequality significantly reflected the Gini index of the respective ZIP codes in Study 1A), rather than simply reflecting extant poverty.

Study 5

In Study 5, I created more nuanced variations in the manipulation of objective income inequality, compared to Study 4 wherein there was only one inequality condition and three equality conditions. In this within-person study all participants, in random order, judged the income distributions of five hypothetical societies – as depicted and presented to them in the form of manipulated economic pie charts. In addition, they also judged the income inequality in the actual, current U.S. (without referring to any visual stimuli etc.).

Across varying degree of objective income inequality, hypothetical or real, I expected participants of higher (vs. lower) socioeconomic backgrounds to judge income distributions, overall, as less severely unequal. And in this study, I also attempted an initial testing of the second hypothesis: that economic system justification will statistically mediate the link between socioeconomic background and judgments of economic inequality. This shines a light on one of multiple possible reasons why differences in economic inequality judgments, as a function of

socioeconomic background, emerge with such robustness in varying contexts (as observed in the current studies).

Method

Participants. Participants were 199 individuals (49.2% female, 74.9% European American) located in the U.S. and recruited via Amazon's Mechanical Turk. Mean age was 33.8 years ($SD = 10.11$) and all received \$1 for participating in the experiment.

Measures.

Socioeconomic background. Participants completed the MacArthur Scale of Subjective SES (Adler et al., 2000; $M = 4.64$, $SD = 1.58$) and provided their objective household income (median: \$35,000-\$50,000). Given the high correlation between subjective SES and household income ($r = .618$, $p = .000$, for convenience and efficiency in the mediation analyses, I averaged across these two scores and created a socioeconomic background composite ($M = .00$, $SD = .90$).

Judgment of income inequality. Participants judged the degree of income inequality of the five hypothetical societies and also the actual U.S. by responding to the following items (adapted from Kteily et al., 2017 as in Study 4):

Five hypothetical societies. All participants viewed and judged the (degree of inequality of) the income distributions of five hypothetical societies (Supplemental Materials, Figures 8A to 8E). These income distributions were depicted in manipulated pie charts, from most equal to most unequal, and were presented one at a time in randomized order (to prevent possible anchoring or order effects).

For each society, participants judged the income inequality, as in Study 4, by responding to the following items (1 = strongly disagree to 7 = strongly agree): "The distribution of income in this society is very unequal," "There is not a big difference in the distribution of income from the bottom to the top of this society (reverse)," "Income in this society is fairly equally spread (reverse)." As in Study 4, I averaged across these three items for a single score (total $\alpha = .893$; all five societies: $M = 5.20$, $SD = 1.03$, society 1: $M = 3.38$, $SD = 1.43$; society 2: $M = 5.28$, $SD = 1.30$; society 3: $M = 5.65$, $SD = 1.36$; society 4: $M = 5.81$, $SD = 1.44$; society 5: $M = 5.85$, $SD = 1.60$).

U.S. Without viewing any visual, or external, information the participants also judged the current income inequality in the actual U.S. society by responding to similar items (1 = strongly disagree to 7 = strongly agree): "The distribution of income in the United States is very unequal," "There is a big income discrepancy between the rich and poor in the United States," "Income in the United States is fairly equally spread (reverse)." I also averaged across these three items for a single score ($\alpha = .753$, $M = 5.85$, $SD = 1.10$).

Political ideology. Participants reported on their political ideology as in my prior studies (1 = extremely liberal to 7 = extremely conservative; $M = 2.87$, $SD = 1.45$).

Economic system justification. To test my second hypothesis, as a potential mediator in the link between socioeconomic background and economic inequality judgments, I measured participants' economic system justification with the 17-item scale from prior research (Jost & Thompson, 2000). Higher scores indicate stronger economic system justification ($\alpha = .889$, $M = 3.39$, $SD = 1.09$).

Social dominance orientation. And aware of prior research on how social dominance orientation is associated with the acknowledgment of social hierarchy or inequality in general, in this study I also measured social dominance orientation as another control variable (along with political ideology) using the 16-item scale from prior studies (Ho et al., 2015; Kteily et al., 2017; $\alpha = .932$, $M = 2.44$, $SD = 1.31$).

Results and Brief Discussion

As in Study 4, I found an overall tendency for participants of higher (vs. lower) socioeconomic backgrounds to judge the income distributions as less severely unequal, across measures of socioeconomic background (Table 1). This main tendency remained significant in most cases when controlling for participants' political ideology or social dominance orientation. Also, I observed that this tendency (differences in income inequality judgments as a function of socioeconomic background) was most pronounced in societies 2, 3, and 4 (wherein the objective, actual inequality was relatively more ambiguous or moderate) and attenuated in societies 1 and 5 (wherein objective, actual inequality was quite apparently equal or unequal). Participants of higher (vs. lower) socioeconomic backgrounds were also judging current income inequality in the actual U.S. society as relatively less severe (in keeping with their judgments of hypothetical income distributions).

Related to my second hypothesis, elevated socioeconomic background was associated with stronger economic system justification (Table 3), and economic system justification was associated with the reduced likelihood to judge income distributions as severely unequal (Table 1). Thus, I proceeded to test my second hypothesis, bootstrapping with 10,000 iterations (Table 3). As a result, I found that, statistically, economic system justification partially mediated the link between socioeconomic background and income inequality judgments (for both the hypothetical ones, and the actual U.S., each; Preacher & Hayes, 2004). Yet I do take, and interpret, these mediation results with caution, given the correlational nature of the data and the ongoing, methodological debates on statistical mediation (Maxwell & Cole, 2007).

Study 6

Study 6, the final study in the current investigation, sought to 1) replicate my prior results (including the mediating role of economic system justification in the link between socioeconomic background and economic inequality judgments), and 2) examine how the robustly observed differences in economic inequality judgments (as a function of socioeconomic background) unfold in, and might account for, diverging reactions toward a different social-political issue.

For the latter aim, in this study, specifically, I examined the unhousedness problem. Hence, in this study I also tested my third and final hypothesis: that judgments of economic inequality in the U.S. will statistically mediate the link between social class and (emotional and attributional) reactions vis-à-vis the unhousedness problem. In the U.S., more than 500,000 individuals have been unhoused on any given night during the past decade, with their encampment affecting most cities in the U.S. (Tsai & Wilson, 2020). As described in the Introduction, with regard to this societal problem, I expected those of higher (vs. lower) socioeconomic backgrounds to report feeling more hostile (vs. empathic) emotions toward unhoused people, and to make more internal (vs. external/structural) attributions about the cause of the unhousedness problem (and the related societal costs).

Method

Participants. Participants were 303 individuals (50.83% female; 66.34% European American) residing in the U.S. and recruited via Amazon's Mechanical Turk. Mean age was 37.16 ($SD = 11.11$). All received \$.6 for participating in the study.

Socioeconomic background. Participants completed the MacArthur Scale of Subjective SES (Adler et al., 2000; $M = 5.16$, $SD = 1.827$) and provided their objective household income (median: 50,001-\$75,000) as in my prior studies. As in Study 5, given the high correlation between subjective SES and household income ($r = .55$, $p = .000$), for the mediation analyses I

averaged across these two scores into a socioeconomic background composite ($M = -.014$, $SD = 1.760$).

Judgment of income inequality. As in Study 5, participants judged income inequality in the current U.S. society (1 = strongly disagree to 7 = strongly agree): “The distribution of income in the United States is very unequal,” “There is a big income discrepancy between the rich and poor in the United States,” “Income in the United States is fairly equally spread (reverse item)” ($\alpha = .780$, $M = 5.636$, $SD = 1.130$).

Emotional and attributional reactions vis-à-vis the unhousedness problem. All participants viewed a video (approximately 5-min) depicting the San Francisco unhousedness crisis – in which facts were presented concerning the increasing unhousedness and how this change has become a critical social problem in the region, causing massive economic costs and societal inconvenience. After viewing this video, participants reported on their emotions and attributions, related to the unhousedness problem, as follows (see Table 4 for descriptive statistics of the following variables):

Emotions. After viewing the video, on a 7-point scale (1 = not at all to 7 = extremely), participants reported on the extent to which they felt hostile emotions (i.e., anger, contempt, & disgust; Rozin & Haidt, 1993; $\alpha = .839$) and empathic emotions (i.e., compassion, sympathy; Oveis et al., 2010; $\alpha = .920$) toward the unhoused problem in the video (at the moment).

Attributions. On the same scale (1 = not at all to 7 = extremely), participants also reported on the extent to which they thought this societal problem (the unhousedness problem) was due to internal factors (i.e., the character of unhoused people, that they do not work/try hard enough; $\alpha = .728$) and external/structural factors (i.e., capitalism, economic policy, the government, social injustice, the social system, the top 1%, & wealth inequality; $\alpha = .913$).

Political ideology. Participants reported on their political ideology as in prior studies (1 = extremely liberal to 7 = extremely conservative; $M = 3.38$, $SD = 1.482$).

Economic system justification. As in Study 5, I measured participants’ economic system justification with the same 17-item scale (Jost & Thompson, 2000; $\alpha = .861$, $M = 3.531$, $SD = .903$).

Results and Brief Discussion

Replicating my prior results, I observed that 1) participants of higher (vs. lower) socioeconomic backgrounds were significantly less likely to judge the U.S. income distribution as severely unequal (Table 1), and that 2) economic system justification statistically mediated the link between socioeconomic background and judgments of income inequality in the U.S. (Table 3). I proceeded to examine how these observed differences (in income inequality judgments) unfold in, and might account for, the predicted differences (between those of higher vs. lower socioeconomic backgrounds) in the emotional and attributional reactions toward the unhousedness problem.

In the emotions, elevated socioeconomic background was associated with self-reports of stronger hostile emotions and weaker empathic emotions toward the unhoused people (Table 4). Those judging the U.S. income distribution as less severely unequal, and those stronger in economic system justification exhibited these similar emotional patterns (as those of higher socioeconomic backgrounds). And in support of my third hypothesis, bootstrapping with 10,000 iterations (Table 3) suggested that judgments of income inequality (in the current U.S.) statistically mediated the link between socioeconomic background and the aforementioned emotions, respectively (hostile emotions: partial mediation; empathic emotions: full mediation).

In the attributions, participants of higher (vs. lower) socioeconomic backgrounds were more likely to make internal attributions and less likely to make external/structural attributions about the cause of the unhousedness problem (Table 4). That is, they were judging the unhoused people themselves or their lack of effort, rather than the overall system or structural economic inequality itself, as responsible of the problem (and the related societal costs). Again, those judging the U.S. income distribution as less severely unequal and those stronger in economic system justification exhibited these similar attributional patterns. And as with emotions, also in keeping with my third hypothesis, bootstrapping with 10,000 iterations (Table 3) suggested that judgments of income inequality (in the current U.S.) statistically mediate the link between social class and these attributional tendencies, each (internal attribution: partial mediation; external/structural attribution: full mediation).

General Discussion

In the classic *Discourse on Inequality* (1755) Jean Jacques Rousseau claimed that, to understand the fundamental origins of inequality we must understand how people think and feel about their social circumstances. In that sense, I believe the current investigation contributes to the much needed, and time-pressing, understanding of the growing structural economic inequality observed in many places of the world, by demonstrating a sequence through which socioeconomic background profoundly shapes how an individual thinks about the distribution of wealth (that one is surrounded by or exposed to). That is, through the current investigation I proposed and demonstrated that one of the presumably many engines of structural economic inequality and its reinforcement might be the critical differences between individuals of higher vs. lower socioeconomic backgrounds in their judgments of the severity of wealth inequality itself.

Socioeconomic Background and Judgments of Economic Inequality

In the current research, seven empirical studies provided robust evidence revealing that elevated socioeconomic background is associated with the reduced likelihood judge wealth distributions as severely unequal. I observed this main phenomenon quite consistently across different kinds of wealth distributions (regional, national, and global; hypothetical and real), across measurements (from numerical estimates of incomes in the U.S. to judgments based on visual, objective instantiations of inequality), across designs (from within- and cross-country surveys to within- and between-person experiments), and across samples and countries varying in their objective degrees of national economic inequality (total N = 37,000; 22 countries).

The current results also provided initial reasons into one of the possible reasons why these differences in judgments of economic inequality, as shaped by socioeconomic background, emerge with such robustness. Individuals of higher socioeconomic backgrounds tend to benefit more from the current economic system, experiencing less unfairness and injustice within it. Thus, they have more reasons to view the system, as is, as just – thereby accepting the status quo with less resistance and skepticism. However, as prior research and the current studies (Studies 4 and 5) suggest, these tendencies can result in the relatively reduced sensitivity to the degree of extant wealth inequality, even when presented as the income distribution of a hypothetical society that one does not even belong to and thus is not directly influenced by (Goudarzi et al., 2020; Kay et al., 2010; Piff et al., 2018). In contrast, individuals of lower socioeconomic backgrounds are significantly more disadvantaged and threatened by the current economic system and various socioeconomic hierarchies, and thus have more reasons to view the status quo as unfair, unjust, and problematic. These tendencies can likely heighten their sensitivity to the severity and negative consequences of extant wealth inequality.

Furthermore, results from my study on the unhousedness problem (Study 6) suggest that these varying thoughts about current structural economic inequality, as shaped by the socioeconomic backgrounds of individuals, could be driving the diverging reactions (as observed in both emotional and attributional tendencies) toward other social-political issues of the day – including how people respond to others who are the most vulnerable and disadvantaged.

The Question of Accuracy

In addition to showing how socioeconomic background is associated with judgments of the severity of economic inequality, some of the current data also allowed, in different ways, the examination and discussion of accuracy (how accurate people's judgments of inequality are, and whether this accuracy might vary as a function of their socioeconomic background).

First, in the current studies, the extent to which participants' judgments of economic inequality, in general (regardless of socioeconomic background), reflected the objective inequality was at times statistically significant and at times nonsignificant. In Study 1A, participants' judgments of regional income inequality significantly reflected the Gini index of income inequality of the respective ZIP codes. And in Studies 4 and 5, wherein participants judged the wealth distributions of hypothetical societies as depicted in manipulated photographs of high- and low-income pedestrians (Study 4) or as depicted in manipulated economic pie charts (Study 5), participants' judgments did reflect the objective degree of inequality portrayed in these visual stimuli. That is, in Study 4, those assigned to the inequality condition judged the wealth distribution as more severely unequal than did those assigned to the three equality conditions (high-income, middle-income, and low-income equality conditions). Also in Study 5, a within-person study, participants judged the hypothetical society with the objectively most unequal income distribution as more severely unequal, compared to other societies with objectively less income inequality (as depicted in the economic pie charts). These results, from Studies 1A, 4, and 5, seem to suggest that our judgments about the distribution of wealth do, to some degree, reflect the actual inequality.

However, in Study 2, the cross-country study based on data from 22 countries, participants' judgments of national economic inequality did not significantly reflect the Gini index of the respective countries. Then, altogether, results from the aforementioned studies (Studies 1A, 2, 4, and 5) seem to provide partly inconsistent answers to the question: do lay people's judgments of structural economic inequality accurately reflect the actual distribution of wealth?

Second, perhaps more important to the current research, some of the current data also allowed more direct or indirect inferences related to the question: do individuals of higher vs. lower socioeconomic backgrounds also differ in the accuracy of their judgments about the wealth distribution (which people are correct)? Yet the data related to this discussion also led to mixed observations. In Studies 1A and 2, participants' socioeconomic backgrounds were not significantly associated with the extent to which their judgments of the regional income inequality (Study 1A) or national economic inequality (Study 2) reflected the Gini index at the ZIP code level (Study 1A) or at the country level (Study 2).

However, in Study 3, the study based on participants' direct numerical estimates of incomes in the U.S., wherein I mainly found that estimates provided by participants of higher (vs. lower) socioeconomic backgrounds revealed smaller income gaps between higher and lower income populations in the U.S., I did observe some evidence suggesting that the estimates provided by those of higher (vs. lower) socioeconomic backgrounds deviate less from the actual, respective incomes. Then, at least within Study 3, it seemed that elevated socioeconomic background was associated with more accurate or realistic representations of the current income

distribution in the U.S. And this finding is in keeping with a body of prior research wherein elevated social rank or status was associated with relatively more accurate knowledge about the overall hierarchy or inequality (Griffiths, Stretton, & Dalgleish, 2022; Norton & Ariely, 2011). Then, put together, these studies (Studies 1A, 2, and 3), also seem to have yielded mixed answers to the question: does socioeconomic background also predict the accuracy of people's judgments (or awareness) of the wealth distribution?

To summarize, altogether, these patterns of mixed observations with regard to the accuracy of lay people's economic inequality judgments (either in general or as a function of their socioeconomic backgrounds), as of now, seem to confirm the field's tentative acknowledgment that the absolute accuracy of these judgments is a complicated issue to address, sensitive to many contextual factors – such as how things are operationalized, framed, measured, and presented in the research. I revisit and further discuss this topic in the Limitations and Future Directions section below.

The Underlying Perceptual and Judgmental Processes

Rather conceptual issues about the processes through which socioeconomic background influences the relative neglect or denial of extant economic inequality also await further examinations. Throughout the current investigation, in the theorizing and empirical analyses, for the sake of conceptual consistency (or at least consistency in the use of academic terminology), I used the term “judgment” to refer to my main dependent variable (judgment of economic inequality). However, considering how this variable was specifically measured in the current studies, the conceptual proximity or relatedness, and the varying use of different terms in prior research (judgment, perception, representation, awareness, lay beliefs of/about economic inequality, etc.), one could think of and refer to this phenomenon as “perception and judgment” etc., rather than solely judgment per se (Chambers et al., 2014; Davidai & Gilovich, 2018; Davidai & Wienk, 2021; Eriksson & Simpson, 2012; Hauser & Norton, 2017; Kteily et al., 2017; Norton & Ariely, 2011; Phillips et al., 2022; Willis et al., 2022).

That is, to be more concrete, what exactly are the current data revealing? Does socioeconomic background affect the automatic, perceptual processes that come before judgments, or does it affect rather conscious, evaluative judgments based on the processed information?

If socioeconomic background influences the initial “perception” of economic inequality, it could mean that those of higher vs. lower socioeconomic backgrounds differ in the actual processing of the stimulus itself. In this case, for example, in my study using the manipulated arrays of 21 actual pedestrians (Study 4), participants of higher (vs. lower) socioeconomic backgrounds may have judged the same wealth distribution (in the inequality condition) as less severely unequal because they were not processing (and thus were not even aware of) the evident, visual cues of inequality – such as the differences in the clothing of the wealthy vs. poor pedestrians, etc.

However, if socioeconomic background instead influences the “judgment” of economic inequality (which follows the initial perception), it could mean that those of higher vs. lower socioeconomic backgrounds rather differ in their subjective evaluations of the information (about the wealth distribution) that has already been processed. In this case, in study sample study (study 4), as an example, participants of higher (vs. lower) socioeconomic backgrounds may have recognized most of the visual cues of inequality (noticing how the wealthy and poor pedestrians vary in their attire, etc.) in a similar manner, but then made different evaluations

based on the same perceptual information – e.g., perhaps having a stricter threshold or standard for what they evaluate as sufficiently “unequal.”

Also, as the field has begun to consider, it could also be possible that the perception and judgment of structural economic inequality are nonlinear processes composed of multiple interrelated steps (Phillips et al., 2022). In other words, the perception of inequality might be composed of several steps (as in other perceptual processes such as human visual processing) that influence each other in a nonlinear manner, and the same might apply to the judgment of inequality as well. The questions raised in this section call for further theoretical and empirical examinations to disentangle the nuanced components of the phenomenon that is mainly referred to as “judgment” of economic inequality in the current work.

Limitations and Future Directions

Still other questions remain for future studies, several of which are tied to the limitations of the current studies. The majority of current data are correlational, which is related to the nature of the independent variable – socioeconomic background. Although the current studies include experiments in which I manipulated the objective income inequality (Studies 4 and 5), I did not directly manipulate the independent variable, socioeconomic background. I note that the socioeconomic background that a person is born within, and lives within, is difficult to manipulate with any reliability within a controlled laboratory setting, despite the presence of certain proxies used in prior research. In such studies researchers have demonstrated the influence of socioeconomic background (or social class) by 1) using the MacArthur ladder image and instructing participants to think that they belong to the top (high socioeconomic background) vs. bottom (low socioeconomic background) rung on the ladder, or 2) giving participants false feedback about their discretionary income as compared to others in society and thus manipulating their subjective sense of status in society (Brown-Iannuzzi et al., 2015; Kraus et al., 2010). Hence, the current data do not explicitly speak to causality, although I consider it as more plausible for socioeconomic background (objective income, at least) to shape one’s judgments of economic inequality rather than the reverse (inequality judgments shaping one’s sense of rank or status). And as I have noted, statistical mediation, which was used several times in the current studies (Studies 5 and 6), are subject to ongoing methodological debates (Maxwell & Cole, 2007).

The question of accuracy (do people really know about the degree of current structural economic inequality, and is this influenced by socioeconomic background) also requires further examinations and thoughts. In the current work, in all studies that contained any data that allows me to approach this issue via either more direct or indirect ways, I tried to conduct such analyses. However, given the specific designs and measurements used in those studies, one could still question whether those analyses really are, in fact, sufficiently clear and appropriate ways to assess the accuracy on people’s inequality judgments.

For instance, in Studies 1A and 2, wherein I analyzed participants’ judgments of regional income inequality (Study 1A) and national economic inequality (Study 2) with the single-item statement measures (described in the respective Method sections), and examined how they reflect the actual Gini index (Study 1A: at the ZIP code level; Study 2: at the country level), those statement-based measures (of inequality judgments) could simply have different meanings to individuals of higher vs. lower socioeconomic background. In that case, analyzing those measures, in relation to the Gini index, may not provide a reliable or valid indicator for the assessment of “accuracy” per se.

In a similar way, the three-item scales (also based on statements) used to measure judgments of economic inequality in Studies 4 and 5, wherein participants were exposed to, and judged, wealth distributions depicted in visual stimuli (Study 4: arrays of actual pedestrian; Study 5: economic pie charts), may also have similar issues – for example, failing to have the same meanings to all participants regardless of their socioeconomic background. Concerns like this make the assessment of accuracy quite challenging and complicated. Indeed, quite a number of prior studies have revealed how the accuracy of lay people’s representations of inequality (and its correlates) are vulnerable to the influences of various contextual, methodological factors – such as whether participants were responding to measures that were framed in terms of income sectors/quintiles or other ways, etc. (Chambers et al., 2014; Eriksson & Simpson, 2012; Hauser & Norton, 2017; Norton & Ariely, 2011).

Then perhaps, compared to the aforementioned studies (Studies 1A, 2, 4, and 5), Study 3, wherein I analyzed participants’ direct numerical estimates of various incomes in the U.S., instead of relying on statement-based self-reports that have relatively more ambiguity (or variance) in their meanings, provides a more objective indicator of whether people are accurately aware of current income inequality in the U.S. In this study the data seemed to suggest that elevated socioeconomic background was associated with the increased accuracy in estimates of incomes in the current U.S. However, those estimates collected in Study 3 may also reflect the greater exposure to higher education and economic news among those of higher socioeconomic backgrounds, given their longer years of educational attainment and greater interest in economic information related to investment, industrial trends, etc.

Then, a future study, an adapted version of Study 3 (seeking to overcome the possible issues mentioned above), could first provide equal knowledge about the current incomes in the U.S., to all participants, and then use a subsequent memory task to examine any memory biases observed among those of higher vs. lower socioeconomic backgrounds. Should such memory biases emerge, they may reveal participants’ preexisting expectations or biased thoughts about current inequality, provide a relatively objective indicator for accuracy assessments, and at the same time be less affected by educational inequity, etc.

Similar memory tasks could also be applied by my other studies using visual stimuli (Studies 4 and 5), so that it would be possible to assess how accurately participants recall the wealth distribution depicted in the original visual stimuli (photographs of pedestrians or economic pie charts). Furthermore, using an eye-tracking device in these studies to examine what exactly the participants look at when they judge the severity of economic inequality among an array of pedestrians (for example, spending more time looking at the wealthy or the poor pedestrians) could perhaps allow me to tear apart and identify which specific components of the perceptual and judgmental processes are contributing to the observed differences in inequality judgments (are they not noticing the visual differences in attire, or are they noticing those stimuli enough but not using those information when making the final judgments).

And more broadly, beyond the accuracy issue, it would also be worthwhile to examine if the currently observed differences in judgments of wealth distributions, as shaped by differences in socioeconomic backgrounds, also extend to other manifestations of societal inequality. The recent global pandemic, COVID-19, has for sure damaged the lives and health conditions of people across the world in a severely unequal manner (Wildman, 2021). Then, similar to the findings of the current work, would individuals of higher (vs. lower) socioeconomic backgrounds also judge the inequalities in health care, across the U.S. or the globe, as less severe (Stephen, Markus, & Fryberg, 2012)? How about educational inequalities – in terms of the admission

processes (of elite universities or advanced graduate programs) and the academic performance of students coming from varying socioeconomic backgrounds (Brown, Jacoby-Senghor, & Raymundo, 2022; Stephen, Markus, & Phillips, 2014)? Addressing these questions would further advance, and add depth to, our central understanding from the current work – that the immediate judgmental (or perceptual) tendencies observed in those with the most resources, societal influence, and freedom, may be central to the reinforcement of social structural factors that harm others with less.

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Tables

Table 1. Socioeconomic Background Predicting Subjective Judgments of Wealth Inequality (Studies 1A, 1B, 2, 4, 5, & 6)

IV	Judgment of income inequality (Studies 1A, 1B, 2, 5, & 6: without stimuli presented)					
	Regional		National			
	Study 1A	Study 1B	Study 2	Study 5	Study 6	
SES	-.22**(-.20**/-.18*)	-.11*(-.11*)	-.06***	-.23**(-.17*/-.15†)	-.28***(-.21***)	
Income	-.29**(-.27**/-.26***)	-.14*(-.14*)		-.19**(-.17*/-.12)	-.11†(-.048)	
Political	-.25**	-.16**		-.34***(/-.12)	-.42***	
SDO				-.51***(-.40***/)		
ESJ				-.50***(-.37***/-.19*)	-.64***(-.54***)	
Gini	.27***		-.00			
IV	Judgment of wealth inequality (Study 4: array of pedestrians)					
	All	Inequality	High-income	Middle-income	Low-income	
SES	-.17***(-.15**)	-.46***(-.38***)	-.06(-.08)	-.06(-.05)	-.15(-.13)	
Income	-.10†(-.08)	-.25*(-.17†)	-.05(-.05)	-.04(-.05)	-.10(-.11)	
Political	-.11*	-.35***	.02	-.09	-.14	
IV	Judgment of income inequality (Study 5: economic pie charts)					
	All	Society 1	Society 2	Society 3	Society 4	Society5
SES	-.28***(-.24**/-.23**)	-.07(-.07/-.05)	-.22**(-.19*/-.17*)	-.27***(-.24**/-.22**)	-.25***(-.22**/-.21**)	-.20**(-.17*/-.16*)
Income	-.19**(-.18*/-.15†)	-.03(-.04/-.01)	-.20**(-.16*/-.13†)	-.18**(-.19*/-.16*)	-.15*(-.15*/-.13†)	-.12(-.12/-.09)
Political	-.22**(/-.09)	-.16*(/-.10)	-.23**(/-.07)	-.16*(/-.04)	-.14†(/-.08)	-.10(/-.02)
SDO	-.35***(-.27***/)	-.25**(-.16*/)	-.34***(-.26***/)	-.27***(-.22**/)	-.22**(-.16*/)	-.20**(-.17*/)
ESJ	-.33***(-.21**/-.08)	-.18*(-.11/-.03)	-.31***(-.20**/-.06)	-.30***(-.21**/-.10)	-.26***(-.17*/-.11)	-.17*(-.10/-.00)

Note. SES = subjective SES (MacArthur ladder); Income = annual household income (before tax); Political = political orientation (conservatism); SDO = social dominance orientation; ESJ = economic system justification. Study 1A = numbers on the left of the “/” inside parentheses are coefficients controlling for political orientation; numbers on the right of the “/” are controlling for the Gini index. Studies 1B, 4, & 6: numbers inside parentheses are controlling for political orientation; Study 5: numbers on the left of the “/” inside parentheses are controlling for political orientation; numbers on the right of the “/” are controlling for SDO. While all other numbers are standardized coefficients; the numbers in the Study 2 column are not (i.e., unstandardized mixed model coefficients, due to the nested nature of the data).

† p < .10, * p < .05, ** p < .01, *** p < .001.

Table 2. Socioeconomic Background Predicting Estimates of Incomes in the U.S. (Study 3)

IV	Estimate			
	Top 1%	Top 20%	Average	Bottom 20%
SES	-.18***(-.18***)	-.21***(-.20***)	.15**(.16***)	.14**(.13**)
Income	-.13**(-.16***)	-.08†(-.12*)	.15**(.17***)	.17***(.16***)
Political	-.10*	-.09*	.09†	.05
IV	(Estimate – Actual)			
	Top 1%	Top 20%	Average	Bottom 20%
SES	-.08	-.22**	-.20	-.09†
Income	-.08	-.18*	.00	.12*
Political	.04	-.03	.06	.15**
IV	Estimate – Actual			
	Top 1%	Top 20%	Average	Bottom 20%
SES	-.14**	-.14**	-.01	-.10*
Income	-.12	-.12	-.13**	.12*
Political	-.04	-.06	-.07	.13**

Note. SES = subjective SES (MacArthur ladder); Income = annual household income (before tax); Political = political orientation (conservatism). Following prior research examining how numerical incomes associate with social-psychological factors, these estimates of incomes and gaps (differences between estimates and actual, respective incomes) were log-transformed (Kahneman & Deaton, 2010; Killingsworth, 2021; Stevenson & Wolfers, 2008, 2013). Numbers inside parentheses are coefficients controlling for political orientation.

† p < .10, * p < .05, ** p < .01, *** p < .001.

Table 3. Summary of Mediation Analyses (Studies 5 & 6)

IV	Mediator	DV	a	b	c	c'	95% CI
Study 5							
Socioeconomic	ESJ	Judgment of income inequality in 5 hypothetical societies	.24** (.08)	-.29*** (.07)	-.29*** (.08)	-.22** (.08)	-.13, -.02
Socioeconomic	ESJ	Judgment of income inequality in the actual U.S.	.24** (.08)	-.50*** (.07)	-.29** (.09)	-.17* (.08)	-.22, -.04
Study 6							
Socioeconomic	ESJ	Judgment of income inequality	.25*** (.06)	-.78*** (.06)	-.28*** (.07)	-.09 ns (.06)	-.29, -.11
Socioeconomic	Judgment of income inequality	Hostile emotions	-.28*** (.07)	-.42*** (.09)	.39** (.11)	.27* (.11)	.05, .21
Socioeconomic	Judgment of income inequality	Empathic emotions	-.28*** (.07)	.40*** (.08)	-.21* (.11)	-.10 ns (.10)	-.21, -.04
Socioeconomic	Judgment of income inequality	Internal attribution	-.28*** (.07)	-.44*** (.07)	.39*** (.10)	.26** (.10)	.05, .22
Socioeconomic	Judgment of income inequality	External/Structural attribution	-.28*** (.07)	.51*** (.07)	-.32** (.10)	-.17 ns (.09)	-.25, -.07

Note. Socioeconomic = socioeconomic background composite (see Methods); ESJ = economic system justification. “a” path = unstandardized coefficient for link between IV and mediator; “b” path = unstandardized coefficient for link between mediator and DV when IV is also a predictor; “c” path = unstandardized coefficient for link between IV and DV; “c'” path = unstandardized coefficient for link between IV and DV when the mediator is also a predictor; 95% CI = 95% confidence intervals from bootstrapping procedures with 10,000 iterations. Numbers inside parentheses are standard errors.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4. Socioeconomic Background Predicting Emotional and Attributional Reactions to the Unhousedness Problem (Study 6)

IV	Moral Emotions		Attributions	
	Hostile	Empathic	Internal	External
SES	.21**	-.05	.22***	-.13*
Income	.15**	-.15*	.18**	-.19**
Political	-.32***	-.29***	-.37***	-.41***
ESJ	.36***	-.44***	.56***	-.61***
<i>M</i>	3.38	5.08	4.27	4.58
<i>SD</i>	1.72	1.60	1.52	1.46

Note. SES = subjective SES (MacArthur ladder); Income = annual household income (before tax); Political = political orientation (conservatism); ESJ = economic system justification. For further information, see Supplemental Materials (for more detailed tables presenting how measures of social class predicted each of the emotion items and attribution items).

* $p < .05$, ** $p < .01$, *** $p < .001$.

Supplemental Materials

Tables

Table 1. Descriptive Statistics in Raw USD and the Actual, Respective Incomes (Study 3)

	Top 1%	Top 20%	Average	Bottom 20%
Median	1,000,000	180,000	45,000	20,000
Mean	240,708,276,509	1,519,614	84,088	27,008
Actual	737,697	233,895	64,324	13,775

Note. Median = median (in raw USD) of participants' estimates of the respective incomes; Mean = mean (in raw USD) of participants' estimates; Actual = the actual, respective incomes (in 2018, which is when we conducted the survey).

Table 2. Socioeconomic Background Predicting (Each of the Row) Emotion Items (Study 6)

IV	Hostile emotions			Empathic emotions	
	Anger	Contempt	Disgust	Compassion	Sympathy
SES	.173**	.261***	.127*	-.003	-.085
Income	.085	.154**	.161**	-.130*	-.155**
Judgment	-.252***	-.342***	-.242***	.271***	.284***
ESJ	.269***	.352***	.330***	-.429***	-.423***
M	3.19	3.09	3.86	5.04	5.13
SD	2.02	1.88	2.03	1.66	1.67

Note. SES = subjective SES; Income = household income; Judgment = judgment of income inequality in the U.S.; ESJ = economic system justification.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3. Socioeconomic Background Predicting (Each of the Row) Attribution Items (Study 6)

IV	Internal attributions			External/Structural attributions					
	Homeless	People who do not...	Capitalism	Economic policy	Government	Social injustice	Social system	Top 1%	Wealth inequality
SES	.120*	.266***	-.077	-.152**	-.014	-.067	-.089	-.118*	-.126*
Income	.142*	.178**	-.089	-.134*	-.028	-.132*	-.122*	-.171**	-.195**
Judgment	-.306***	-.350***	.335***	.315***	.177**	.304***	.249***	.372***	.473***
ESJ	.471***	.520***	-.494***	-.463***	-.244***	-.541***	-.418***	-.538***	-.650***
Mean	4.56	3.98	4.14	4.69	4.67	4.46	4.99	4.10	4.84
SD	1.67	1.75	1.92	1.71	1.66	1.86	1.54	2.07	1.84

Note. SES = subjective SES; Income = household income; Judgment = judgment of income inequality in the U.S.; ESJ = economic system justification; People who do not... = people who do not work/try hard enough.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Figures

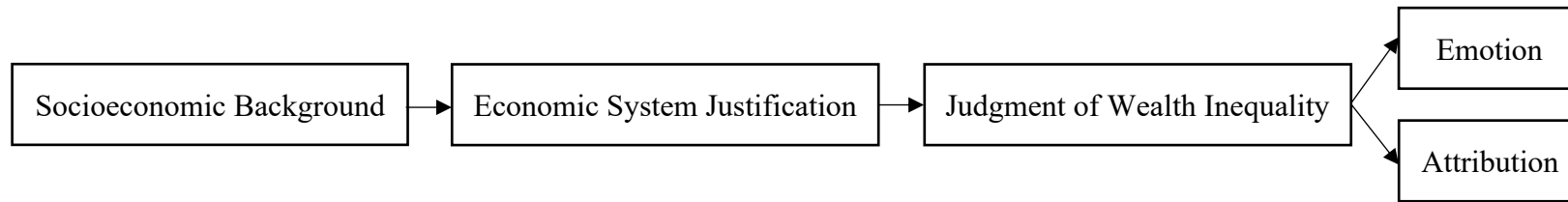


Figure 1. Theoretical model

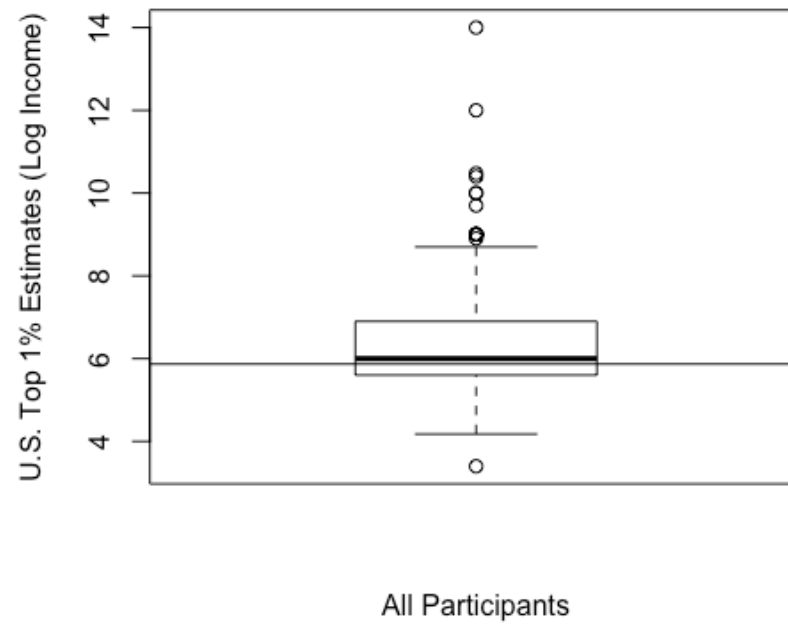


Figure 2A. Distribution of participants' U.S. top 1% income estimates (Study 3)

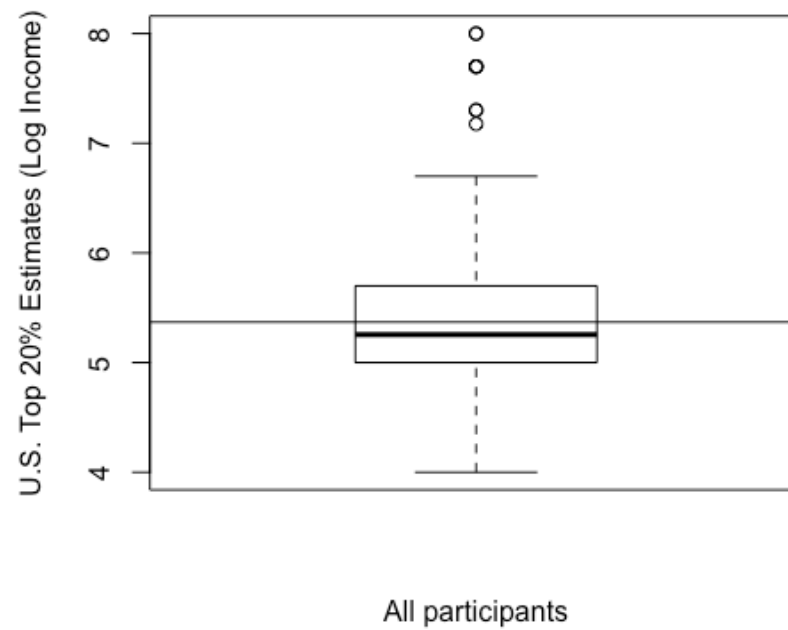


Figure 2B. Distribution of participants' U.S. top 20% income estimates (Study 3)

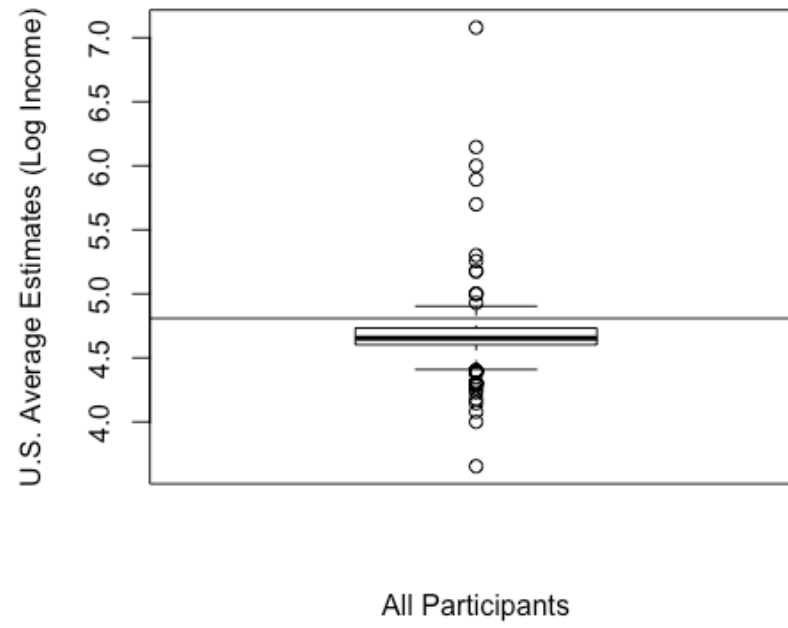


Figure 2C. Distribution of participants' U.S. average income estimates (Study 3)

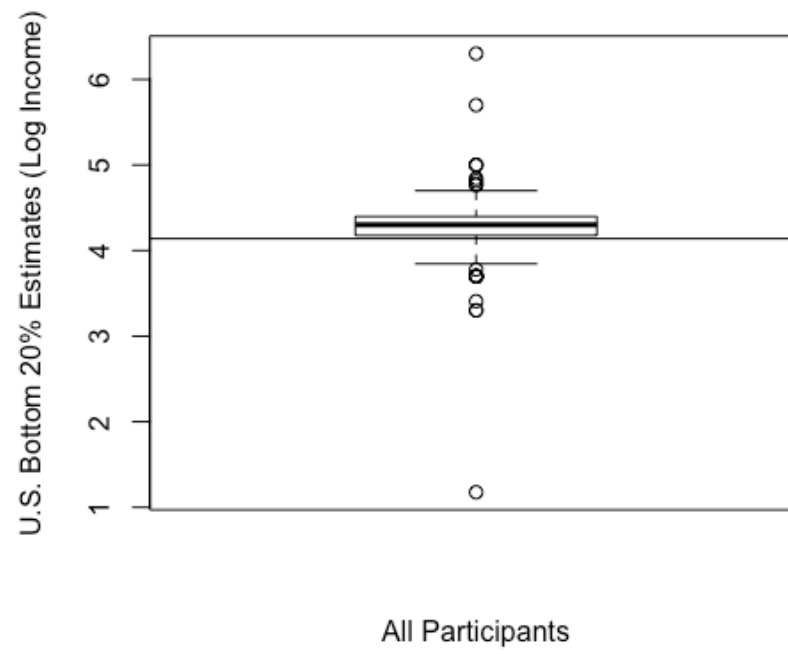
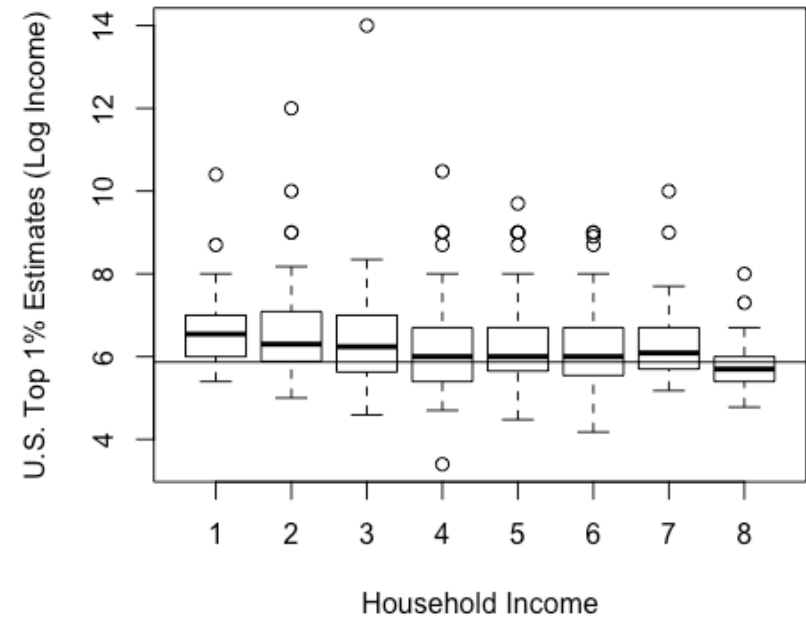
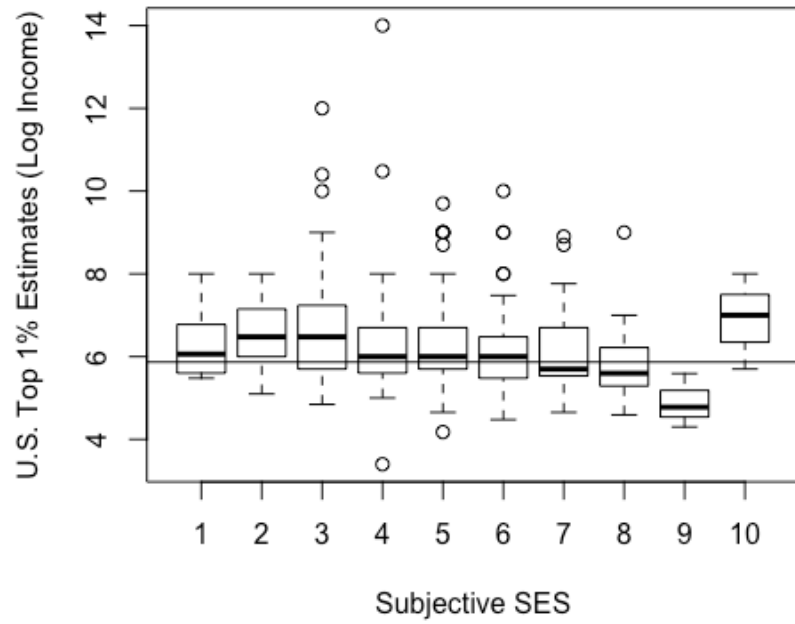
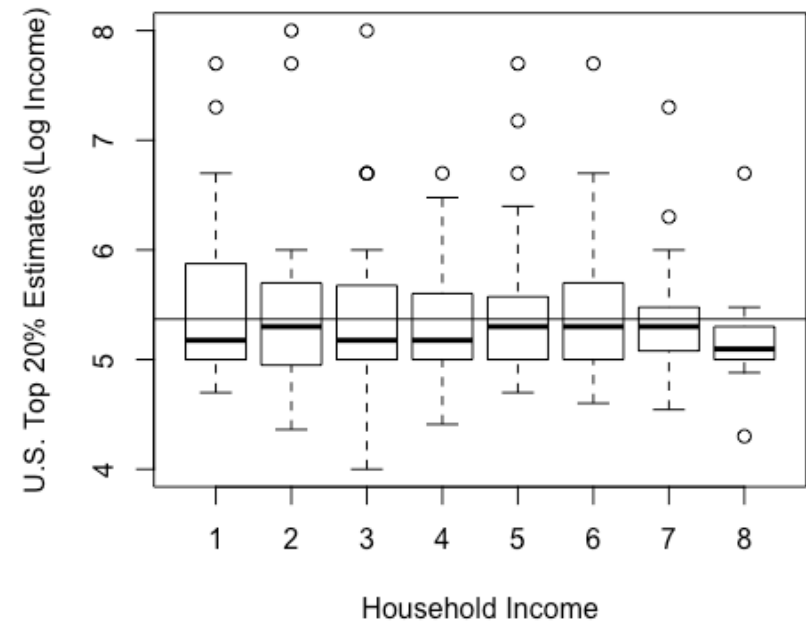
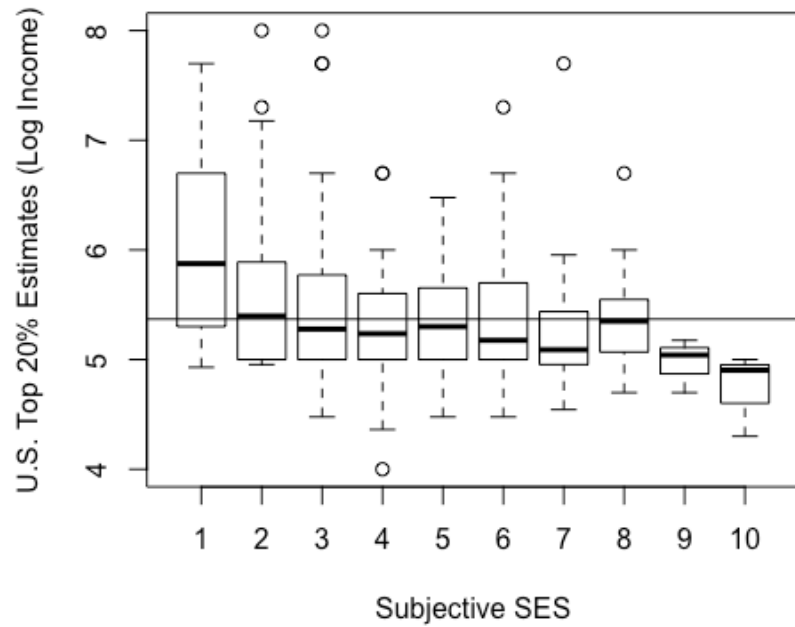


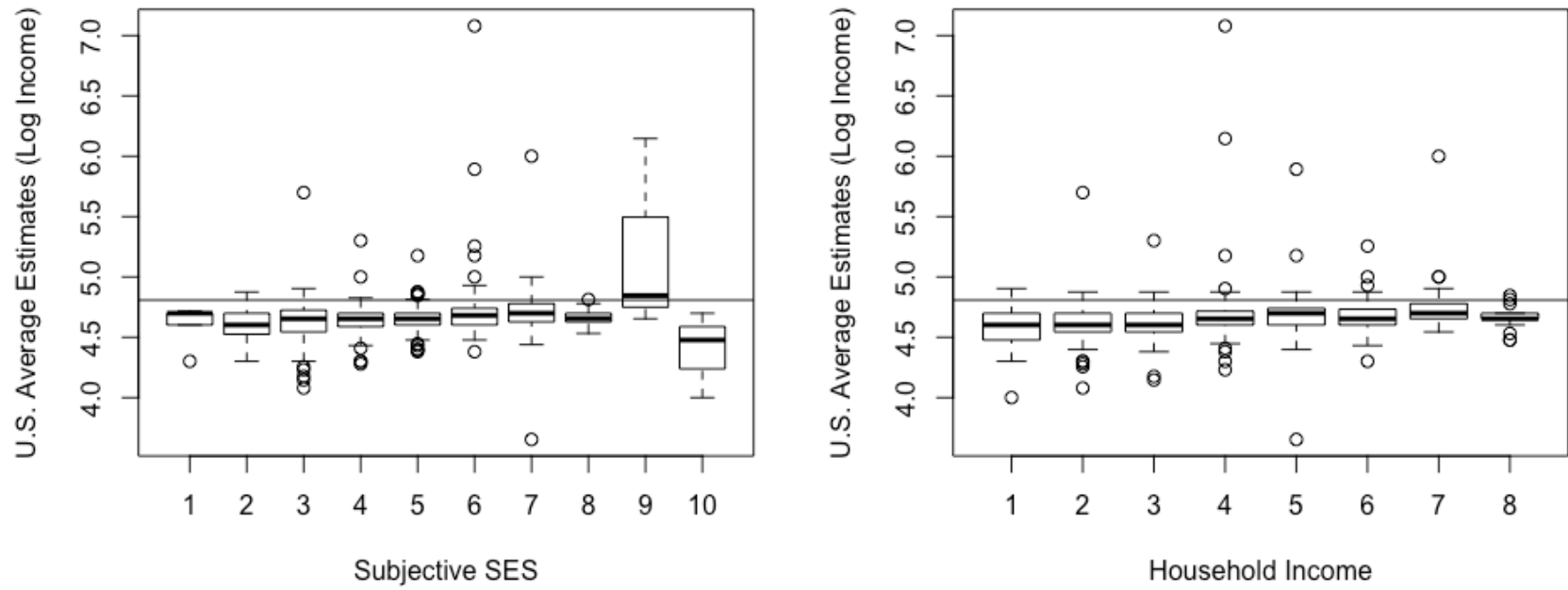
Figure 2D. Distribution of participants' U.S. bottom 20% income estimates (Study 3)



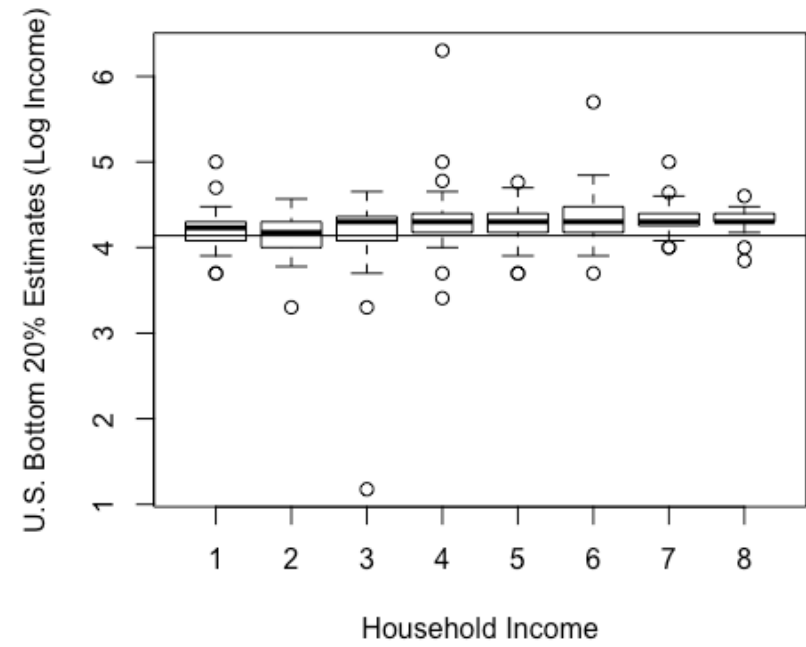
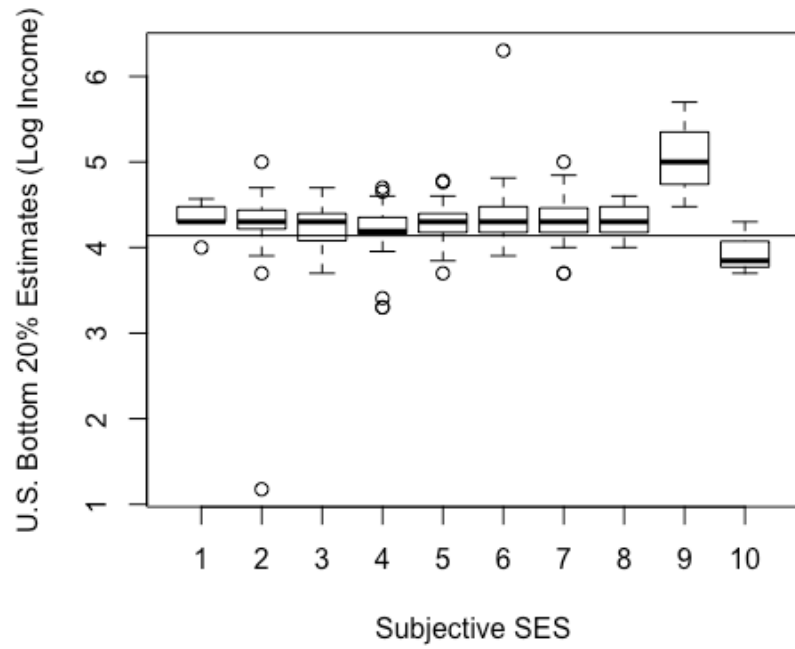
Figures 3A & 3B. Distributions of participants' U.S. top 1% income estimates; as functions of participants' own subjective SES (3A) and household income (3B), respectively (Study 3)



Figures 4A & 4B. Distributions of participants' U.S. top 20% income estimates; as functions of participants' own subjective SES (4A) and household income (4B), respectively (Study 3)



Figures 5A & 5B. Distributions of participants' U.S. average income estimates; as functions of participants' own subjective SES (5A) and household income (5B), respectively (Study 3)



Figures 6A & 6B. Distributions of participants' U.S. bottom 20% income estimates; as functions of participants' own subjective SES (6A) and household income (6B), respectively (Study 3)



Figure 7A. Array of 21 pedestrians shown in inequality condition (Study 4)



Figure 7B. Array of 21 pedestrians shown in high-income equality condition (Study 4)



Figure 7C. Array of 21 pedestrians shown in middle-income equality condition (Study 4)

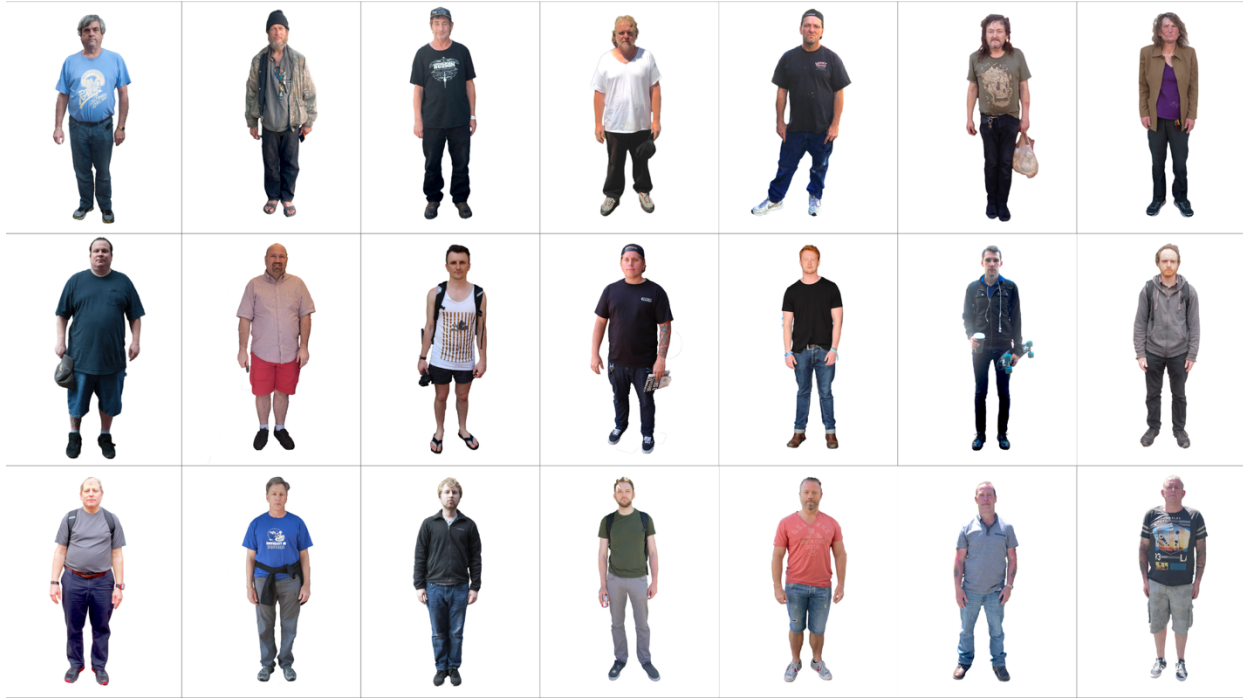


Figure 7D. Array of 21 pedestrians shown in low-income equality condition (Study 4)

● Top 20% ● 2nd 20% ● Middle 20% ● 4th 20% ● Bottom 20%



Figure 8A. Income distribution of Society 1 (most equal; Study 5)

● Top 20% ● 2nd 20% ● Middle 20% ● 4th 20% ● Bottom 20%

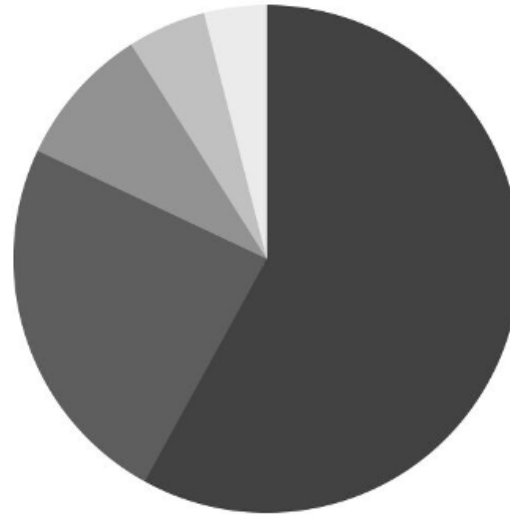


Figure 8B. Income distribution of Society 2 (Study 5)

● Top 20% ● 2nd 20% ● Middle 20% ● 4th 20% ● Bottom 20%

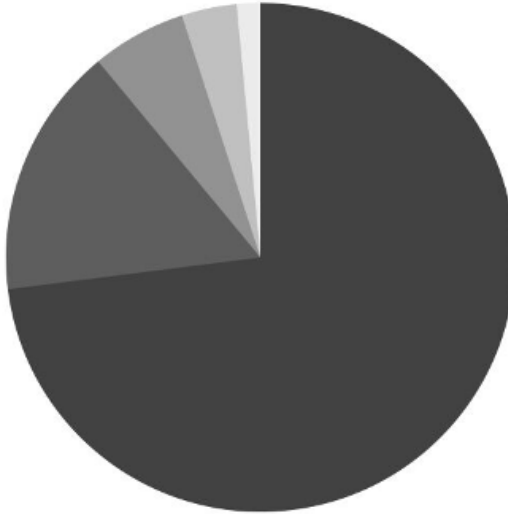


Figure 8C. Income distribution of Society 3 (Study 5)

● Top 20% ● 2nd 20% ● Middle 20% ● 4th 20% ● Bottom 20%

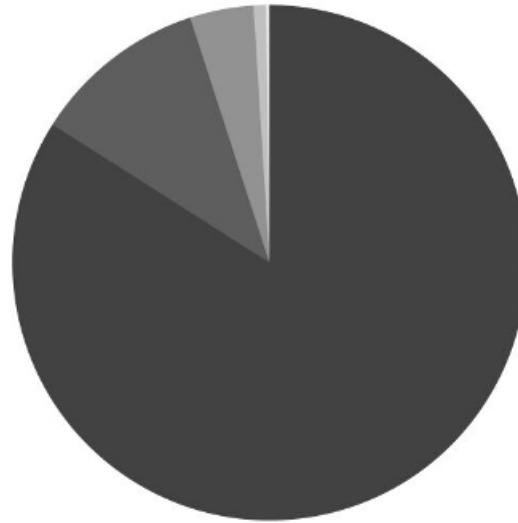


Figure 8D. Income distribution of Society 4 (Study 5)

● Top 20% ● 2nd 20% ● Middle 20% ● 4th 20% ● Bottom 20%

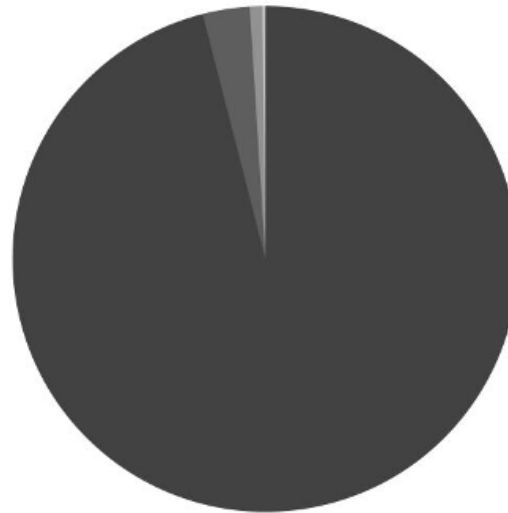


Figure 8E. Income distribution of Society 5 (most unequal; Study 5)