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Why Wealthier People Think People Are Wealthier, and Why It Matters: From Social Sampling to Attitudes to Redistribution

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Abstract

The present studies provide evidence that social-sampling processes lead wealthier people to oppose redistribution policies. In samples of American Internet users, wealthier participants reported higher levels of wealth in their social circles (Studies 1a and 1b). This was associated, in turn, with estimates of higher mean wealth in the wider U.S. population, greater perceived fairness of the economic status quo, and opposition to redistribution policies. Furthermore, results from a large-scale, nationally representative New Zealand survey revealed that low levels of neighborhood-level socioeconomic deprivation—an objective index of wealth within participants' social circles—mediated the relation between income and satisfaction with the economic status quo (Study 2). These findings held controlling for relevant variables, including political orientation and perceived self-interest. Social-structural inequalities appear to combine with social-sampling processes to shape the different political attitudes of wealthier and poorer people.

Keywords

social structure, socioeconomic status, judgment, open data, open materials

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Recent decades have witnessed marked increases in economic inequality across developed nations (Organization for Economic Cooperation and Development, 2011). Although people generally view equality as an important principle in the abstract (e.g., Deutsch, 1975), there is weaker consensus about adopting policies to reduce inequality (e.g., Hochschild, 1986). One source of disagreement is wealth itself: Wealthier people (compared with poorer people) tend to be more opposed to redistribution (Alesina & Giuliano, 2011). This is no surprise from a classical economic standpoint, because the material burden of redistribution policies falls on wealthier people (Meltzer & Richard, 1981), whereas redistribution is aligned with the self-interest of poorer people (Bartels, 2005; Feldman, 1982; Sears & Funk, 1991). Furthermore, wealthier people are more likely than poorer people to adopt ideological positions opposing redistribution (Pratto, Sidanius, Stallworth, & Malle, 1994). In the present article, we propose and test a complementary psychological mechanism that leads wealthier people to be less supportive of redistribution than poorer people, independent of biases stemming from self-interest and ideology.

Social Sampling: Extrapolating From Social Circles to the Population

Inferences about inequality, poverty, and affluence in society are constrained, as are all social judgments, by the cues the environment affords (e.g., Fiedler, 2000; Gibson, 1960). Lacking ready knowledge of how various (social and nonsocial) attributes are distributed, individuals draw on samples of the people they know, including family, friends, and colleagues (Galesic, Olsson, & Rieskamp, 2012; Nisbett & Kunda, 1985). Crucially, these social circles are not representative of the overall population, because social environments are spatially clustered. That

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is, individuals with similar incomes generally live close together and move in similar social circles (McPherson, Smith-Lovin, & Cook, 2001). Hence the social circles of wealthier people (compared with those of poorer people) include fewer low earners and more high earners (see Results sections).

Sampling from such unrepresentative subpopulations can lead to systematic differences in perceived population distributions. Relative to poorer people, wealthier people tend to estimate that higher incomes are more common and lower incomes less common in the wider population. As a result, as people's own wealth increases, they tend to perceive higher mean levels of wealth in society. Crucially, this *social sampling* process does not stem from a political or self-serving motivation but reflects the operations of "an unbiased mind acting in a particular social structure" (Galesic et al., 2012, p. 7).

Political-Psychological Sequelae of Social Sampling

Rich and poor people alike judge wealth levels in society against normative criteria, including efficiency and equality (Deutsch, 1975; Rawls, 1971). Contemporary theories of distributive justice construe equality as a state in which people have approximately the same level of wealth, irrespective of privilege, effort, or merit. Efficiency refers to the extent to which inputs such as labor and economic resources produce a greater overall level of wealth. Increments in efficiency imply an increase in income for at least one person at no penalty to another (i.e., Pareto optimality: see Arrow & Debreu, 1954; Okun, 1975). Thus, efficiency is reflected in a higher mean level of wealth for a given society and is often operationalized in this way (e.g., Mitchell, Tetlock, Mellers, & Ordonez, 1993).

All else being equal, people prefer these efficient distributions, in which the mean wealth in society is higher. Likewise, all else being equal, people prefer egalitarian distributions to those that are highly unequal. In other words, people prefer their economic pies both big (efficient) and cut into similarly sized slices (equal). These criteria are also applied interactively; people become less concerned with inequality as efficiency increases. These preferences are revealed by increased satisfaction and ratings of fairness (Mitchell et al., 1993; Scott, Matland, Michelbach, & Bornstein, 2001). It follows that, to the extent that social sampling leads wealthier people to conclude that society is wealthier, they will be more satisfied with the status quo and perceive it as fairer. In turn, this can be expected to affect attitudes on redistribution, because perceptions of fairness are an important proximal motivator of support for redistribution (Alesina & Angeletos, 2005; Fong, 2001; H. J. Smith & Tyler, 1996).

The Present Research

In the present research, we investigated how social sampling, in tandem with normative justice judgments, informs people's attitudes to wealth redistribution, independently of political orientation and perceptions of self-interest. Normative principles of justice, such as equality and efficiency, condition how people respond to information concerning the distribution of wealth across society. The information people receive about the outcomes of such distribution, however, is constrained by the structure of the social environment in which they are embedded. Consequently, richer and poorer citizens may have different attitudes about redistribution in part because they have a different experience of how rich their country is.

In Studies 1a and 1b, American participants indicated their own household income and estimated how incomes are distributed across both their immediate social circles and the wider population. Participants then indicated how fair and satisfactory they perceived society to be and whether they supported redistribution efforts. We hypothesized that models controlling for political orientation (Studies 1a and 1b) and perceived self-interest (Study 1b) would reveal that wealthier participants would report a higher level of mean wealth in their social circles, estimate a higher level of mean wealth in the United States, perceive the distribution of wealth in the United States as fairer, and in turn, be more likely to oppose redistribution policies. We hypothesized that these effects would arise via a sequential indirect path of mediation from participants' income to opposition to redistribution.

In Study 2, we examined data from a nationally representative survey in New Zealand. We used census measures of neighborhood-level economic deprivation as a proxy for wealth levels in participants' social circles. Because residents of more affluent areas are exposed to wealthier social samples, we predicted that they would show more satisfaction with New Zealand's economic status quo, independently of political attitudes and control factors. Similar conceptually to Studies 1a and 1b, Study 2 required that the relationship between household income and satisfaction be mediated by neighborhood deprivation.

Method

Study 1a

Participants. U.S. participants were recruited online (N = 305; 51.5% male; mean age = 37.40 years, SD = 12.04) via Amazon's Mechanical Turk (MTurk; Buhrmester, Kwang, & Gosling, 2011). Given our focus on the role of household income, it was desirable to minimize the number of individuals who were dependent on parental

income. Hence, we requested that only people who were at least 25 years old should complete the survey. Fifteen participants reported their ages to be less than 25. All analyses were conducted both with and without these participants' data and no substantive differences emerged, so reported analyses include all participants. In keeping with previous investigations of the representativeness of MTurk samples (Paolacci, Chandler, & Ipeirotis, 2010), the incomes of the present sample were somewhat lower than that of the U.S. population, but the distribution was similar (DeNavas-Walt, Proctor, & Smith, 2013). Thus, 10.3% of the sample reported household incomes placing them in the wealthiest 20% of the U.S. population, and 20.3%, 26.9%, 21.6%, and 20.3% reported household incomes in the second, third, fourth, and fifth wealthiest quintiles, respectively. Sample size was determined a priori on the basis of budgetary considerations. Data collection proceeded until the predetermined sample size was reached. Although we intended to have 300 participants, an additional 5 participants did not complete the entire survey and provided only partial data. For all studies reported herein, ethical approval was obtained from the institutional Ethics Committee, and the research was conducted in full accordance with the Declaration of Helsinki.

Materials and procedure. In accordance with the method used by Galesic et al. (2012), participants estimated complete income distributions as opposed to summary indicators (e.g., the mean). This indirect method allowed for estimation of both within-participant Gini indices and mean incomes for the reported social-circle and total-population distributions. It was also expected to minimize any potential biases (e.g., from ideology or self-enhancement motives) introduced by explicitly asking participants about inequality and average incomes.

Participants first estimated the distribution of annual household income for their social contacts by indicating the percentage of people who earned incomes within each of 11 intervals ($0–$15,000, $15,000–$30,000, etc., through $150,000+). Household income was defined as "the combined annual earnings of all household members from all sources, including wages, commissions, bonuses, Social Security and other retirement benefits, unemployment compensation, disability, interest, and dividends." Social contacts were defined as "adults you were in personal, face-to-face contact with at least twice this year, [such as] your friends, family, colleagues, and other acquaintances" (Galesic et al., 2012, p. 1519). Using an identical procedure, participants then estimated the distribution of annual household income across the entire U.S. population. The order of the distribution-estimation tasks was not counterbalanced.[1]

Two questions assessing perceived fairness of and satisfaction with the U.S. income distribution followed (e.g., "To what extent do you feel that household incomes are fairly – unfairly distributed across the U.S. population?"; 1 = *extremely fair*, 9 = *extremely unfair*; ratings were reverse-coded before analysis). The ratings for these items were highly correlated (r = .88), and their mean formed a composite measure of perceived fairness.

Attitudes on redistribution were assessed using four items (α = .81) adapted from a Gallup Organization (1998) poll (e.g., "The government should redistribute wealth through heavy taxes on the rich"; 1 = *strongly disagree*, 6 = *strongly agree*). In a final section, participants provided demographic information, including their annual household income, and rated their political orientation (1 = *extremely liberal*, 9 = *extremely conservative*).

Study 1b

Participants. U.S. participants were recruited online (N = 321, 48.4% male; mean age = 35.06 years, SD = 10.92) via MTurk. As in Study 1a, we asked that only people who were at least 25 years old should complete the survey, but 24 participants reported being younger than this. Reported analyses include these participants; excluding them did not affect results. In Study 1b, 8.9% of the sample reported household incomes placing them in the wealthiest 20% of the U.S. population, and 20.5%, 27.5%, 21.5%, and 20.9% reported household incomes in the second, third, fourth, and fifth wealthiest quintiles, respectively. Sample size was determined a priori on the basis of budgetary considerations. Data collection proceeded until the predetermined sample size was reached. Although we intended to recruit 300 participants, the sample was larger because we included participants until we had 300 who had completed the survey and provided complete data.

Materials and procedure. In Study 1b, we used a novel response method in which participants were asked to estimate mean incomes for each quintile (i.e., each 20%) for their social circles and for the U.S. population. Our method in this study required participants to use the same raw data (i.e., available knowledge of incomes) as in Study 1a, and participants were equally subject to the environmental constraints proposed in the social-sampling model. The method in this study was more time-efficient, and the use of different response formats in the two studies builds confidence in the robustness of the findings. Participants also provided explicit estimates of social-circle and population mean incomes and rated levels of inequality.

Participants first estimated the mean annual household income within each income quintile (i.e., from

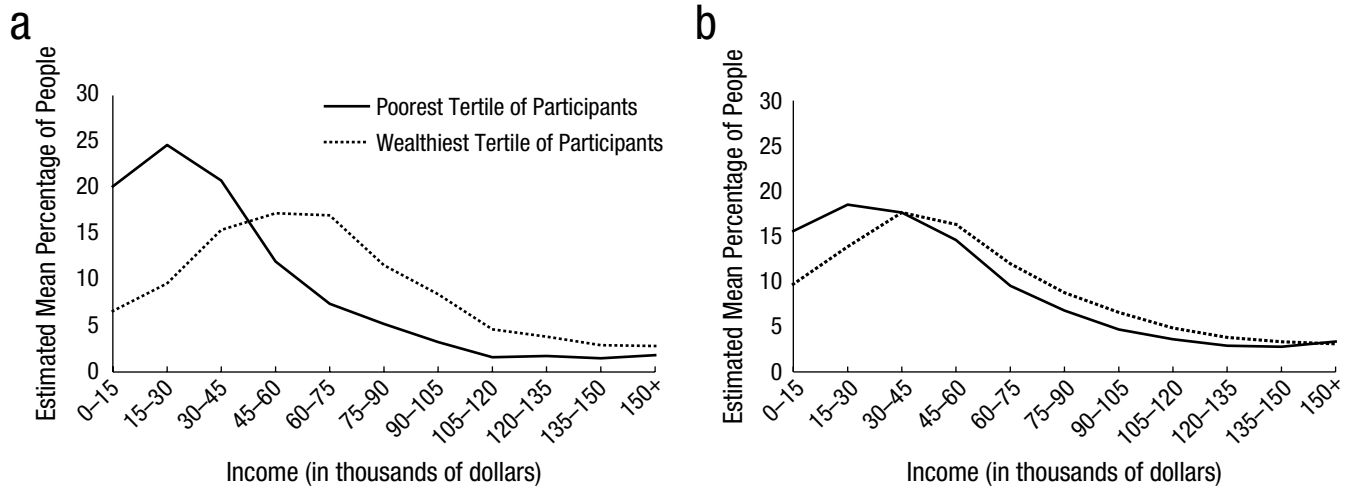

Fig. 1. Results for Study 1a. The graphs show average estimations of the percentage of people in (a) the participants' social circles and in (b) the U.S. population whose annual incomes fall into each income interval. Results are shown separately for the poorest and wealthiest tertiles of participants. Data for the middle tertile are not displayed for clarity.

lowest to highest income) for their social contacts and then for the U.S. population as a whole. Participants used continuous sliders that could be dragged horizontally on [screen] screen using a computer mouse (ranging from \$1,000 to \$250,000 in \$100 units). Social contacts and household income were defined as in Study 1a. In addition, participants provided explicit estimates of the mean income for their social circles and for the entire U.S. population, on a sliding scale (ranging from \$1,000 to \$100,000 in \$100 units). Participants provided ratings of inequality for both their social circles and for the entire U.S. population (two items for each, e.g., "To what extent are household incomes equally – unequally distributed across your social contacts [the population of the United States]?"; 1 = *very equally*, 6 = *very unequally*; α = .65 and α = .76, respectively).

Participants then responded to the same fairness and satisfaction items used in Study 1a (r = .81; 1 = *extremely fair/satisfied*, 6 = *extremely unfair/dissatisfied*; ratings were reverse-coded before analysis). Attitudes on redistribution were assessed with the four-item scale used in Study 1a (α = .81; 1 = *strongly disagree*, 6 = *strongly agree*). Three items (α = .82) assessed perceived self-interest in redistribution (e.g., "To what extent do you feel that redistribution of wealth through tax and welfare is in agreement with your own financial interests?"; 1 = *strongly disagree*, 6 = *strongly agree*). An additional three items (α = .83) assessed political orientation (e.g., "How would you describe your political attitudes?"; 1 = *very liberal/very left-wing/strong Democrat*, 7 = *very conservative/very right-wing/strong Republican*). In a final section, participants provided demographic information, including their annual household income.

Results

Figures 1a and 1b display the estimated population and social-circle distributions of household income, respectively, for high- and low-income participants (i.e., those in the tertiles with the highest and lowest earnings) in Study 1a. Figures 2a and 2b display the estimated population and social-circle distributions of household income, respectively, for high and low-income participants (i.e., those in the tertiles with the highest and lowest earnings) in Study 1b. Correlations, means, and standard deviations for the Study 1a and 1b variables are presented in Tables 1 and 2. Because of the scaling of the measures, all analyses across both studies were conducted on standardized data.

In Study 1a, within-participant estimates of mean incomes for their social circles and the U.S. population, along with Gini indices, were made with the assumption of complete homogeneity of incomes within each income interval. Following the advice of Ravallion (1992), we set incomes in the lowest interval at 80% of the upper bound of the interval (\$12,000) and incomes in the highest interval at 30% above the lower bound (\$195,000). Incomes within all intervening intervals were assumed to be equivalent to the interval midpoint (e.g., all incomes in the \$15,000–\$30,000 interval were set at \$22,500). Weighted mean incomes were derived by calculating the total income at each interval, summing these totals, and dividing across the population (i.e., by 100). The cumulative percentages of total income at each X% of the population were derived according to the same assumptions, which allowed for approximation of the Gini index with trapezoids. The resulting approximation for the Gini index is given by

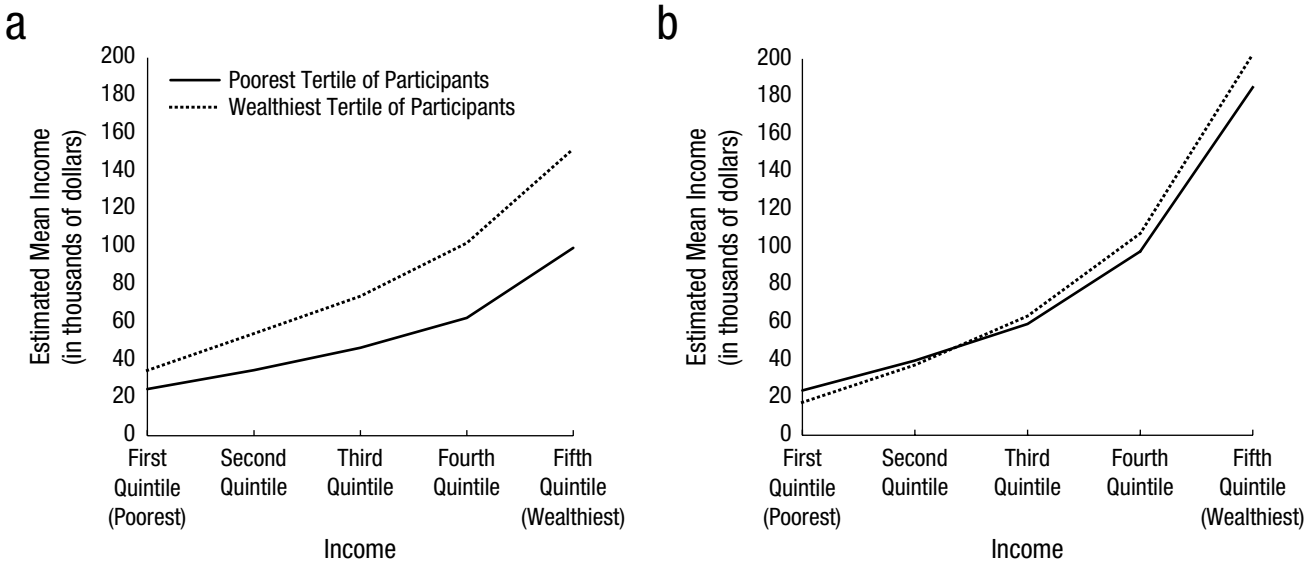

Fig. 2. Results for Study 1b. The graphs show participants' estimations of average incomes for each quintile of (a) their social circles and (b) the U.S. population. Results are shown separately for the poorest and wealthiest tertiles of participants. Data for the middle tertile are not displayed for clarity.

$$G_1 = 1 - \sum_{k=1}^{n} (X_k - X_{k-1})(Y_k + Y_{k-1}),$$

where X_k is the cumulative proportion of the population and Y_k is the cumulative proportion of income indexed in nondecreasing order.

In Study 1b, mean social-circle and U.S. population incomes were calculated directly by averaging across participants' estimates of mean income for each quintile of their social circles and the U.S. population. Gini indices were calculated using the estimated mean incomes for the quintiles and so capture the inequality between the mean incomes of the poorest through wealthiest quintiles (as opposed to inequality approximated continuously across each *X*% of the population, as in Study 1a). These methods were chosen for computational simplicity and enabled simultaneous computation of mean incomes and Gini indices across all participants using a customized spreadsheet.

From social-sampling effects to policy preferences

We first examined whether participants' income exerted an indirect effect on redistribution preferences sequentially via social-circle mean income, population mean income, and fairness and satisfaction. We used the PROCESS macro (Model 6; Hayes, 2013) for IBM SPSS Statistics to run bootstrapped mediation analyses (10,000 resamples) examining the indirect effect of income on redistribution preferences via these mediators, separately

Table 1. Means and Intercorrelations for Variables from Study 1a

Variable	Mean	1	2	3	4	5	6	7
1. Household income	$54,732 ($47,238)	—						
2. Social-circle mean income	$54,294 ($25,295)	.48***	—					
3. Population mean income	$58,604 ($17,230)	.19***	.34***	—				
4. Social-circle inequality (Gini index)	26.35 (9.97)	−.12*	−.11	−.09	—			
5. Population inequality (Gini index)	35.51 (7.48)	−.07	−.15*	−.05	.21***	—		
6. Fairness and satisfaction	3.54 (2.02)	.18**	.24***	.17**	−.08	−.16**	—	
7. Support for redistribution	3.91 (1.15)	−.21***	−.25***	−.18**	.06	.15**	−.70***	—
8. Political preferences	4.47 (2.23)	.15**	.15*	−.01	−.05	−.14*	.42***	−.57***

Note: Values in parentheses are standard deviations. Higher values indicate greater inequality, greater perceived fairness and satisfaction, greater support for redistribution, and greater conservatism.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 2. Means and Intercorrelations for Variables from Study 1b

Variable	Mean	1	2a	2b	3a	3b	4a	4b	5a	5b	6	7	8
1. Household income	$55,500 ($55,999)	—											
2a. Derived social-circle mean income	$65,980 ($36,419)	.42***	—										
2b. Estimated social-circle mean income	$48,184 ($22,829)	.60***	—	—									
3a. Derived population mean income	$83,992 ($28,214)	.11	.51***	—	—								
3b. Estimated population mean income	$44,054 ($13,142)	.18**	—	.32***	—	—							
4a. Derived social-circle inequality (Gini index)	30.31 (11.87)	−.06	.01	—	−.07	—	—						
4b. Estimated social-circle inequality	4.06 (1.15)	−.01	—	−.05	—	.09	—	—					
5a. Derived population inequality (Gini index)	41.64 (11.09)	−.02	−.19***	—	−.14**	—	.34***	—	—				
5b. Estimated population inequality	5.34 (0.91)	.15*	—	.06	—	−.05	—	.20***	—	—			
6. Fairness and satisfaction	2.28 (1.31)	.14*	.14*	.18**	.16**	.11	−.23***	−.19**	−.22***	−.41***	—		
7. Support for redistribution	4.09 (1.23)	−.21***	−.21***	−.19**	−.09	−.03	.14*	.09	.18**	.28***	−.71***	—	
8. Political preferences	3.53 (1.49)	.13*	.12*	.05	.07	.03	−.06	−.08	−.14*	−.18**	.49***	−.61***	—
9. Self-interest in redistribution	3.53 (1.19)	−.38***	−.22***	−.23***	−.02	−.02	.17**	.06	.15*	.18**	−.46***	.58***	−.42***

Note: Values in parentheses are standard deviations. Higher values indicate greater estimated inequality, greater perceived fairness and satisfaction, greater support for redistribution, greater conservatism, and greater self-interest in redistribution.
*$p < .05$. **$p < .01$. ***$p < .001$.

for Study 1a and 1b participants. Designed to specifically test hypotheses of serial mediation in which the sequence of mediators represents an assumed causal chain, this procedure estimates path coefficients and 95% bias-corrected accelerated confidence intervals (BCa 95% CIs) for the total and all possible specific indirect effects in the chain. Political orientation was included as a covariate in analyses for data from both Study 1a and 1b. Perceived self-interest in redistribution was an additional covariate in Study 1b. In both studies, we also controlled for population Gini because this was negatively related to estimated mean incomes. We repeated the analyses without the covariates included and obtained similar results. In Study 1a, 8 participants were excluded. In Study 1b, 26 participants were excluded from analyses of derived means, and 37 participants were excluded from analyses of directly estimated means. In both studies, the exclusions were principally due to missing data for household income.[2] Table S1 in the Supplemental Material available online presents a complete breakdown of all specific indirect effects found in the analyses reported here.

As expected, in Study 1a, the effect of participant income on redistribution preferences was sequentially mediated through social-circle mean income, population mean income, and then fairness and satisfaction in models controlling for political orientation and population Gini, indirect effect = −0.01, BCa 95% CI = [−0.02, −0.003]. No other indirect effects attained significance. The direct effect of household income was not significant after we accounted for the proposed mediators and covariates, direct effect = −0.03, BCa 95% CI = [−0.12, −0.05].

In Study 1b, separate mediation analyses were conducted for mean incomes and inequality indices derived from estimated distributions and for participants' direct estimates. As predicted, for derived mean incomes, the effect of participant income on redistribution preferences was sequentially mediated through social-circle mean income, population mean income, and fairness and satisfaction in models controlling for political orientation, population Gini and perceived self-interest in redistribution, indirect effect = −0.02, BCa 95% CI = [−0.03, −0.01]. An indirect path from household income to redistribution preferences via mean social-circle income was also significant, indirect effect = −0.04, BCa 95% CI = [−0.08, −0.002]. The direct effect of household income was not significant after we accounted for the proposed mediators and covariates, direct effect = 0.04, BCa 95% CI = [−0.05, 0.12].

Repeating this analysis on the Study 1b direct estimates of mean social-circle and population incomes produced similar results; the effect of participant income on redistribution preferences was sequentially mediated through social-circle mean income, through population mean income, and through evaluations in models controlling for political orientation and perceived self-interest in redistribution, indirect effect = −0.01, BCa 95% CI = [−0.02, −0.001]. The direct effect of household income was not significant after we accounted for the proposed mediators and covariates, direct effect = 0.02, BCa 95% CI = [−0.07, 0.11].

As shown in Figures 3a (Study 1a), 3b (Study 1b derived measures), and 3c (Study 1b direct estimates), participants with higher incomes estimated more efficient social-circle distributions and, consequently, more efficient population distributions. In turn, increased efficiency was related to greater perceived fairness and lower support for redistribution.

In Study 1b, we also sought to examine the accuracy of both the poorest participants (i.e., the tertile with the lowest income) and the wealthiest participants (i.e., the tertile with the highest income) by comparing their estimates with external data. The derived estimates of mean incomes of both the poorest participants (M = \$81,215, SD = \$31,228) and wealthiest participants (M = \$86,249, SD = \$23,635) were significantly higher than the mean U.S. household income of \$71,274 for 2012 (DeNavas-Walt et al., 2013, p. 33), $t(102) = 3.23$, $p = .002$, and $t(104) = 6.49$, $p < .001$, for poorest and wealthiest participants, respectively. Derived estimates did not differ between poorest and wealthiest participants, $t(206) = 1.31$, $p = .19$. In contrast, direct estimates of mean incomes of both the poorest participants (M = \$39,859, SD = \$14,725) and the wealthiest participants (M = \$47,643, SD = \$11,536) were significantly lower than the mean U.S. household income of \$71,274 for the poorest and wealthiest participants, $t(100) = 21.44$, $p < .001$, and $t(102) = 20.79$, $p < .001$, respectively. The poorest participants' direct estimates were hence less accurate insofar as they were significantly lower than those of the wealthiest participants, $t(202) = 4.21$, $p < .001$.

Testing alternative mechanisms

We next sought to examine the potential mediating role of attitudinal variables in the link between household income and redistribution preferences. The importance of ideology and self-interest was underscored in Study 1a; the effect of household income on redistribution preferences was mediated through political orientation in models controlling for estimated population Gini and mean incomes, indirect effect = −0.09, BCa 95% CI = [−0.17, −0.03]; wealthier participants were more conservative and were consequently less supportive of redistribution. In Study 1b, the effect of household income on redistribution preferences was mediated through self-interest, indirect effect = −0.15, BCa 95% CI = [−0.22, −0.10], and political attitudes, indirect effect = −0.06, BCa 95% CI = [−0.12, −0.007], in models controlling for derived population Gini and mean incomes. Thus, in Study 1b, wealthier participants reported less self-interest in redistribution and greater

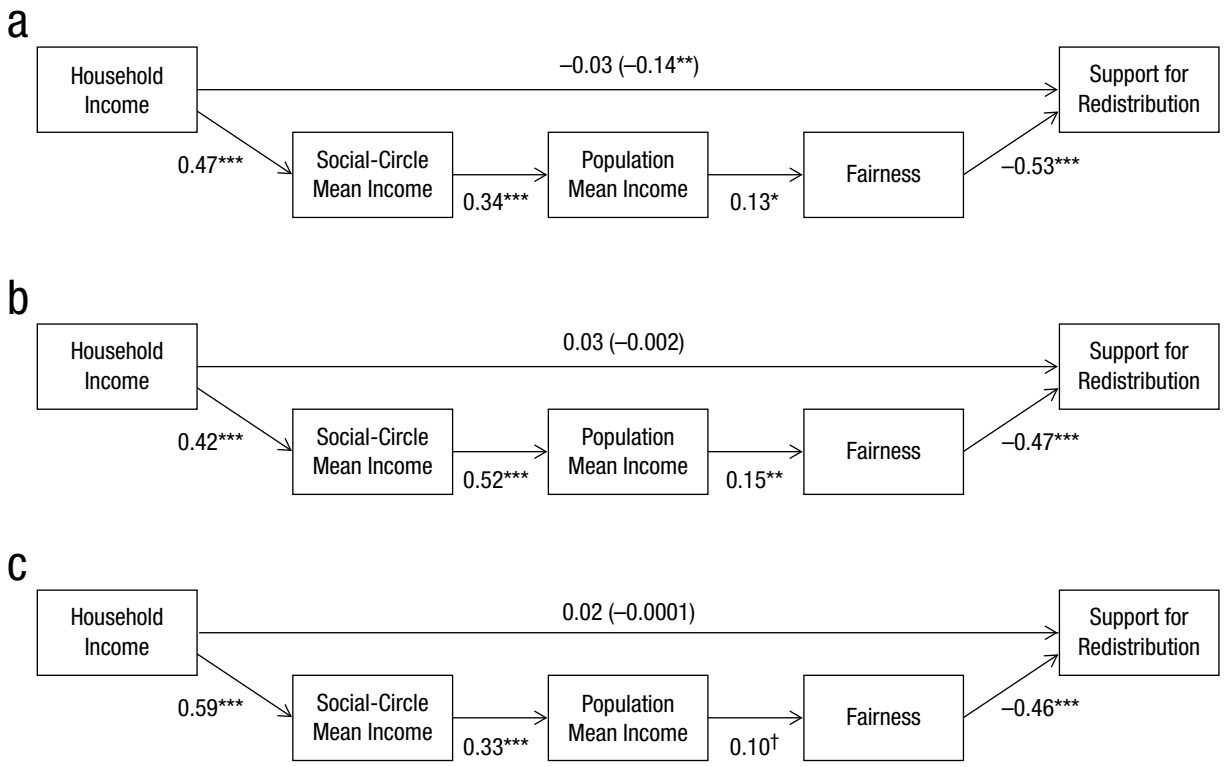

Fig. 3. Mediation models showing the effect of household income on support for redistribution, as mediated by estimated social-circle mean income, estimated population mean income, and perceived fairness of income distributions. The diagram in (a) shows the model for Study 1a, in which indices of mean income were derived from estimated distributions. Covariates included were political ideology and Gini index derived from estimated income distribution. The diagram in (b) shows the model for Study 1b in which indices of mean income were derived from estimated distributions. Covariates included were political ideology, perceived self-interest in redistribution, and Gini index derived from estimated income distribution. The diagram in (c) shows the second model for Study 1b, using participants' explicit estimates of mean incomes in their social circles and the U.S. population. Covariates included were political ideology and perceived self-interest in redistribution. For all models, the total effect is given in parentheses. Symbols indicate the significance of path coefficients ($^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$).

conservatism; consequently, they were less supportive of redistribution measures.

Study 2

In Studies 1a and 1b, participants' subjective estimates of the income distribution for their social contacts were assumed to reflect the natural sample of incomes to which they were exposed in their day-to-day lives. This assumption is shared by other studies of social-sampling effects, which have also relied on subjective estimates (e.g., Galesic et al., 2012). However, variance in these subjective estimates may be attributable to psychological factors as well as objective differences in social circles. For example, participants may use their own incomes as anchors to estimate social-circle incomes (Krüger, 1999).

The present study examines whether the previous findings could be conceptually replicated using an objective indicator of social-circle incomes. Specifically, using data from the New Zealand Attitudes and Values Study (Sibley, 2009), we examined whether household income is indirectly related to perceived economic/social fairness via neighborhood-level economic deprivation, independent of political ideology and other control variables.

Method

Participants. Participants were 4,634 registered voters in New Zealand who had complete data for the measures analyzed here (2,681 women, 1,953 men). Participants had a mean age of 47.25 years (SD = 14.66), 79.2% were born in New Zealand, and 79.2% were employed. Mean household income was $85,552 ($SD$ = $71,154; New Zealand dollars). Nonreported household income constituted the majority of the missing data.

Sampling procedure. The full data for NZAVS Wave 1 contained responses from 6,518 participants sampled from the 2009 New Zealand electoral rolls. The electoral roll is publicly available for scientific research and in

2009 contained 2,986,546 registered voters. This number represented all citizens over 18 years of age who were eligible to vote regardless of whether they chose to vote (except for people whose contact details had been removed because of specific case-by-case concerns about privacy). The sample frame was spilt into three parts. Sample Frame 1 constituted a random sample of 25,000 people from the electoral roll (4,060 respondents). Sample Frame 2 constituted a second random sample of a further 10,000 people from the electoral roll (1,609 respondents). Sample Frame 3 constituted a booster sample of 5,500 people randomly selected from meshblock area units of the country in which there was high proportion of people of Maori, Pacific Nations, or Asian descent (671 respondents). Statistics New Zealand (2014) defines a meshblock as

> the smallest geographic unit for which statistical data is collected and processed by Statistics New Zealand. A meshblock is a defined geographic area, varying in size from part of a city block to large areas of rural land. Each meshblock abuts against another to form a network covering all of New Zealand including coasts and inlets, and extending out to the two hundred mile economic zone. Meshblocks are added together to 'build up' larger geographic areas such as area units and urban areas. They are also the principal unit used to draw-up and define electoral district and local authority boundaries.

Meshblocks were selected using ethnic group proportions taken from 2006 national census data. A further 178 people responded but did not provide contact details and so could not be matched to a sample frame.

In sum, postal questionnaires were sent to 40,500 registered voters, or roughly 1.36% of all registered voters in New Zealand. The overall response rate (adjusting for the address accuracy of the electoral roll and including anonymous responses) was 16.6%.

Measures

Fairness. The individual-level fairness measure was composed of four items ($\alpha = .65$) available in the NZAVS that were most conceptually similar to the fairness and satisfaction items used in Studies 1a and 1b. Two items were from the General System Justification scale (Kay & Jost, 2003): "In general, the New Zealand political system operates as it should" and "In general, I find New Zealand society to be fair" (1 = *strongly disagree*, 7 = *strongly agree*). Two additional items were included from the National Wellbeing Index (Tiliouine, Cummins, & Davern, 2006). Respondents rated their satisfaction with "The economic situation in New Zealand" and "The social conditions in New Zealand" (1 = *completely dissatisfied*, 10 = *completely satisfied*). Responses were standardized before averaging to account for differences in scaling.

Meshblock deprivation. The New Zealand Scale of Deprivation 2006 (NZDep2006; Salmond, Crampton, & Atkinson, 2007) is a neighborhood-level measure of relative socioeconomic deprivation based on national census data, combining weighted information on the proportion of people in a given meshblock (i.e., geographical unit) experiencing various dimensions of deprivation (e.g., the proportion of people receiving a means-tested benefit, not living in their own home, ages 16–24 and unemployed, with no access to a car; or the proportion of equivalized households with income below a certain threshold). The scale ranges from 1 to 10, dividing New Zealand into deciles according to the distribution of the principal component scores derived from these dimensions. A score of 10 indicates that a given area is in the most deprived 10% of areas in New Zealand, and a score of 1 indicates that a given area is in the least deprived 10% of areas in New Zealand, according to the NZDep2006 scores. The NZDep2006 scale was used in the present analysis as an objective proxy for participants' social-circle estimates; we assumed that individuals living in more deprived areas would tend to have relatively poorer social contacts and that those living in less deprived areas would tend to have relatively wealthier social contacts.

Insofar as geographic mobility and communication technologies allow for social ties with people from other regions, it should be acknowledged that the NZDep2006 may underestimate the variance in income levels to which people are exposed via their social contacts and is therefore by no means a perfect alternative to estimated social-circle distributions. All else being equal, use of the NZDep2006 may result in underestimation of social-sampling effects. Nevertheless, prior research and theory emphasizes spatial proximity as a key defining feature of social networks (McPherson et al., 2001; Reagans, 2011; Wellman, 1996). Our sample contained 4,226 unique meshblock area units, with 1.09 participants per unit ($SD = 0.33$, range = 1–5). The geographic size of these meshblock units differs depending on population density, but each unit tends to cover a region containing a median of roughly 90 residents ($M = 103$, $SD = 72$, range = 3–1,431). In 2013, at the time of the most recent census, there were a total of 46,637 meshblocks. Mean area-unit deprivation across meshblock units included in the sample was 4.91 ($SD = 2.82$).

Covariates. Political orientation was measured in the NZAVS on a 7-point scale (1 = *extremely conservative*, 7 = *extremely liberal*) and was included in the model. Other control variables were age, gender (0 = male, 1 = female),

whether the respondent was born in New Zealand (0 = no, 1 = yes), and whether the respondent was gainfully employed (0 = no, 1 = yes).

Results

As anticipated, the relationship between household income and fairness was mediated by meshblock deprivation score, after we accounted for the control variables, indirect effect = 0.013, BCa 95% CI = [0.008, 0.019]; wealthier respondents lived in less deprived neighborhoods and consequently perceived New Zealand to be a more fair society. The direct effect of household income on fairness remained significant, direct effect = 0.065, BCa 95% CI = [0.044, 0.086].

To ensure that these results did not depend on a particular operationalization of neighborhood wealth or economic attitudes, we tested a number of conceptually similar models, substituting different measures of each construct. For example, we found that significant indirect paths ran from household income through neighborhood median income, the proportion of poor relative to wealthy residents, and the proportion of residents receiving state benefits. These indirect paths were significant whether we took fairness, General System Justification, the National Wellbeing Index, or votes for the National party (the incumbent, economically conservative party) as outcome measures. These analyses are reported in Table S2 in the Supplemental Material.

General Discussion

The present findings confirm that self-interest (Study 1b) and ideological motivations (Studies 1a and 1b) are important contributors to the differing economic attitudes of wealthier and poorer people (Hasenfeld & Rafferty, 1989; Meltzer & Richard, 1981). The present findings also uncover another mechanism. Consistent with theory and research on social-sampling effects, these findings reveal that wealthier (relative to poorer) Americans reported moving in wealthier social circles and extrapolated from them when estimating wealth levels across America as a whole (Studies 1a and 1b). In turn, these estimates were associated with the perceived fairness of wealth distribution in America and with opposition to redistribution, a finding that is consistent with theory on normative-justice judgments.

These results suggest that the rich and poor do not simply have different views about how wealth should be distributed across society; rather, they subjectively experience living in societies that have subtle—but important—differences. Thus, in the relatively affluent America inhabited by wealthier Americans, there is less need to distribute wealth more equally (Mitchell et al., 1993; Scott et al., 2001). The results of Study 2, featuring data from New Zealand, show that this phenomenon is not unique to the United States. It also demonstrates that the relationship between people's own income and their attitudes toward redistribution is mediated by objective metrics of wealth levels in their social circles. This provides new validation of the social-sampling perspective, which assumes that cognition is determined by objective ecological conditions but has been tested using participants' subjective perceptions of those conditions rather than objective measures (Galesic et al., 2012).

We suggest that the processes observed here are antagonistic to political efforts to reduce inequality. As inequality grows, wealth is becoming spatially concentrated (Massey, Fischer, Dickens, & Levy, 2003). This may lead to increasingly dissociated enclaves of political perception and preference. Furthermore, the disproportionate political power held by wealthier citizens means that their (relatively less egalitarian) economic preferences will tend to hold sway (Bonica, McCarty, Poole, & Rosenthal, 2013).

Social sampling may also be antagonistic to rational political thought. It assumes one's social circles are representative of wider society and so can be seen as a manifestation of false consciousness (Jost, 1995; Pratto & Stewart, 2012). It is also a source of bias that may undermine people's ability to realistically appraise the economic hierarchy and their position within it. This ability is prerequisite for rational decision making in models of political economy (Cruces, Perez-Truglia, & Tetaz, 2011; Meltzer & Richard, 1981).

In contrast, the present results do not support strong claims about the accuracy of economic perceptions by specific groups in society. Poorer participants' explicit estimates were less accurate, underestimating mean U.S. incomes to a greater extent (Study 1b). However, these explicit estimates diverged widely from derived estimates of mean incomes, which were significantly higher than objective levels, and similarly so, for both poorer and wealthier participants. This method variance warrants caution in judging the overall accuracy of perceptions of economic efficiency. The same appears to be true of perceived economic inequality (Chambers, Swan, & Heesacker, 2014; Norton & Ariely, 2011), although the present studies do not speak directly to this phenomenon. As people's own wealth increases, their social circles become wealthier but not necessarily more unequal. For this reason, we neither expected nor observed indirect paths from participants' own wealth via social circle inequality to national inequality.

Social sampling exemplifies how "cognition is situated—not isolated in inner representations and processes

but causally interdependent with the current physical and social environment" (E. R. Smith & Semin, 2007, p. 132). The present results highlight the importance of examining ecological processes, in addition to ideologies or perceptions of self-interest, for understanding political behavior. Attitudes to redistribution and the economic status quo appear to be subject to (informational) biases in the environment as well as biases in the mind.

Author Contributions

The study was conceived by R. J. Dawtry and designed cooperatively by R. J. Dawtry and R. M. Sutton. Data collection and analyses were performed by R. J. Dawtry, under the supervision of R. M. Sutton. Study 2 data were provided by C. G. Sibley. The manuscript was drafted cooperatively by R. J. Dawtry and R. M. Sutton, and all authors approved the final version of the submitted manuscript.

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Declaration of Conflicting Interests

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

Supplemental Material

Additional supporting information can be found at http://pss.sagepub.com/content/by/supplemental-data

Open Practices

All data and materials have been made publicly available via Open Science Framework and can be accessed at https://osf.io/3mftr/. The complete Open Practices Disclosure for this article can be found at http://pss.sagepub.com/content/by/supplemental-data. This article has received badges for Open Data and Open Materials. More information about the Open Practices badges can be found at https://osf.io/tvyxz/wiki/1.%20View%20the%20Badges/ and http://pss.sagepub.com/content/25/1/3.full.

Notes

1. To examine order effects, we asked a sample of U.S. MTurk workers (N = 306) to estimate social-circle and total-population income distributions in counterbalanced order with a 2-min filler task between. In a moderated mediation analysis (PROCESS model 14; 10,000 resamples), presentation order did not moderate the indirect effect of own income on population mean income via social circles, b = −0.09, SE = 0.11, p = .38. The indirect relationship between own income and population mean income was the same whether social circles were estimated first (point estimate effect = 0.23, bias-corrected accelerated confidence interval, or BCa 95% CI = [0.11, 0.43]) or second (point estimate = 0.18, BCa 95% CI = [0.07, 0.39]).

2. Two participants were excluded from Study 1b analyses because of outlying income scores (4.72 *SD* and 10.62 *SD* above the mean). The indirect effect of income on redistribution via directly estimated mean incomes was not significant when these participants were included. In Study 1a, 2 participants also reported household incomes more than 4 *SD* above the mean (+4.66 *SD* and +6.25 *SD*). However, excluding these participants did not affect the results, and so their data were retained in the reported analyses; when we excluded these participants' values for the sequentially mediated effect of income on redistribution preferences, the indirect effect was –0.01, BCa 95% CI = [–0.02, –0.002].

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