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Becker, Bastian

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Temporal change in inequality perceptions and effects on political attitudes

Bastian Becker 

Research Center on Inequality and Social Policy (SOCIUM), University of Bremen, Bremen, Germany

ABSTRACT

Widespread unawareness and indifference arguably contribute to growing inequalities. However, previous studies have paid little attention to the applicability of these arguments over time. This paper demonstrates that perceptions of inequality and their effects on attitudes towards inequality and redistribution can change considerably. Using social survey data from the United States (1987–2009), it is shown that perceptions of income inequality do not have the same effect on attitudes throughout the period under study. Perceptions of opportunity inequality, which have received less attention in prior studies, produce more stable results. Accounting for and explaining such changes is necessary to advance research on inequality and public opinion.

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Introduction

Economic inequality as well as the attention it receives in public debates has increased dramatically since the 1970s, especially in the United States. Nevertheless, public support for policies that could reverse, or even contain, rising inequalities is lacking. While some argue that public support for such measures has failed to manifest because Americans are generally unaware of existing inequalities (Evans and Kelley 2004; Norton and Ariely 2011; Gimpelson and Treisman 2018), others suggest that Americans have little concern for growing disparities in the economic realm (Hochschild 1986; Benabou and Tirole 2006; Kelly and Enns 2010). This paper suggests that neither perspective provides a satisfactory account of how the relationship between inequality and public opinion has evolved in recent decades.

Despite increases in media coverage and its importance to public debates, little is known about whether and how perceptions of inequality and their effects on political attitudes change over time (McCall 2013). This article makes a first step at filling this gap by demonstrating that relationships between actual levels of inequality, perceptions, and political attitudes have evolved in the United States. While this article presents evidence

CONTACT Bastian Becker  bastian.becker@uni-bremen.de  Research Center on Inequality and Social Policy (SOCIUM), University of Bremen, Mary-Somerville-Straße 3, Bremen 28359, Germany

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of the existence of such changes, it is an important task for future research to explain them. Such explanations would greatly enhance the inferences we can draw from existing studies on inequality and redistribution.

Most earlier scholarship has approached inequality either by looking at disparities in outcomes or opportunities. Outcome-centred studies focus directly on the unevenness of the income distribution, as for example indicated by the Gini coefficient or pay differentials between income groups (Kuhn 2011; Kuziemko et al. 2015). Instead, opportunity-centred studies are concerned with the distribution of chances to attain different positions in the income distribution, using for example the lens of intergenerational mobility or income gaps between social groups (Alesina, Stantcheva, and Teso 2018; Becker 2020). These studies are usually experimental or comparative and generalizations are based on the assumption that perceptions constitute a stable transmission belt from actual inequality to political preferences. The present article asks whether this assumption is verified by exploring whether perceptions of inequality and their effects on political attitudes are stable across time.

I draw on public opinion data from the International Social Survey Programme (ISSP), in particular the 'Social Inequality' module, which was fielded four times between 1987 and 2009. The data contains information on inequality perceptions as well as related political attitudes. I compare the perceptions to corresponding factual measures, which I derive from various other sources. The results show that only perceptions of income inequality itself follows factual trends. At the same time, growing awareness of income inequality appears to harm, rather than strengthen, support for redistribution. There is no indication that perceptions of opportunity inequality have become more accurate over time. Opportunity perceptions are important throughout all years, leading individuals to strongly condemn inequality and to demand redistribution.

The paper makes three contributions. First, it provides a more extensive empirical picture of change in inequality perceptions in the United States than other studies before and demonstrates that generalizations from existing comparative and experimental studies can not be based on the assumption that links between facts, perceptions, and preferences are stable. It can thus serve as a starting point for future inquiries into the topic. Second, it demonstrates that one of the most commonly studied inequality perceptions, i.e. income inequality, is not the one most decisive for political attitudes. Instead, future research should pay closer attention to opportunity inequality, its perception and origins thereof. Third, the paper contributes to fundamental debates about the need to study subjective perceptions (see Page and Shapiro 1992). Skeptics argue that they are—even if biased—irrelevant as long as the relationship between facts, perceptions, and preferences are stable. By presenting evidence of considerable temporal instabilities in these relationships, this paper also underlines the urgency of studying perceptions to understand the political implications of inequality.

The paper proceeds as follows. The next section lays out the main elements of the scholarly debate on inequality and public opinion, zooming in on the role of inequality perceptions and their relationship to attitudes towards inequality and redistribution. The third section presents the empirical results of inequality perceptions and their effects on political attitudes change over time. The fourth section discusses the findings, and a final section concludes.

Inequality and public opinion

Public opinion is a central tenant of research on inequality, especially in democratic contexts. Depending on how the public, and voters in particular, respond to changes in inequality, office-seeking politicians might be more or less inclined to institute redistributive policies. Therefore, public opinion is key to the inequality-correcting function that is often ascribed to democracy. However, given the lacking public response to rising inequality, many are skeptical that public opinion can support democracy in this function. In the literature, one can broadly distinguish two perspectives, one positing ‘ignorance’ and the other ‘indifference’, that support this assessment.

The *ignorance perspective* contends that people are generally unaware of the extent of economic inequality (Gimpelson and Treisman 2018). Norton and Ariely (2011), for example, show that Americans from all economic strata systematically underestimate the extent of inequality. Similarly, when it comes to their own position within the economic distribution, people are also inclined to position themselves more towards the middle (Evans and Kelley 2004; Engelhardt and Wagener 2018). Independent of why individuals might care about their own position or inequality in general, the lack of awareness stops economic changes from translating into political demands.

Different explanations have been put forward to explain people’s underestimation of economic inequality. On the one hand, people’s perception of reality is limited to their proximate social and geographic environment, and this environment is usually characterized by less social diversity and differences than their nation as a whole (Ansolabehere, Meredith, and Snowberg 2014; Newman, Johnston, and Lown 2015; Minkoff and Lyons 2017). In people’s proximate social environment, income inequality thus appears smaller and one’s own relative standing closer to the average (Major 1994; Thal 2016). On the other, psychological processes might motivate people to ignore or discount new information that poses a challenge to their world view (Lerner 1965; Jost, Banaji, and Nosek 2004; Benabou and Tirole 2006). This can apply to information about high and rising levels of inequality, which thus contributes to the common underestimation of inequality.

Instead of contending that people are not aware of the extent of inequality, the *indifference perspective* suggests that Americans are not concerned about economic inequality. For example, Trump (2017) has shown how individuals that learn about growing inequalities simply move their normative yardstick on what are acceptable levels of inequality. Mijs (2019) argues that it is an increased belief in meritocracy that ameliorates concerns about inequality. Alternatively, individuals harbour stereotypes about the poor which lead them to see their economic deprivation as deserved (Petersen et al. 2011).

While Americans strongly support equality in the social and political realm, inequality in economic terms does not disturb them (Kluegel and Smith 1986). That being said, Americans do care about equality of opportunity in the economic realm, such that everybody should be guaranteed an equal opportunity to become unequal (Hochschild 1986; Alesina, Di Tella, and MacCulloch 2004). This argument finds strong support in empirical research, which has shown that perceptions and beliefs related to economic opportunities strongly affect a wide range of political and economic attitudes (Feldman 1988; Fong 2001; Linos and West 2003).

Recent scholarship has challenged the basic premises of the two perspectives. For example, several studies have shown that individuals do indeed underestimate various inequality-related facts, but also that new information can change perceptions and affect attitudes lastingly (Cruces, Truglia, and Tetaz 2012; Kuziemko et al. 2015; Karadja, Mollerstrom, and Seim 2016). Other studies suggest to focus on facts that are more closely aligned with ideas about equality of opportunity, such as intergenerational mobility or income gaps between social groups (Jaime-Castillo and Marqués-Perales 2014; Newman 2015). Corresponding experimental work finds that such facts are important determinants of attitudes towards inequality and redistribution (Shariff, Wiwad, and Aknin 2016; Alesina, Stantcheva, and Teso 2018; Becker 2020).

Notwithstanding these recent advances, the two perspectives continue to offer powerful explanations for why growing inequality does not translate into demand for redistribution. The ignorance perspective emphasizes people's inability to gauge inequality, be it in terms of outcomes or opportunities, correctly, so that even if they cared about inequality, it would not make a difference. To the contrary, the indifference perspective posits that even correct perceptions would not change support for redistribution as Americans have little concern for economic inequality. However, this does not apply to inequalities in opportunities, to which a strong opposition is assumed.

An important commonality of both perspectives is that they emphasize temporal continuity rather than change. Based on the ignorance perspective perceptions should be stable and not follow factual trends. According to the indifference perspective the effect of inequality perceptions on attitudes should be stable across time, i.e. absent in the case of outcomes and present in the case of opportunities. Assumptions about the temporal stability of effects also concern the recent critiques of the two perspectives. Most of them focus on a single point in time and do not explore temporal developments. Thus, generalizations from these studies hinge on the assumption that uncovered effects are stable across time.

The present paper directly addresses the question of the temporal stability of inequality perceptions and their effects on political attitudes. It is shown that neither can be taken for granted. This not only poses a challenge to the inferences that can be drawn from existing studies but also calls for a better theorization of changing inequality perceptions and their effects on political attitudes.

Zooming in on inequality perceptions

After this short summary of why and how inequality perceptions are relevant to political attitudes and public opinion more generally, the remainder of this section elaborates two aspects of inequality that are at the centre of the subsequent empirical analysis. These aspects concern income inequality and opportunity inequality. Both aspects are conceptualized in a way that allows for comparisons between perceptions and corresponding facts.

Income inequality

Instead of considering their own status, people might also be opposed to growing disparities between the rich and the poor more generally (Johnston and Newman 2016; Rueda and Stegmüller 2019). The most common measure of economic inequality, that is for

inequality in outcomes, found in the social sciences is the Gini coefficient. In plain words, the Gini coefficient indicates to what extent the actual distribution of incomes deviates from a hypothetical distribution in which all incomes are equal. As it is meaningless to ask individuals directly about the Gini coefficients, some researchers have suggested ways to construct measures of its perceptions.

In this paper, I follow the approach by McCall and Chin (2013) and Kiatpongsan and Norton (2014), who measure inequality perceptions by the perceived earnings ratio of top and bottom occupations, in particular chief executives and factory workers. This measure also offers itself as it can be compared to the same objective measure of the earnings ratio without having to make any additional assumptions. As such, perceived and actual earnings ratio of top and bottom occupations are used to assess the subjective and objective degree of outcome inequality respectively.

An alternative measure of inequality perceptions has been employed by Osberg and Smeeding (2006) and Kuhn (2011). Their measure relies on an ISSP question that asks respondents to choose among different diagrams the one that best represents stratification in their society. To each diagram, the researchers assign the corresponding Gini level. Although this is an elegant operationalization, it does not ask directly about income differences and does not reflect that public debates focus more often on pay differentials rather than aggregate distributions. Therefore, the approach introduced in the previous paragraph is used in this paper.

Opportunity inequality

While beliefs about equality of opportunity have long been identified as an important determinant of attitudes towards inequality, efforts to relate such beliefs to factual characteristics of the income distribution have increased only recently. In this paper, I follow an approach that relates equality of opportunity to income gaps between social groups. As argued by Roemer (1998), equality of opportunity is attained only if circumstances that are beyond individual control are not associated with differences in desirable outcomes. In empirical research on economic inequality, this concept has been operationalized using measures of between-group inequality, such as the Theil coefficient (Checchi and Peregine 2010; Ferreira and Gignoux 2011). Groups are constructed on the basis of circumstances, hence the ratio of between-group inequality and total inequality indicates the degree of opportunity inequality. As it is practically impossible to account for all circumstances, this measure provides a lower-bound estimate for the actual degree of opportunity inequality in a society (Ferreira and Gignoux 2011). In this paper I consider the circumstances most common in the literature, in particular sex, race, and family background.

As for the Gini coefficient, it is difficult to elicit perceptions of the Theil coefficient directly. Instead, I follow earlier work (see, Fong 2001; Linos and West 2003; Lierse 2019) and construct a measure of perceived opportunity inequality based on questions that ask respondents about the importance of different factors for success in life. The constructed measure averages over perceptions of the importance of factors that violate equality of opportunity. These factors are gender, race, parental education and family wealth. As has been shown elsewhere, the constructed measure is highly correlated with numeric assessments about the extent to which income differences result from

factors determined at birth (see Becker 2017, Chapter 4). Technical details on the operationalization of both measures are provided in the following section.

This approach is chosen over two alternatives in related scholarship. First, intergenerational mobility has been used as a measure of opportunity equality and operationalization of corresponding perceptions have been proposed. However, intergenerational mobility is by and large limited to determining the effects of parents standing on their children's success, which implies a narrower focus than the public debate. Second, scholars have elicited beliefs about 'structural inequality' (Mijs 2019) or the importance of 'exogenous factors' (Linos and West 2003).¹ However, these belief measures are not operationalized to be objectively verifiable and thus would not serve the purpose of the present study.

Empirical analysis

This section consists of two parts. In the first, I specify the just introduced objective and subjective concepts of economic inequality, determine whether perceptions are stable across time and how they compare to factual developments. In the second part, I devise a number of statistical models to explore how perceptions of inequality affect people's attitudes towards it. The main data source is the ISSP. In the United States, it is fielded together with the General Social Survey (GSS) and employs rotating modules with different topics. I draw on data from the 'Social Inequality' module, which contains information on a wide range of perceptions and attitudes related to inequality. Data is available for four years between 1987 and 2009, allowing me to cover a period in which inequality rose to become a hot button political issue. To compare the perceptions recorded in the ISSP to actual inequality developments, I draw on other sources, which are introduced below.

Missing data is handled using multiple imputation. Under the assumption that data is missing at random (conditional on the variables included in the imputation process), 50 complete data sets are created, statistical analyzes are run on each of them, and the results combined. As such, multiple imputation accounts better for uncertainty due to missing data than conventional methods, such as list-wise deletion or mean imputation (Rubin 1987; Honaker, King, and Blackwell 2011). Further details on the imputation procedure can be found in Appendix A. The results are robust to list-wise deletion.

Inequality facts and perceptions

Income inequality

Are people's perceptions of income inequality stable across time or do they follow actual earnings disparities? In order to assess this, I compare what people perceive to be the ratio between earnings of chief executives and unskilled workers. In this regard the ISSP asks people about what they think these two occupational groups earn: 'How much do you think a chairman of a large national corporation/an unskilled worker in a factory earns?'. The subjective earnings ratio, which I refer to as *perceived inequality*, is computed by dividing the answer to the former question by the answer to the latter. The objective equivalent, *actual inequality*, is taken from a study on earnings ratios in the 350 largest (in

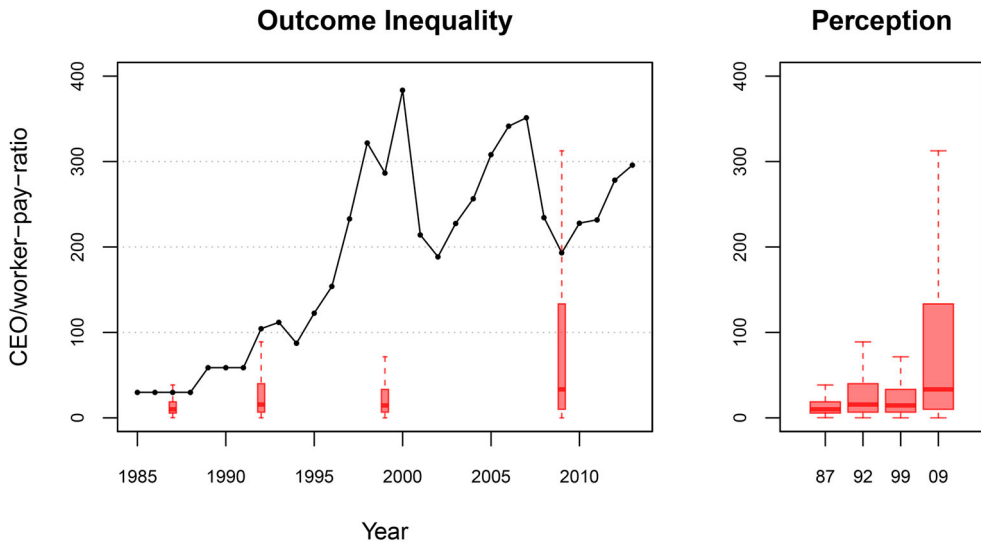


Figure 1. Perceived and actual outcome inequality (CEO-worker pay ratio), 1985–2013.

Note: Actual inequality indicated by black lines (Source: Mishel and Davis 2014), perceived inequality by red box-plots (own computations based on ISSP).

terms of sales) U.S. firms (Mishel and Davis 2014). Figure 1 combines subjective and objective measures of earnings ratios of chief executives and unskilled workers in one graph.²

Figure 1 illustrates how the general increase in economic inequality in the last two decades is reflected by skyrocketing ratios between what chief executives make compared to unskilled workers. While this ratio was just below 30 in 1987, it has been in the range of 200 to 350 since the late-1990s. The right plot zooms in on people’s perception of the earnings ratio. While it has increased significantly, the higher perception of the earnings ratio did not catch up with the development of the real ratio. In 1987, the median perception of the ratio was 10, compared to the objective measure of about 30, and in 2009, the median perceived ratio of about 33 fell short of its objective level of about 193. However, the dispersion of what people perceived the pay ratio to be increased greatly. While 85.9% of ISSP respondents underestimated the actual ratio in 1987, this number decreased to 79.6% in 2009. While perceptions are far from accurately reflecting the facts, it is also clear that perceptions do change over time and they do so following factual trends.

Opportunity inequality

To what extent do circumstances determine economic attainment, and do people perceive these unequal opportunities? As discussed above, Roemer (1998) offers an operationalization of equality of opportunity that has since then been employed widely in empirical research. The extent of opportunity inequality, or *inequity* for short, is simply the extent to which unequal outcomes are associated with circumstances beyond individual control. In empirical research, inequity is operationalized as the size of between-group inequality as a share of total inequality, whereby groups are defined on the basis of circumstances beyond individual control. The different kinds of inequality can be derived using the Theil-0 coefficient (Checchi and Peragine 2010; Ferreira and Gignoux 2011).

Following Elbers et al. (2007), the Theil-0 estimator for inequality between groups (BGI), and total inequality (TI) are defined as follows.

$$BGI = \sum_g^G w_g * \log \frac{\mu}{\mu_g}$$

$$TI = \sum_i^I w_i * \log \frac{\mu}{o_i}$$

In this g and i are indexes for groups and individuals respectively. μ indicates the overall average (in income), and μ_g the group average; o_i stands for the outcome variable (i.e. income) of individuals. w_g and w_i are statistical weights of groups and individuals respectively. The level of *inequity* then corresponds to $\frac{BGI}{TI}$.

The data used for computing objective levels of inequity comes from the PSID survey, from which I use data from 1990 to 2012. The PSID consists of a random sample of U.S. households, which until 1996 have been interviewed annually and since then every other year. For each survey year, I pool responses from household heads as well as their partners to construct an individual level data set. The data set is limited to include only individuals between the ages of 18 and 65, and who are currently in the labour force (including unemployed). Each individual's income combines three components, wages, business income, and farm income.

Three circumstances are used to divide individuals into groups: gender (female, male), race (white, non-white), parents education (highest level of education of mother or father: less than high school, finished high school, more than high school). On the basis of these three circumstances, and the resulting 12 groups, differences in income are decomposed into their between-group and within-group share. Table 1 summarizes the results of the decomposition for each survey year. It is important to keep in mind that the estimate of *inequity* always provides a lower-bound estimate. The inclusion of further circumstance variables would increase this estimate. However, if the most important circumstance variables are included, this lower bound estimate can provide a good idea of the actual degree of inequity.

As mentioned before, I use ISSP data and combine different questions on what determines success in life to arrive at a measure for people's perception of inequity. The ISSP survey in 1987, 1992 and 2010 includes the same battery of question on what people think how important different factors are in determining success in life. In 1999, only an abbreviated version of the 'Getting ahead' scale was fielded, covering only one of the four items of interest, such that it cannot be included in the analysis here. The exact phrasing of these question is, 'Please tick one box for each of these to show how important you think it is for getting ahead in life...'. The five answer options range from 'Not important at all' to 'Essential'. Four questions reflect perceptions of factors beyond individual control; these include family wealth, parents education, gender, and race (see Table 2 for response frequencies).

The questions are developed to be on a Likert-type scale such that they offer themselves for aggregation through averaging. Therefore, I calculate the mean of the variables to reflect perceptions of inequity, or *perceived inequity* for short, and standardize it to range from 0 to 1. I conduct internal validity tests for all available survey years. The

Table 1. Inequity based on Theil-0 decomposition, 1990–2012.

Year	1990	1991	1992	1993	1995	1996	1998	2000	2002	2004	2006	2008	2010	2012
BGI	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.05	0.06
TI	0.64	0.65	0.70	0.81	0.68	0.74	0.63	0.61	0.60	0.61	0.65	0.63	0.80	0.75
Inequity	0.10	0.10	0.08	0.08	0.08	0.07	0.08	0.09	0.10	0.10	0.09	0.09	0.06	0.07
N	10047	10408	10370	8726	8715	7201	7423	7830	8384	8682	8982	9070	9178	9288

Note: Inequality in Opportunity (Ineq. in Opp.) is the share of inequality between-groups of total inequality. Correspondence to formulas above: BGI = 'Inequality, between-groups', TI = 'Inequality, total'.

Table 2. ISSP 'Getting Ahead' scale, items included in 'Perceived inequity' construct.

	Essential	Very important	Fairly important	Not very important	Not important at all
1987					
Family wealth	4.4	19.1	28.4	30.6	17.6
Parents education	7.0	35.1	38.4	14.4	5.2
Race	3.0	15.3	24.1	33.3	24.2
Gender	3.7	13.5	22.7	32.0	28.0
1992					
Family wealth	3.7	14.6	32.0	31.4	18.4
Parents education	6.7	35.5	41.0	13.0	3.8
Race	3.2	12.6	25.2	32.8	26.3
Gender	2.8	14.6	24.6	32.6	25.3
2009					
Family wealth	5.5	25.1	31.9	25.3	12.2
Parents education	7.4	42.5	35.9	11.0	3.2
Race	1.6	9.9	19.1	32.0	37.4
Gender	1.7	9.6	17.0	35.8	36.0

Note: Values indicate response frequencies [%].

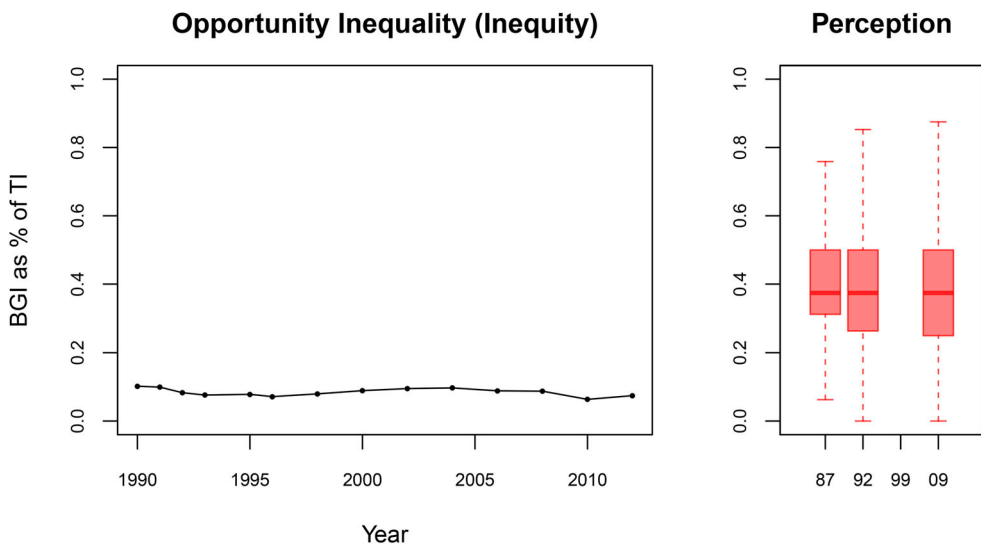
Table 3. Construct validity of ‘Perceived Inequity’ (based on ISSP ‘Getting Ahead’ scale).

Year	Item remainder coefficients				Cronbach’s α
	Family wealth	Parents education	Race	Gender	
1987	0.46	0.32	0.44	0.40	0.62
1992	0.50	0.32	0.46	0.45	0.65
2009	0.41	0.37	0.52	0.44	0.65

results are summarized in Table 3. With all item remainder coefficients exceeding .3 and Cronbach’s α of above .6, the internal validity of the construct is satisfactory.

Several studies that are concerned with beliefs about inequality determinants have made use of the ‘Getting ahead’ scale (Linos and West 2003; Mijs 2019). They have shown that what is commonly referred to as belief in meritocracy strongly affects political preferences. This belief is usually captured by the importance respondents assign to determinants within individual control, in particular hard work and having ambition. To ascertain that the here proposed measure of inequity perceptions not merely mirrors meritocracy beliefs, I conduct a factor analysis. The results are summarized in Appendix C. They clearly show for all survey waves that the variables usually included in either measure constitute separate factors, both in a one factor and a two factor specification. Nevertheless, I show that the regression results presented below are robust to controlling for meritocracy beliefs.

Figure 2 illustrates both the development of the objective level of inequity and what people perceived it to be. The objective level remains rather stable over time, the average value of all years being 8.5%. The low inequity in 2010 seems to be the result of increased total inequality following the financial crisis, rather than changes in inequality between groups (see Table 1). Again, red box-plots indicate people’s perceptions, i.e. *perceived*

**Figure 2.** Perceived and actual opportunity inequality (inequity), 1987–2012.

Note: Actual inequity indicated by the black line (based on PSID data), perceived inequity by the red box-plots (based on ISSP data). Measures are not scale equivalent.

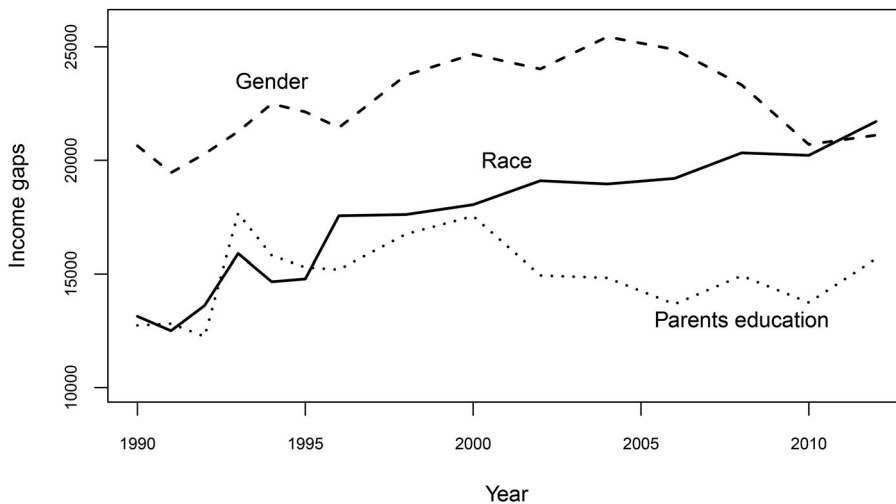


Figure 3. Income differences according to circumstances, 1990–2012.

Note: Income gaps by gender (male versus female), race (white versus non-white), and parents education (university vs high school), among labour force (18–65 year olds). Own computation based on PSID data, 2010USD.

inequity. These perceptions turn out to be also rather stable across time, only their dispersion has increased over the years.

As mentioned before, perceived inequity only provides a relative indication of how unequal people perceive opportunities to be, and thus it can not directly be compared to the objective measure. However, the stability of both measure could be an indication that perceptions indeed reflect facts. To probe this question, I compare perceptions of the different factors to the development of different income gaps. The actual income gaps between groups defined by gender, race, and parents education are shown in [Figure 3](#). It can be seen that the race gap increased substantively over the past 20 years, whereas the other two gaps were rather stable. A comparison with [Table 2](#) shows that these developments are not reflected in the perception of the corresponding factors for success in life. Parents education is generally perceived to be more important than gender and race, which does not correspond to the income gaps. Furthermore, the modal response to the importance of race indicates that it is perceived to be less important in 2009 than before (opposite to the development of the race gap). At the same time, the modal response for parents education indicates a growing importance, which the income gap does not attest to.

Effects of perceptions on attitudes towards inequality and redistribution

This section is concerned with the effects of inequality perceptions and political attitudes and their stability across time. The analysis focuses on two of the most commonly asked questions in social surveys; that is whether people think income differences are too large (*inequality attitude*), and whether the government should redistribute more (*redistribution attitude*). Specifically, ISSP respondents are asked about their agreement with the following two statements: ‘Differences in income in the United States are too large’, and ‘It is the responsibility of the government to reduce the differences in income between people

with high incomes and those with low incomes'. Responses are recorded on a five-point scale, ranging from (1) 'Strongly disagree' to (5) 'Strongly agree'. The original scale has been reversed for easier interpretation. Throughout all survey years, the distribution of responses is rather stable. Furthermore, respondents express consistently higher agreement with the first statement than with the second (means range from 3.5–3.9, respectively 2.7–2.9; see Appendix B, Tables B1–B4). Thus, the condemnation of economic inequalities does not automatically lead to support for government redistribution.

The main explanatory variables in the following statistical analyzes are the two inequality perceptions introduced in the previous section: *perceived inequality* and *perceived inequity*. The analyzes are conducted separately for each survey year to discern temporal changes. Collinearity checks and the separate testing of models with only one perception variable each suggest that it is unproblematic to incorporate these variables in the same model.

In addition to the inequality perceptions, a range of control variables are included in all models. Dichotomous demographic controls for gender (*female*), race (*non-white*), marital status (*married*), education (here categorized by level of attainment, i.e. *High school, University*), and continuous variables for *household size* and *age* are included. To account for past and present economic experiences, all of which should be consequential for perceptions and attitudes (Piketty 1995; Rueda 2005; Schmidt-Catran 2016), I include variables to indicate whether a person was *upwardly mobile* compared to their father, whether they are currently *not employed*, and what their current family *income* is.³

Further controls that I account for are whether a person is *religious*, i.e. attends service at least once per week. Scheve and Stasavage (2006) argue that religiosity can alleviate people's concerns about inequality, and thus I include a variable that elicits the frequency of attending religious events. Similarly, *union membership* can be an important source of support but also economic and political information related to inequality (Kim and Margalit 2017). With the exception of race in 1987, all control variables are available for all survey years. As I discuss below, the results are robust to the inclusion of additional control variables, in particular beliefs related to inequality. Descriptive statistics for all surveys are included in Appendix B.

The first set of models concerns the effects of inequality perceptions on inequality attitudes (i.e. agreement with 'income differences are too large'). The results summarized in Table 4. In the first model (1987), *perceived inequality* points in the opposite direction from what is generally expected, with respondent becoming less likely to condemn income difference the larger they perceive inequality to be. The three later years confirm the expectation, although the coefficient fails to attain statistical significance in model 3 (1999). Altogether, the varying sign and significance of the effect clearly points towards its temporal instability.

A different picture emerges with regards to *perceived inequity*, which indicates perceptions of inequality in opportunity. Its effect is as expected positive, and statistically significant, throughout all years in which data is available. Respondents who perceive factors determined at birth to have a stronger influence on economic success are consistently more likely to condemn existing income differences. As such, the results presented here speak to the temporal stability of this effect.

The second set of models turns towards the relationship between perceptions and redistribution attitudes, i.e. whether respondents' support governmental initiatives to

Table 4. Agreement with 'Income differences are too large' (Inequality Attitudes, OLS Results).

	Model 1 (1987)		Model 2 (1992)		Model 3 (1999)		Model 4 (2009)	
	b	se	b	se	b	se	b	se
(Intercept)	3.655***	(0.399)	4.743***	(0.462)	3.642***	(0.411)	4.042***	(0.405)
Perceived Inequality (log)	-0.071*	(0.03)	0.062*	(0.026)	0.057	(0.032)	0.045*	(0.018)
Perceived Inequity	0.523***	(0.157)	0.441**	(0.155)			0.399*	(0.171)
Income (log)	-0.051	(0.038)	-0.092*	(0.045)	-0.056	(0.039)	-0.068	(0.037)
Not employed	-0.037	(0.07)	-0.041	(0.068)	0.047	(0.077)	-0.065	(0.067)
Female	0.135*	(0.058)	0.103	(0.058)	0.133*	(0.063)	0.157**	(0.06)
Non-white			-0.026	(0.078)	0.075	(0.081)	0.068	(0.07)
Age	0.004	(0.002)	-0.004	(0.002)	0.006*	(0.002)	0.003	(0.002)
High school	-0.048	(0.081)	0.041	(0.085)	0.332**	(0.106)	0.055	(0.104)
University	-0.107	(0.083)	-0.038	(0.088)	0.194	(0.106)	0.162	(0.104)
Married	-0.042	(0.068)	0.125	(0.067)	-0.164*	(0.078)	0.019	(0.071)
Household size (log)	0.095	(0.086)	-0.099	(0.093)	0.046	(0.105)	-0.179*	(0.09)
Upwardly mobile	0.057	(0.056)	-0.067	(0.058)	0.021	(0.067)	0.023	(0.061)
Union member	0.131	(0.081)	0.077	(0.086)	-0.017	(0.102)	0.063	(0.105)
Religious	0.055	(0.06)	-0.012	(0.06)	-0.047	(0.071)	-0.247***	(0.065)
r-squared	0.026		0.027		0.041		0.032	
N	1564		1273		1272		1581	

Note: Standard errors in parentheses (***p<.001, **p<.01, *p<.05).

reduce income differences (see Table 5). For *perceived inequality*, the estimated coefficient is negative across all years, which implies that those who perceive inequality to be larger are *less* inclined to support redistribution. This is the opposite from what would be expected if respondents were concerned about inequality. That being said, the coefficient is not statistically significant in the first and third survey year, which calls into question the temporal stability of this effect.

The coefficient estimates for *perceived inequity* again align with the expectation that individuals condemn unequal opportunities and are statistically significant in all years. While this supports the temporal stability of the effect, there is considerable variation in the magnitude of the effect. The separate estimation of regression models is not

Table 5. Agreement with 'Government should reduce income differences' (Redistribution Attitudes, OLS Results).

	Model 5 (1987)		Model 6 (1992)		Model 7 (1999)		Model 8 (2009)	
	b	se	b	se	b	se	b	se
(Intercept)	4.757***	(0.435)	5.213***	(0.544)	4.71***	(0.484)	4.136***	(0.427)
Perceived Inequality (log)	-0.056	(0.032)	-0.136***	(0.032)	-0.054	(0.036)	-0.072***	(0.018)
Perceived Inequity	0.959***	(0.165)	0.515**	(0.183)			1.069***	(0.18)
Income (log)	-0.179***	(0.041)	-0.174***	(0.052)	-0.153**	(0.047)	-0.131***	(0.039)
Not employed	-0.035	(0.073)	0.048	(0.082)	-0.133	(0.089)	-0.091	(0.073)
Female	0.073	(0.061)	0.157*	(0.07)	0.197**	(0.074)	0.151*	(0.064)
Non-white			0.325***	(0.096)	0.256**	(0.088)	0.454***	(0.077)
Age	-0.005*	(0.002)	-0.006*	(0.003)	0.002	(0.003)	-0.002	(0.002)
High school	-0.325***	(0.084)	-0.102	(0.101)	-0.102	(0.124)	-0.248*	(0.11)
University	-0.518***	(0.088)	-0.389***	(0.105)	-0.295*	(0.125)	-0.286**	(0.109)
Married	-0.07	(0.071)	-0.013	(0.08)	-0.141	(0.092)	0.031	(0.075)
Household size (log)	0.095	(0.093)	-0.021	(0.112)	0.057	(0.123)	-0.047	(0.099)
Upwardly mobile	0.022	(0.06)	0.058	(0.069)	-0.074	(0.075)	0.09	(0.065)
Union member	0.129	(0.085)	0.174	(0.103)	0.181	(0.127)	0.049	(0.121)
Religious	0.024	(0.064)	-0.084	(0.074)	-0.238**	(0.083)	-0.305***	(0.07)
r-squared	0.117		0.146		0.098		0.122	
N	1564		1273		1272		1581	

Note: Standard errors in parentheses (***p<.001, **p<.01, *p<.05).

well suited for exploring this kind of instability. However, doing so is possible on the basis of pooled data.

An alternative approach to analyzing the temporal stability of effects is multiple hypotheses testing in a regression framework based on pooled survey waves. Such an analysis, which specifically tests whether coefficients are equivalent across the survey waves, is included in Appendix D. In line with the results presented above, it is found that the effect of *perceived inequality* on attitudes towards inequality is not stable ($F_{2,4376} = 8.014, p = 0.001$). However, its effects on attitudes towards redistribution are ($F_{2,4376} = 2.633, p = 0.106$). With regards to *perceived inequity*, the effects on inequality attitudes are stable across time ($F_{2,4376} = 0.223, p = 0.814$), but effects on redistribution attitudes are not ($F_{2,4376} = 3.773, p = 0.032$). While the alternative testing framework largely corroborates the findings, it clearly shows that instability is also present for effects of inequity perceptions.

The main results change little when robustness checks without or additional control variables are performed. No coefficient in any of the model changes their direction (see Appendix E). When only the two inequality perceptions are kept as predictors, *perceived inequality* becomes statistically significant in one additional model and loses significance in another. *Perceived inequity* remains significant throughout all models.

In a second set of robustness checks, variables that capture individual beliefs about inequality are introduced. They have been previously omitted due to their proximity to conceptualizations and operationalizations of the perception variables. In particular, I include a variable for *meritocracy belief* which is based on the ISSP Getting Ahead scale and averages over the items referring to the importance of hard work and having ambition. I also include a variable that captures where respondent place themselves in society on a scale from 1 to 10 (*social status*) and a binary variable that reflects whether respondent believe their own pay reflects skills and effort (*own pay just*).

In line with recent studies, *meritocracy belief* has a consistently negative effect on redistribution attitudes (Mijs 2019) and *social status* a negative effect on inequality attitudes (Fatke 2018; Duman 2019).⁴ The *own pay just* variable is only available for the later two survey years but has the expected negative effect on redistribution attitudes (Ahrens 2019). Most important for this study, introducing these additional controls corroborates its main results. With one exception, the estimated coefficients for the two inequality perceptions remain unchanged.⁵

In a final step, I compute standardized effects. The standardized effects, which are the product of the raw regression coefficients and the standard deviation of the corresponding variables, indicate the predicted change in the dependent variable for a one standard deviation change in the respective independent variable. Figure 4 presents the standardized effects. They were computed on the basis of the main model results.

Standardized coefficients serve two purposes here. First, they can provide a better idea of the substantive effect size of different coefficients. Such comparisons are otherwise difficult for variables that are measured on different scales, such as the two inequality perceptions. Furthermore, it can alleviate concerns that the presented patterns of stability and instability might be offset by distributional changes across time.

The left panel shows the effects of *perceived inequality* on redistribution and inequality attitudes, while the panel on the right presents the effects of *perceived inequity*. It can be seen that the standardized effects are overall similar in magnitude, which implies that

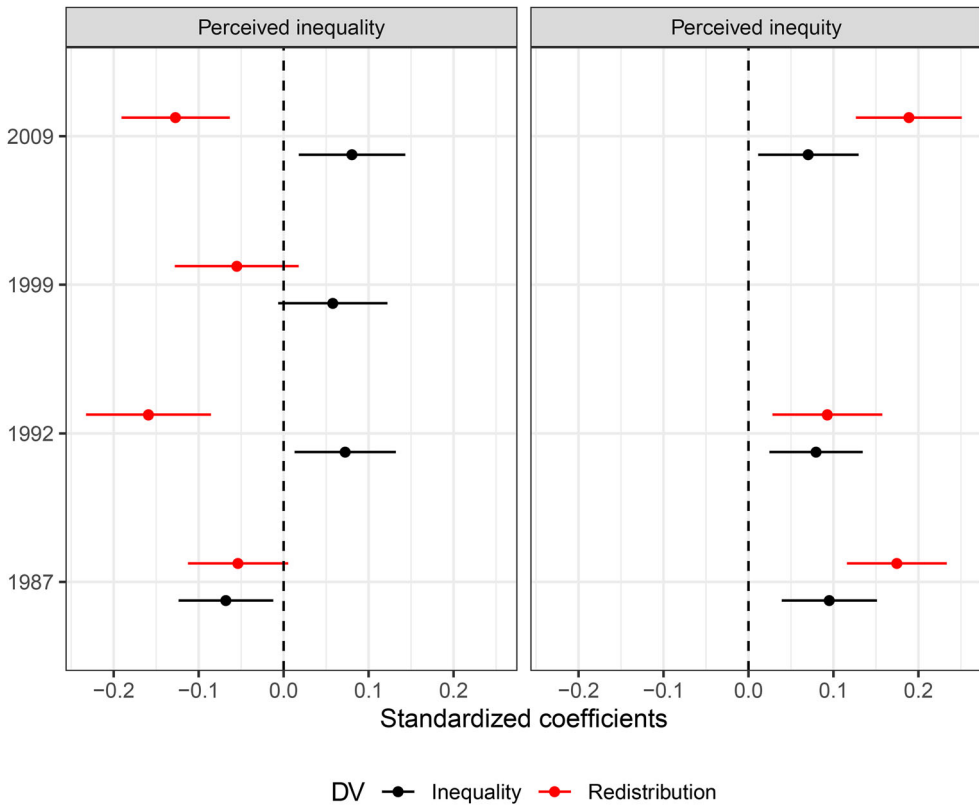


Figure 4. Standardized effects of inequality perceptions.

Note: Standardized coefficients based on results of main models.

their effect on attitudes is of comparable strength. As such, differences between the coefficients of the two inequality perceptions mainly resulted from their different scales and distributions.

More importantly, the variation in the effect sizes, and thus their temporal stability, aligns with results presented above. The effects of *perceived inequality* consistently point in the same direction, but are more stable for inequality attitudes than redistribution attitudes. With regards to *perceived inequality*, less stability across the years can be observed. This instability is most pronounced for inequality attitudes, and less so for redistribution attitudes.

Discussion

As mentioned in the introduction, Americans are often regarded as unaware or unconcerned about economic inequality. However, related scholarship rarely considers that perceptions of inequality and their effects on political attitudes might change. To address this issue, the previous section first analyzed inequality perceptions and compared them to actual developments. The focus was on the two most commonly discussed aspects of economic inequality: the extent of income inequality and the extent of inequality in opportunity. Did people's perceptions come closer to the facts?

The results are mixed. First, people seem to have become more aware of the extent of income inequality. While CEO/worker pay ratios exploded over the last decades, the same happened to people's perception of these ratios. It is true that most people still underestimate them, but perceptions are following the actual trend (see Figure 1). This might not be surprising if one considers that much of the media coverage and political discourse in recent years has focussed on highlighting excessive pay of bankers and CEOs, and disparities between the top '1%' and the rest (McCall 2013).

The treatment of inequality in opportunity, or inequity, in this paper is in some ways a novelty. Instead of treating it as a belief with no empirical foundation, I explore the relevance of a specific distributive understanding of inequality in opportunity that can be related to both, factual aspects of the economic distribution and people's perception thereof. This distributive understanding is concerned with the impact of circumstances beyond individual control on economic success. Taking into account the effect of the most prominent circumstances in American social life, gender, race, and family background (proxied by parents education), I show in the previous section that since 1990 almost 10% of people's economic success can be explained by these factors only. Similarly, perceptions of inequity were also fairly stable between 1987 and 2009. However, this does not imply that perceptions are accurate. In fact, the perceived importance of different factors does not correspond to objective income gaps. This echoes earlier work which has shown that individuals are prone to underestimate income gaps between social groups (Kraus, Rucker, and Richeson 2017; Becker 2020).

One conclusion is certain: inequality perceptions are neither entirely stable across time nor do they simply mirror facts. This raises questions about the sources of perceptions with regards to sociological and cognitive processes, but more interestingly about how people attain information about inequality beyond their immediate social environment. While media and politics recently attended more strongly to issues of economic inequality, this seems to have made people more aware of how unequal incomes, but not opportunities, are distributed. As this study covers a time-period of over two decades, important historical events, such as the 2009 financial crisis or the election of the first African-American president, might have also contributed to these developments.

Public opinion, and thus individual attitudes, are often seen as an important link between economic changes and government responses. Thus, it is not only relevant how people perceive of inequality but also how these perceptions affect attitudes towards inequality and redistribution. The attitudinal consequences of perception of income inequality, in particular pay ratios between CEOs and workers, provide an interesting puzzle. In the first survey (1987), individuals who perceive inequality to be larger are less likely to regard inequality as too large. However, this changes in the other three years, when the relationship becomes positive. This finding is in line with McCall (2013), who argues that high income earners have come to be increasingly seen as undeserving.

To the contrary, the effect of perceived inequality on redistribution attitudes is consistently negative, even though the failure to achieve statistical significance in all years points towards a certain instability in this effect. Nevertheless, the opposing effects imply that the condemnation of inequality does not automatically lead to support for redistribution. Greater awareness about income inequality might, as Loveless (2013) and Gallego (2016) suggest, stifle trust in governments and thus their ability to implement effective policy responses.

In the above analyzes, perceptions of inequity constitute the most stable determinant of attitudes towards inequality and redistribution. Consistently across all years, individuals who perceive inequity to be higher, and thus opportunities to be more unequal, condemn existing inequalities more strongly and express greater support for government redistribution. Nevertheless, the strength of this condemnation varies across years pointing also to some instability in the effect of inequity perceptions.

An important caveat of this study is its focus on the United States. While the United States have seen inequality grow more in the past decades than most other countries in the world, it can also be argued that inequality plays a more prominent role in public debates and thus might be more relevant for preference formation and public opinion than elsewhere. This concern might apply even more strongly to aspects of opportunity inequality than outcome inequality. Therefore, it is important for future studies to explore in how far the findings presented here extend to other countries and contexts.

Conclusion

This paper explored inequality perceptions and their political consequences during a time in which inequality has received increasing public and academic attention. To this end, all rounds of the ISSP, the longest-running standardized survey initiative on the topic, have been analyzed. Two findings stand out.

First, perceptions of income inequality were not stable across time nor were their effects on political attitudes. Instead, perceptions of pay differentials between CEOs and workers do to some degree follow factual trends. It is possible that this is due to the frequent emphasis on such differentials or the incomes of the '1%' in media and public debates. The financial crisis of 2009 and subsequent political responses might also have contributed. While the results here show that Americans started condemning such income inequality, this has not automatically led to more support for redistribution. Accounting for and explaining such changes are important challenges for future work on this topic. Without an understanding of these changes our ability to generalize from existing studies, and thus much of the comparative and experimental work, is greatly inhibited.

Second, the analysis revealed that perceptions of opportunity inequality and their effects on attitudes towards inequality and redistribution were rather stable across time. One possible explanation is that issues like gender and race income gaps or social mobility have received less attention in public debates than other, less controversial, aspects of inequality (CEO pay, the '1%'). Asserting whether and why this is the case is beyond the present study. More generally, future research should put a greater focus on opportunity inequality as the attention it received so far falls short of its importance in shaping individual attitudes.

Overall, this paper shows that both the ignorance and the indifference perspective, which content that Americans are either unaware or unconcerned about economic inequality, insufficiently captures the relationship between inequality and public opinion in the United States. In particular, the two perspectives cannot account for how and why perceptions of inequality and their effects on political attitudes have changed in the past decades. While this article has focussed on demonstrating the

existence of such changes, it is an important task for future research to explain them. Such explanations would also greatly enhance the inferences that can be drawn from existing studies on inequality and redistribution.

Notes

1. While the mentioned studies use some of the same data and variables, they consider for example what people think about the relevance of political connections and social networks for individual success.
2. It should be noted that the focus on large firms implies that only inequality in parts of the labour force is covered. However, Mishel and Davis (2014) point out that executive pay has been a major driver of top incomes, such that similar trends between inequality in large firms and the wider society can be assumed.
3. The ISSP income categories are transformed into a continuous variable by replacing categories with their mid-points. The open-ended top category is replaced with its lower bound multiplied by a factor of 1.3 (Hout 2004). All values are deflated to correspond to US\$2000.
4. Note that Mijs (2019) analyzes effects on inequality attitudes. These effects are not found in the present study.
5. The effect of *perceived inequality* on inequality attitudes becomes significant in the third survey year (1999).

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ORCID

Bastian Becker  <http://orcid.org/0000-0001-6668-153X>

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