

How consistent are perceptions of inequality?

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Abstract

Despite recent empirical evidence on the importance of perceived inequality, its analysis is still underexplored. In this paper we study whether unobserved perceptions of inequality are reflected in observed individual opinions in a consistent fashion. Inconsistency is relevant to evaluate the level of agreement that individuals share with respect to different domains of inequality.

Using the wave from the 2009 International Social Survey Program in the US, we show that inequality is a complicated concept prone to inconsistencies and propose a testing procedure to an empirical appraisal. We find that inconsistencies exist though they may not extend to all the domains of inequality. This inconsistency also emerges by analyzing the relation between unobserved perceptions and political treatment suggesting the hypothesis that inconsistency may be associated with a set of relevant political preferences.

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1. The Elsevier article class

2. Introduction

As knowledge of perceived inequality expands in depth and width, its importance becomes more apparent. A substantial literature that explores the role of inequality in motivating policies and, in

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5 general, the social and political behavior of individuals supports the view that perceptions about the degree of inequality correlate strongly, and more effectively than actual inequality, with political outcomes (Alesina and Angeletos, [1]; Ianchovichina, [2]; Gimpelson and Treisman, [3]). However, these findings and the evidence and narratives that reinforce the role of perceptions for policy and politics are yet not matched by an adequate knowledge of the characteristics of perceived inequality.

10 A question, still under explored, is whether perceptions of inequality are reflected in the individual opinions in a consistent fashion. In other words, we would expect that the opinions given by the respondents mirror their perceived inequality or, as we also say in this paper, their view of general inequality. So, if a respondent believes that society is highly unequal, her answers to the specific questions used to elicit her perceptions should always reflect her general belief. However,
15 we show that such an expectation is naive. Inequality is a complicated and emotional concept prone to inconsistencies and individuals display substantial heterogeneity in reporting perceptions into questionnaires.

The first aim that we then pursue in this paper is to introduce a test of consistency to assess whether the opinions reported by respondents match their perceived inequality. Using the 2009
20 wave of the ISSP (International Social Survey Programme) data for the United States, in particular the module of Social Inequality, we test the presence of inconsistency offering, in so doing, a methodology to detect it.

As we find inconsistency, then we face a conceptual challenge. Why shouldn't a respondent who sees her society as highly unequal reflect in full her view in the answers that she reports? Our
25 second aim in this paper is to shed light on this puzzle. We suggest that the respondent's perceived inequality is embedded with her view about the determinants of inequality. From the respondent's perspective, some determinants are admissible whereas others aren't. So, even if she believes that general inequality is high, her belief might not be reflected in the survey's answers because the determinants of inequality are not considered as admissible.

30 Though disregarded in the literature on perceived inequality, information about the admissible determinants is beneficial. First, it unveils what the respondent thinks about inequality and what she deems as bearable in an unequal distribution. It therefore allows to explore how she answers to a fundamental conceptual question in the study of inequality, namely what is to be equalized. Second, it possesses a value that can be connected to political outcomes. To explore this connec-

tion is another goal of this paper. We combine the view of inequality that respondents report with information about their preferences over social policies. In so doing, we find further evidence of the importance of perceived inequality for political outcomes: since consistency is crucial to understand the respondent's view of inequality, it is likely to bear politically relevant consequences.

The paper is organized as follows. In the next Section we discuss the informational relevance of consistency and the analytical benefits that it delivers to the study of perceived inequality and its political importance. To this end, we refer to an example drawn from the historical evolution of equality of opportunity in the US and its political implications. In Section 3 we present the empirical technique used to test for consistency and discuss the intuition behind our empirical analysis. In Section 4 we introduce the data for the empirical exercise. In Section 5 we present the paper's results. We take particular care to provide intuitions about the inconsistent individuals' characteristics and about their political preferences. Section 6 concludes by summing up our main results.

3. The informational relevance of consistency

The analysis of perceived inequality and, in particular, the study of its determinants has a long tradition in social science (Corneo and Grüner, [4]; Alesina and La Ferrara, [5]; Kuhn, [6]; Cruces et al, [7]; Brunori, [8]; Gimpelson and Treisman, [3]).

In a recent paper, Bavetta et al. [9] proposed a general approach to assess how observable individual characteristics affect the joint distribution of a set of indicators of perceived inequality in specific domains. In particular, they observed that perceived inequality possesses two features that must be taken in consideration for its assessment. On the one hand, it is an essentially contested concept (Gallie, [10]). Therefore, the reconstruction of perceived inequality from the views expressed by the respondents must be done within different domains separated according to the interpretation of inequality to which the respondents subscribe because the views that they express are all equally legitimate.

On the other hand, they suggested that the joint effect of perceived inequality on the indicators may not be consistent. As far as the respondents value differently distinct aspects of the same domain, it is plausible to expect that perceived inequality may heterogeneously affect how they frame their indicators' answer. Heterogeneity calls for care in handling the analysis of perceived inequality as it introduces important, informationally rich subtleties that bear relevant political consequences.

It is the second feature that we explore in finer details in this paper, namely whether perceived
65 inequality affects heterogeneously (inconsistently) the answers that respondents give to the questions
used to elicit their perception. Recall that perceived inequality is unobservable and it is elicited from
the value taken by a set of indicators that express the respondent's opinions (Bavetta *et al.*, [9]). Note
that the opinions are also shaped by the respondent's general view over society and, in particular, by
how inequality is felt, experienced or understood (Alesina *et al.*, [11]; Luttmer and Singhal, [12];
70 Niehues, [13]; Corazzini *et al.* [14]). There is no *a priori* reason why the general perception of
inequality should affect consistently the opinions expressed through the indicators because there is
no univocal mechanism that allows the respondent to entangle specific dimensions (e.g., being left
or right-wing, believing on the role of the state as an equalizer, etc.) in the construction of her
perception. This is a relevant concern because it touches upon the identification of those aspects of
75 inequality that deserve equal consideration according to the respondent and, ultimately, on what, in
her view, grants equal political treatment (Sen, [15]; Buchanan and Congleton, [16]).

3.1. An example: Perception's consistency in educational opportunity

Since *Brown vs. Board of Education* (1954) landmark decision that unanimously ruled racial
segregation in public schools unconstitutional, the debate on equality of educational opportunity
80 in the US has turned on the conditions for factual equalization (Bowles *et al.*, [17]; Shields *et al.*,
[18]). Here it suffices to highlight the importance that social (e.g., being born into a poor family)
and natural (e.g., being born with less talent) circumstances bear on the idea of equal opportunity in
education.

The philosophical literature that draws its inspiration from Rawls [19] claims that education
85 should grant equal chances to similarly talented and motivated individuals to access offices and
positions, irrespective of their social class background. Equalization is therefore limited to the
natural circumstances. Disparities in talents are the consequence of circumstances for which the
disadvantaged does not bear any responsibility that deserve compensation. However, alternative
egalitarian positions have also emerged. For example, Arneson [20] regards both social and natural
90 circumstances as equally arbitrary and worthy of redressing through some kind of compensation. Or
Sen [21], who concentrates on the agent's capabilities and prescribes to equalize the starting point
in the life's race by compensating for the social differences, given the distribution of talents.

Interestingly, Rawls and Sen's position can be framed, as many views over what ought to be

equalized and connected, with the consistency of the respondent's perceptions of inequality. Imagine
95 respondents who are framing their view about the path to *de facto* equal educational opportunity.
They weigh the merits of two policies in the pursuit of equalization that differ for their egalitarian
imprinting.

A possible policy prescribes to disconnect school funding from local property taxes.¹ Since
local property taxes are higher in richer districts, they introduce distortions in school funding that
100 favor students from better-off neighborhoods, no matter talents. A respondent might legitimately
favor such a policy to achieve equalization of the social circumstances in educational opportunity.
Alternatively, respondents may favor the pursuit of a policy whose prescription is to meet specified
educational thresholds that compensate for the natural circumstances only (for example, the *Individ-*
uals with Disabilities Education Act or the *Investing in Innovation Funds*). In this case, a respondent
105 would be more concerned with the students' distribution of talents because, if not compensated, the
instrumental value of education would not be achieved (education would not be able to serve a
constellation of private benefits such as autonomous decision making, good health, professional
self-fulfillment, participation to the community's political life, etc.).

Recall that the opinions that the respondents manifest reflect their general view of inequality
110 and, in particular, the importance that they attribute to the distinct dimensions (natural or social) of
the equalization process. If the respondents believe that all circumstances that affect inequality – for
example, genetic such as race and social such as family wealth – matter, then it is likely that their
general view of inequality supports consistency in the manifestation of the opinions, pushing the
value of the indicators homogeneously in the same direction.

115 On the contrary, if there are inconsistencies among dimensions of inequality because the respon-
dents attribute different importance to different dimensions - say the students' social circumstances
ought not to be equalized - then the value of the indicators are pulled in heterogeneous directions.
But then, consistency in the perception of inequality is semantically relevant because, by identify-
ing the existence of conflicts in the role that each dimension plays in the equalization process, it
120 sheds light on what, according to the respondents, deserves *equal consideration* (Sen, [15]). By this

¹The source of school funding is central to the US debate on the pursuit of *de facto* equalization of educational opportunity, at least since the Supreme Court's 5-4 decision in *San Antonio Independent School District v. Rodriguez*. The interested reader may find further information on the motivations and implications of the Court's decision in Sutton [22].

expression we mean what the respondents regard as important for the determination of inequality and, as such, warrants equalization. Consistency is therefore helpful to shed light on a fundamental question in the study of inequality, namely “equality of what?”. To put it differently, inconsistency reveals a political preference for a moderate egalitarian position and turns out to be politically informative to craft the prevailing view of *equal political treatment* or what, according to the respondents, would be non discriminatory governance (Buchanan and Congleton, [16]).

Our example lends further credibility to the literature’s claim that perceived inequality plays a political role (Kuhn, [6]; Cruces et al, [7]; Kerr, [23]; Gimpelson and Treisman, [3]).

3.2. Detecting consistency

If consistency is conceptually relevant, how can it be empirically analyzed? The assumption that we introduce in this paper recalls the idea of dominance. If a respondent’s opinions are determined by a perception of higher inequality than her peers in a dimension, she is also more likely to perceive a higher inequality in another dimension, leading to univocally different responses to the indicators. This assumption is introduced formally in the next section; here we want to emphasize its consequence on the assessment of perceived inequality.

Perceived inequality is not directly observable. What we observe is a series of manifest indicators Y that capture specific dimensions (or contexts) of perceived inequality in a given domain. In the literature the indicators are either combined or taken singularly to obtain a synthetic measure that captures how individuals perceive inequality (Brunori, [8]; Jasso, [24]). No matter how the synthetic measure is constructed, a reliable assessment requires an evaluation of how general individual perceptions are.

Given a domain of perceived inequality, if respondents reveal the same propensity in reporting a specific level across dimensions, perceptions are *context-invariant*. In this case, a given respondent manifests the same propensity of positively reporting perceived inequality through indicators across contexts. Therefore, observable indicators can be seen as a direct manifestation of the unobservable perceived inequality in a domain. In this case a synthetic measure can be used in the given domain, since any Y would quite decently capture the domain’s perceived inequality.

However, if the general perception is not context invariant, there is little commonality in how the respondent perceives inequality across dimensions. In this case, the general perception that a respondent has over inequality is *context-specific*. Using a single indicator or even lumping some

of them together may not correctly represent the underlying perceived inequality. A more appropriate strategy would suggest to use all the available indicators as each of them captures a different individual attitude towards perceived inequality.

4. The Model

155 In this section we introduce the formal definition of context invariance in the perception of inequality and propose a strategy to test it.

4.1. Context invariance: a definition

Let Y_{dij} denote the j -th response variable referred to the d -th domain of perceived inequality provided by individual i , with $j = 1, \dots, J_d$, $d = 1, \dots, D$ and $i = 1, \dots, N$. In our application 160 we consider $D = 2$ domains corresponding to perceived inequality in outcome and opportunity. The Y s are based on simple questions referring to a specific context of inequality in a domain, and the answers are framed on ordered categories $l = 1, \dots, l_j$. Suppose also that $\mathbf{Y} = (Y_1, \dots, Y_J)$ is the vector of observable indicators, while P_d represents the perceived inequality in a domain d (e.g., the individual latent perceived inequality of opportunity).²

165 However, P_d is not observable, thus the question is what can we learn about the distribution of $(\mathbf{Y}, P_d)$ when we observe only $\mathbf{Y}$? Let y_j indicate a potential realization of Y_j and with u and v different levels of perceived inequality with $u > v$. The hypothesis that perceptions of inequality are context invariant within a domain is described as follows:

Definition 1. (Domain Context Invariance): *Perceived inequality is domain context-invariant if for each Y_{jd} in a given domain d*

$$\Pr(Y_{jd} = y_{jd} \mid P_d = u) - \Pr(Y_{jd} = y_{jd} \mid P_d = v) > 0 \quad \forall u, v$$

In words, if perceived inequality is context-invariant, then taken two levels of perceived inequality, 170 the difference in probability of reporting Y_{jd} for any two given level of perceived inequality should be positive. This suggests that individuals who appear to perceive higher inequality than their peers

²To keep notation simple we suppress i and d from Y .

(since $u \neq v$) in one context are also more likely to perceive higher inequality in another context. Note that context invariance requires that the conditional distribution of Y be nondecreasing in each levels of P_d .

175 4.2. Empirical strategy

Given our definition of context invariance, we want to explore how to detect whether individual perceptions of inequality are general within a domain. Suppose that there is a set $Q_1, \dots, Q_K$ of context-related variables which affect the indicators Y after conditioning on observable individual characteristics $\mathbf{x}$. We assume that $Q_1, \dots, Q_K$ are *discrete*, with Q_k taking say l_k levels, $k =$
 180 $1, \dots, K$. This is a fairly innocuous assumption since any continuous variable can be, arbitrarily well, approximated by a discrete one and it implies that we can cross-classify $Q_1, \dots, Q_K$ into a single discrete variable that takes $l_1 \times \dots \times l_K$ values and identifies the set of heterogeneous “types”, who share similar levels of perceived inequality.

Let then $\mathcal{T} = \{1, 2, \dots, M\}$ be the set of different unobserved types, and let T be a random
 185 variable with support in $\mathcal{T}$. Since the label of the types is arbitrary, no order is assumed on T : for example, with two binary Q s indicating high (H) or low (L) perception of inequality in a specific context, we can have four different types: (L, L) , (L, H) , (H, L) , (H, H) . In this setting, different types are simply meant to capture heterogeneous behaviors in perceiving the Y s after conditioning on $\mathbf{x}$, without any assumption on the underlying structure. What matters here is that a sufficient
 190 number of types is used to capture residual heterogeneity between the Y s.

How can we test for the context invariance hypothesis in the presence of a finite set of unobservable types? For the time being, consider again the analysis conditional on $\mathbf{x}$, and note that from Definition 1 perceived inequality is context-invariant if the conditional distribution of Y is nondecreasing. Therefore

195 **Definition 2.** (Context Invariance with Types:) *Perceived inequality is context-invariant when there is an appropriate rearrangement of the types such that*

$$\begin{aligned} \Pr(Y_1 = y_1 \mid \mathbf{x}, T = 1) &\leq \dots \leq \Pr(Y_1 = y_1 \mid \mathbf{x}, T = M) \\ &\vdots \\ \Pr(Y_J = y_J \mid \mathbf{x}, T = 1) &\leq \dots \leq \Pr(Y_J = y_J \mid \mathbf{x}, T = M) \end{aligned} \tag{1}$$

with some inequality holding strictly.

Note that, if each context-related variable $Q_1, \dots, Q_K$ is *monotonic* in $Y_1, \dots, Y_K$, then we cannot exclude that perceived inequality is context dependent just because it is observationally equivalent to a unidimensional P_d .³ In other words, under the assumption that the indicators' probabilities are not monotone in each context-related variable, we can reject the context invariance hypothesis only when the inequalities in Definition 2 do not hold since, if each Q_k has not a monotone effect, then there must be at least two unobservables which pull in different directions the probabilities of how an individual reports the Y s. This observation suggests an empirical test for the context invariance of P_d when there are more than two types.

4.3. Implementation

Y s are usually categorical ordered indicators. Therefore the probabilities are expressed as $\Pr(Y_1 \geq y_1 \mid \mathbf{x}, t), \dots, \Pr(Y_J \geq y_J \mid \mathbf{x}, t)$, where y_j is a possible realization of Y_J . The empirical implementation of the test requires identification of these probabilities, and the possibility to estimate them in terms of the unobserved types, for each vector $\mathbf{x}$ describing the individual characteristics. The practical implementation of the test thus suggests the assumption that $\Pr(Y_1 \geq y_1 \mid \mathbf{x}, t), \dots, \Pr(Y_J \geq y_J \mid \mathbf{x}, t)$ are linearly additively separable in $\mathbf{x}$ and T , for example by assuming that:

$$\begin{aligned} \Pr(Y_1 \geq y_1 \mid \mathbf{x}, t) &= F(\alpha_1(t) + \mathbf{x}'\beta_1), \\ &\vdots \\ \Pr(Y_J \geq y_J \mid \mathbf{x}, t) &= F(\alpha_J(t) + \mathbf{x}'\beta_J) \end{aligned} \tag{2}$$

for some appropriate link function F (e.g., logit). Under this assumption, to analyze the hypothesis of context invariance we need to estimate the individual types effects $\alpha_1(t), \dots, \alpha_J(t)$ for $t \in \mathcal{T}$; appropriate equality and inequality restrictions on $\alpha_1(t), \dots, \alpha_J(t)$ can then be imposed to test for the domain context invariance.

To analyze how consistent are individual's perceptions of inequality, we need to estimate the parameters α 's and β 's in the nonlinear system (2), jointly with the membership probabilities $P(t)$,

³However, note that this would not necessarily be an issue since the Y s are jointly pointing to the same underlying variables.

220 $t \in \mathcal{T}$, namely the size of individual groups. This can be implemented using a semiparametric multiresponse finite mixture model. Detail on model estimation are reported in the Appendix. Within this framework, the null hypothesis that there is an underlying context invariant unobservable variable such that $Y_1, \dots, Y_J$ are monotonically dependent on it can be tested by setting a system of linear inequalities as explained, for example, in Bartolucci and Forcina [25]. In practice, this requires to test the hypothesis that:

$$\mathcal{H}_0 : \{ \alpha_j(T = 1) \leq \alpha_j(T = 2) \leq \dots \leq \alpha_j(T = M), \quad \forall j = 1, \dots, J \}. \quad (3)$$

Techniques of order restricted inference can be used to show that the Likelihood Ratio (LR) test statistic for the monotonicity null is asymptotically distributed as a mixture of chi-squared distributions.⁴

Finally, we need to determine the number of unobserved types M . The currently preferred 230 approach suggests the use of Bayesian Information Criterion (BIC) to guide this choice which, under certain conditions, is known to be consistent and helpful to prevent overparameterization.⁵ BIC is calculated from the maximized log-likelihood $L(\psi)$ by penalizing parameters' proliferation. The model with the lowest BIC is usually preferred.

To sum up, the procedure that we proposed consists of the following phases. First, we identify 235 a set of indicators for each domain under consideration. Then, within domains, we identify the number of unobserved types that display similar propensity to report a given level of response for each adopted indicator. These types represent non observed groups that share different levels of perceived inequality. Third, we investigate whether there is an order within groups in the propensity to report the level of inequality. If so, we can then conclude that there is evidence of consistency.

240 5. Data

To perform the consistency test, we use the ISSP module on Social Inequality collected in 2009. The data cover a wealth of information ranging from prerequisites for success in society, to attitudes towards equality, etc. Researchers who have studied preferences and subjective values on inequality

⁴See Gourieroux and Monfort [26] for a general exposition and Kodde and Palm [27] for bounds on the test distribution.

⁵See McLachlan and Peel [28] for a thorough introduction to finite mixture models and a review of existing criteria for the choice of the number of types.

and redistribution often refer to these data (see, e.g., Corneo and Grüner, [29]; Suhrcke, [30]; Kuhn,
245 [6]; Niehues, [13]; Brunori [8]; Gimpelson and Treisman, [3]).

Without loss of generality, we test for consistency in the United States of America only. Our data include 1,394 observations. Americans underestimate the level of inequality in their country (especially at the top-end of the distribution) and are less concerned than other nationals for reducing differentials at the bottom of the distribution. Such American exceptionalism has indeed been the
250 object of many studies (e.g., Alesina and Glaeser, [31]; Osberg and Smeding, [32]; Niehues, [13]). Also, our focus on the US allows to reduce the confounding cultural factors that affect perceptions of inequality.

In this paper we focus on two domains of perceived inequality: *Perceived Inequality of Outcome* and *Perceived Inequality of Opportunity*. The two domains allow us to test for consistency on
255 both a descriptive (outcome) and a normative (opportunity) interpretation of perceived inequality, reinforcing the test’s conceptual validity. The two domains are captured by multiple indicators which are described in Table 1.

Table 1: Indicators by domain

Domain of Perception	Indicators	Description
Inequality of Outcome	logdif	Perceived level of income differences among higher and lower professions
Inequality of Outcome	conflict	Conflicts: between people at the top of society and people at the bottom?
Inequality of Outcome	conflictr	Conflicts: between poor people and rich people?
Inequality of Outcome	conflictm	Conflicts: between management and workers?
Inequality of Opportunity	wfam	How important is coming from a wealthy family?
Inequality of Opportunity	prace	How important is a person’s race?
Inequality of Opportunity	pgender	How important is a person’s gender?
Inequality of Opportunity	pedu	How important is having well-educated parents?

In the pertinent ISSP Survey, most indicators in Table 1 range between 3 and 5 categories. Consider the first domain, perceived inequality of outcome. The variables *conflict*, *conflictr*, and
260 *conflictm* correspond to as many questions that survey the respondent’s opinion about the existence of conflicts among different social groups, respectively, people at the top of society and people at the bottom; poor people and rich people; management and workers. The more conflict is reported (the answers vary from “Very strong conflicts” to “No conflicts”), the more inequality we assume the respondent perceives. The last variable, *logdif*, captures individual opinions about the distribution
265 of income. As in Jasso [24], it is constructed from individual opinions on the earnings of specific professions. The question is: “About how much do you think a (profession) earns?”, and the professions are: doctor in general practice, chairman of a large national corporation, shop assistant, unskilled worker, and cabinet minister. We identify the highest and lowest paid profession and then

compute the logarithm of its ratio. We then split the individual estimated distribution in three tertiles
270 to create an ordered variable from the lowest to the highest level of that distribution.

The indicators relative to the domain “Inequality of Opportunity” include questions on how
important certain factors are for success in society: coming from a wealthy family (*wfam*), the level
of parent’s education (*pedu*), race (*prace*) and gender (*pgender*). The questions range from “not
important at all” to “essential” but the last one, *pwork*, is reverted since it corresponds to a question
275 about the role of effort and choice in determining achievement rather than circumstances beyond
control.

Covariates are included in the analysis to reduce the level of inconsistency related to observable
characteristics: gender, age (including the quadratic term), two dummies that proxy the level of
education, if the individual is married, if employed, and two dummies on the reported level of
280 income. The labels and descriptive statistics for the covariates are reported in Table 2.

6. Results

We present our results in five different steps so as to offer a comprehensive view over both the
technical and political challenges posed by the emergence of inconsistencies in the perception of
inequality.

285 6.1. Preliminary analysis

The first, preliminary step consists of a graphical exploration of the joint distribution of the
indicators without taking into account the role played by the covariates. It provides insights on the
level of heterogeneity among individual perceptions of inequality without implying the econometric
model.

290 Figure 1 plots the treemap for both the outcome and opportunity domain as well as each observed
configuration of the indicators’ responses. For example, in the domain of outcome, the top-left
rectangle (2 1 2 2) refers to the pattern of responses given by *conflictr*=2, *conflictw*=1, *conflictm*=2
and *logdif3n*=2. Similarly, in the domain of opportunity, the rectangle (3 3 0 0) seizes the responses
for *wfam*, *wpar*, *prace* and *psex* that display that particular pattern. Note also that in Figure 1 the
295 rectangle’s size matters as it reflects the share of individuals in the overall sample that display the
rectangle’s specific pattern of responses. Thus, a larger rectangle indicates that a larger share of

Table 2: Summary statistics

Covariates	Mean	Std. Dev.	Description
fem	0.543		1 = female, 0 otherwise
age	4.796	1.554	individual age
age ²	0.254	0.154	individual age squared
medqual	0.404		1 = intermediate level of education ("Above lowest qualification" or "Higher secondary completed"), 0 otherwise
highqual	0.560		1 = high level of education ("Above higher secondary level" or "University degree completed"), 0 otherwise
married	0.503		1 = married, 0 otherwise
employed	0.603		1 = employed (full time or part-time), 0 otherwise
inc2	0.339		1 = intermediate level of income (second tertile of country's level reported incomes), 0 otherwise
inc3	0.318		1 = upper level of income (last tertile of country's level reported incomes), 0 otherwise
Ind. of Outcome Domain	Mean	Std. Dev.	Description
conflictr = 1	0.374		Not very strong conflicts
2	0.443		Strong conflicts
3	0.143		Very strong conflicts
conflictw = 1	0.634		Not very strong conflicts
2	0.196		Strong conflicts
3	0.048		Very strong conflicts
conflictm = 1	0.421		Not very strong conflicts
2	0.449		Strong conflicts
3	0.102		Very strong conflicts
logdif3n = 1	0.33		Medium perception - second tertile
2	0.326		High perception - third tertile
Ind. of Opportunity Domain	Mean	Std. Dev.	Description
wfam = 1	0.260		Not very important
2	0.331		Fairly important
3	0.245		Very important
4	0.047		Essential
wpar = 1	0.108		Not very important
2	0.369		Fairly important
3	0.429		Very important
4	0.067		Essential
prace = 1	0.333		Not very important
2	0.182		Fairly important
3	0.089		Very important
4	0.009		Essential
psex = 1	0.372		Not very important
2	0.163		Fairly important
3	0.082		Very important
4	0.013		Essential

Ind. = indicator used by domain.

individuals in the sample reports that specific pattern of responses. Finally, the black to white scale that the rectangles display reflects the relative level of heterogeneity. The rectangle (2 1 2 2) is darker than the rectangle (1 1 1 1) because individual responses are more heterogeneous.

300 A glance at Figure 1 reveals the presence of substantial unconditional (to covariates) heterogeneity in the sample. Also, the relatively darker complexion of the opportunity domain reflects a greater degree of heterogeneity and makes it a more credible suspect domain in the search for inconsistency.

To refine our observations and to lend them a quantitative dimension, we measure the degree of individual agreement in responding to the same set of indicators. To these end we compute the
 305 kappa-statistics for each domain. In particular, these measures of agreement are equal to 6.5% and 8.2% for the inequality of outcome and opportunity domain respectively. We also compute intraclass correlation coefficients (ICC) to measure the consistency or homogeneity of indicators (Shrout and Fleiss, [33]). In particular, we measure both consistency-of-agreement ICC (CA-ICC) and absolute-agreement ICC (AA-ICC). Under consistency of agreement, the indicators' scores are considered
 310 consistent if the answer from any two individuals differ by a constant value for all indicators. This implies that individuals give the same ranking to all indicators. Under absolute agreement, these scores are considered in absolute agreement if the scores from all individuals match exactly. In the domain of inequality of outcome, the estimated CA-ICC and AA-ICC are equal to .17 and .19 respectively, indicating modest similarity between individual ratings. In the inequality of opportunity
 315 domain, we estimate that the consistency of agreement ratings is .42, based on the individual CA-ICC. On the other hand, the absolute agreement of ratings is lower, .32, as expected on the basis of AA-ICC.

In general, the preliminary analysis reveals a great deal of heterogeneity in the responses' patterns in both the opportunity and outcome domains. However, the analysis does not assess potential
 320 counterfactual effects due to the observable characteristics of the respondents. For such reason, we need to take into account the role of the covariates.

6.2. *Types and their view of inequality*

A relevant issue to address is the determination of the number of types, i.e., how many subgroups of individuals ought to be identified in each domain to capture the underlying heterogeneity in the
 325 perception of inequality. We then estimate the multiresponse finite mixture model under different number of latent classes M . Table 3 reports the maximized log-likelihood and model selection

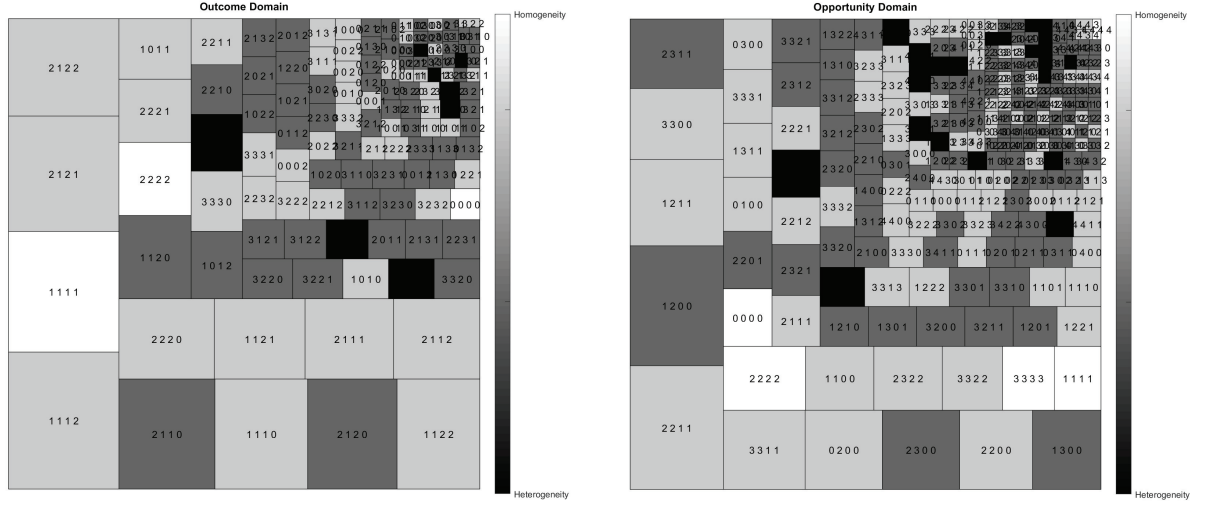


Figure 1: Observed joint distribution of indicators by domains

criteria for the inequality of outcome and opportunity domains. A glance at Panel A and B reveals that the models with the lowest informational criteria are 4 and 5 M respectively. The full set of parameters α , β and δ is reported in the Appendix.

M	Domain of Inequality of Outcome			Domain of Inequality of Outcome		
	Log-Lik.	#	BIC	Log-Lik.	#	BIC
2	-4888.7105	52	10146.836	-6303.6466	57	13014.524
3	-4829.6780	57	10064.292	-6226.3156	62	12895.584
4	-4788.8736	62	10018.204	-6161.8753	67	12802.426
5	-4778.5027	67	10032.983	-6134.4870	72	12783.371
6				-6119.2023	77	12788.524

M = number of latent class; Log-Lik = value of the maximized log likelihood;
 # number of estimated parameters; BIC = Bayesian Information Criterion.

Our estimates of the α parameters in equation 2 of online Appendix allow to calculate, by substitution, the class membership probabilities. These probabilities indicate the share of individuals from our sample that falls into each of the latent types (see Table 4). An immediate observation is that the size of these shares is quite heterogeneous, both within and across domains. The latter finding reinforces our intuition that qualitative differences between domains are understood and reported by respondents and that a proper assessment of perceived inequality must take into account the meaning that they assign to inequality.

The distribution of respondents within domains is no less revealing. The descriptive domain, inequality of outcome, displays some polarization with type 2 and 3 being the larger (more populated) groups, while in the domain inequality of opportunity there is a large group - type 4 - and a multitude of smaller (in size) groups. Therefore, perceptions of inequality seem to be relatively heterogeneous among Americans.

Table 4: Share of unobserved types

Domain	Type 1	Type 2	Type 3	Type 4	Type 5
Ineq. of Out.	0.05	0.43	0.49	0.03	-
Ineq. of Opp.	0.05	0.13	0.17	0.40	0.24

Estimated shares of types from the model with the lowest BIC for each domain.

Though informative, class membership probabilities are silent about who populates the different types. We can address this question using our estimates of $\hat{\alpha}$ in Equation 1 of online Appendix, in order to characterize the profiles of our types in terms of the mutual association of the observed indicators Y . These profiles are reported in Table 5 (the full list of estimated coefficients is given in Table 1 and 2, in the online Appendix) and represented in terms of their relationship to the indicators in each domain in Figure 2 and 3 where we depict the probability of perceiving (high) inequality in a specific context.

Types' patterns closer to the diamond's border report higher perceived inequality than closer to the center. It is interesting to note from Figure 2 that, for the domain of inequality of outcome, the patterns that types follow are ordered as they do not intersect. In particular, type 1 represents individuals with the highest perceived inequality (Type "Very high perceptions") in each reported variable, while type 4 with the lowest perceptions (Type "Very low perceptions") going through type 2 (Type "High perceptions") and 3 (Type "Moderate perceptions"). This suggests that, for a given type, respondents perceive inequality similarly across the board, offering evidence of consistency. A similar order in responses does not extend to the domain of inequality of opportunity. Figure 3 depicts quite a different pattern with type 1 (Type "Very high perceptions"), 3 (Type "high perceptions"), 4 (Type "Moderate perceptions"), 5 (Type "Low perceptions") showing an ordered pattern but type 2 (Type "Inconsistent") cuts across type 4 in the variables *wfam* and *wpar*.

Combining this information on type "labeling" with the distribution of individuals across groups (Table 4), it is interesting to note that in the descriptive domain, inequality of outcome, extreme

Table 5: Estimated average conditional probabilities

Indicators	Type 1	Type 2	Type 3	Type 4	Type 5
Panel A: Domain of Inequality of Outcome					
conflictr=1	0.9900	0.9963	0.9545	0.2413	-
conflictr=2	0.9973	0.8565	0.3370	0.0072	-
conflictr=3	0.9339	0.2026	0.0201	0.0003	-
conflictw=1	0.9900	0.9898	0.8060	0.0576	-
conflictw=2	0.9807	0.4151	0.0335	0.0004	-
conflictw=3	0.6793	0.0317	0.0014	0.0002	-
conflictm=1	0.9998	0.9962	0.9769	0.2569	-
conflictm=2	0.9846	0.7595	0.3512	0.0043	-
conflictm=3	0.7363	0.1270	0.0236	0.0002	-
logdif3n=1	0.4607	0.6281	0.6975	0.5366	-
logdif3n=2	0.1723	0.2959	0.3649	0.2221	-
Panel B: Domain of Inequality of Opportunity					
wfam=1	0.9954	0.9926	0.9956	0.9213	0.6586
wfam=2	0.963	0.9421	0.9643	0.5937	0.1989
wfam=3	0.7057	0.6029	0.7136	0.1241	0.0228
wfam=4	0.1353	0.0900	0.1398	0.0087	0.0014
wpar=1	0.9981	0.9953	0.9972	0.9694	0.9415
wpar=2	0.9889	0.9727	0.9833	0.8423	0.7315
wpar=3	0.9002	0.7837	0.8562	0.3564	0.2208
wpar=4	0.2374	0.1115	0.1709	0.0184	0.0094
prace=1	0.9976	0.2519	0.9581	0.8518	0.0758
prace=2	0.9649	0.0246	0.6191	0.3059	0.0057
prace=3	0.7897	0.0034	0.1980	0.0616	0.0007
prace=4	0.1336	0.0001	0.0091	0.0023	0.0002
psex=1	0.9986	0.2473	0.8969	0.8884	0.1279
psex=2	0.9755	0.0239	0.3702	0.3513	0.0103
psex=3	0.8611	0.0040	0.0979	0.0910	0.0016
psex=4	0.2291	0.0001	0.0050	0.0046	0.0001

Average conditional probabilities of reporting a specific value of an indicator Y_{jd} for each domain. Value 0 is the base category.

views over inequality of outcomes (society is very unequal - type 1 - or very equal - type 4) are smaller (in size), while bigger share of individuals report a mild perception of inequality (type 2 and 3). The normative domain, inequality of opportunity, reveals that Americans are not particularly disturbed by inequality as share of a type that reports high perceptions (e.g., type 1 and 2) are relatively low. Interestingly, the share - and so the probability of being - of a type that reports the lowest perception in the domain of opportunity is less than the probability of reporting a higher one, as the comparison between type 4 and 5 in the domain of opportunity illustrates.

In general, what we observe at work here is the role of equal consideration among Americans. In reporting their normative view of inequality, they disagree on the weight that ought to be attributed to the natural and social circumstances that contribute to inequality. For some Americans, in particular

for type 2 respondents, natural circumstances contribute little to inequality. For others, type 1, 3, 4 and 5, inequality is perceived similarly across contexts since both natural and social circumstances play a role in its determination. To put it differently, type 2 respondents perceive inequality as largely
 375 determined by family wealth and parents' education rather than natural circumstances. Since the former variables only are the building blocks of inequality, type 2 respondents are most likely to say that social circumstances are the components of inequality that warrant equal consideration and that, as such, ought to be leveled off.

Importantly, our analysis also unveils the importance of taking into account observable indi-
 380 vidual characteristics since the above findings point out to the presence of inconsistency only in the domain of opportunity while preliminary analysis suggested instead that heterogeneity was affecting both domains.

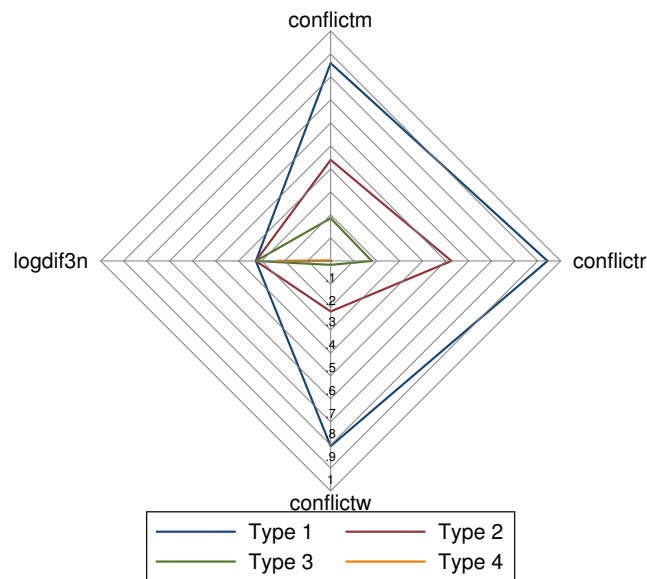


Figure 2: Context-related perceived inequality for the Outcome Domain

The evidence of inconsistency in the normative domain of perceived inequality is worth further enquiry, in three directions. First, since consistency reveals what the respondent thinks that de-
 385 serves equal consideration, we want to check for robustness. Second, to better assess the political consequences of the respondent's view of inequality, we introduce information about her politically

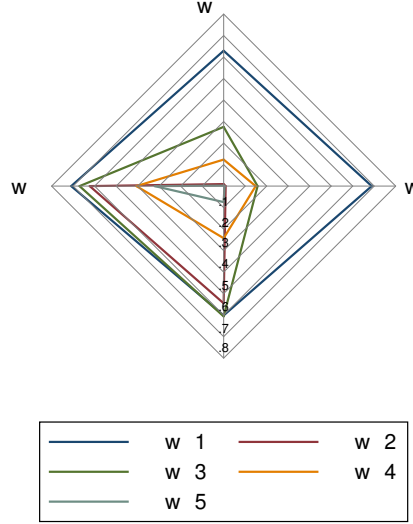


Figure 3: Context-related perceived inequality for the Opportunity Domain

relevant preferences. Finally we investigate the composition of inconsistency by looking at the relationship between some hypothetical individuals with similar characteristics and the unobserved types. We follow these three directions in the order as they have been introduced.

390 6.3. Testing for context invariance and robustness

To check whether this order of types truly reflects consistency, for robustness we test directly $\mathcal{H}_0$ and look at the predicted average scores of each type for the two domains of inequality under consideration. We are searching for confirmation that the pattern differences observed for the outcome and opportunity domains are not due to sample random variations but to context-specific perceptions of inequality. We therefore test the null hypothesis that perceived inequality is context invariant ($\mathcal{H}_0$). 395 The LR test statistic for the null of context invariance is equal to 0.2457 and 105.36 for the domain of inequality of outcome and opportunity, respectively. The conservative 1% critical values with 12 and 16 degrees of freedom (d.f.) are equal to 32.196 and 38.566, respectively (Kodde and Palm [27], p. 1246). Therefore, the hypothesis of context invariance cannot be rejected in the domain of 400 outcome, whereas it can in the domain of inequality of opportunity.

We now further investigate this inconsistency by computing the expected scores for each Y

(e.g., expected share of individuals reporting low $Y = 0, \dots, J$) by types and domains. Results are reported in Figure 4 and 5 and they describe a picture consistent with the average conditional probabilities. In the domain of outcome, types exhibit some kind of dominance as 1 and 4 sit above the average, reflecting the types' polarization we encountered. In the domain of opportunity, the predicted score of type 2 crosses those of type 4 revealing their different general perceptions of inequality and leading, ultimately, to the inconsistency. Note that types 2 have a very different view on inequality with respect to other types. For instance, comparing them with types 5, the two have similar perceptions on the role of natural circumstances, but then types 2 give much more importance to inequality due to family characteristics (wealth and education). Similarly, if we compare type 2 with types 1 and 3: they have similar perceptions when it comes to family characteristics but type 2 have a much lower perception of inequality on natural circumstances. Once again, the answer that type 2 gives to the question “equality of what?” contrasts, in this domain, with that given by the remaining types. Thus robustness confirms Americans' disagreement about the normative view of inequality and, for the purposes of this paper, the importance of a test of inconsistency in the analysis of perceived inequality.

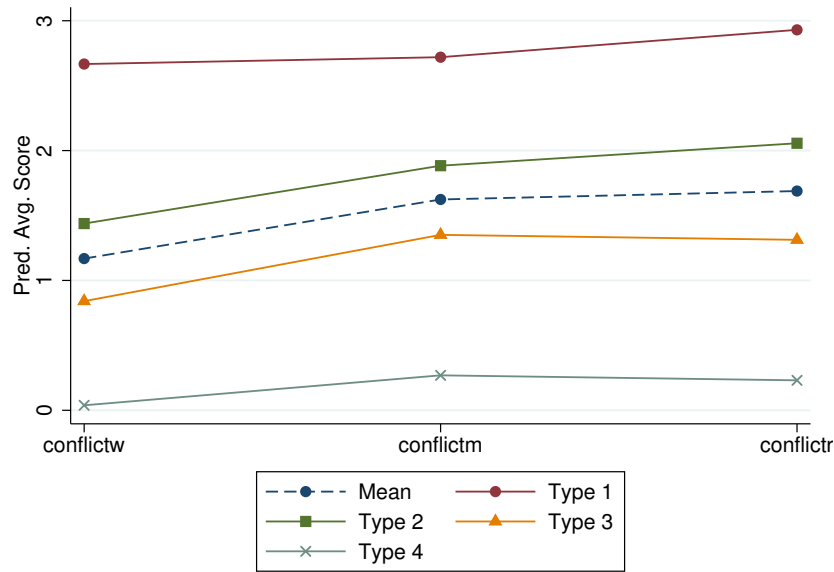


Figure 4: Predicted Average Scores for the Outcome Domain.

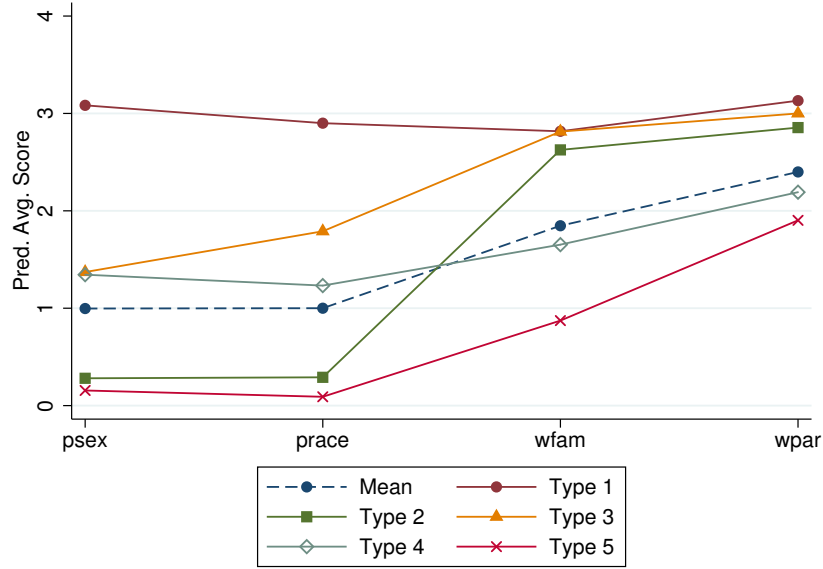


Figure 5: Predicted Average Scores for the Opportunity Domain.

For robustness we also test the hypothesis $\mathcal{H}_0$ using three different strategies. The first one relies on estimating the above model by setting a different categorization of *logdif3n* and the main covariates.⁶ This exercise should provide evidence that results are robust to equally defensible
420 alternative choices of variables' specification. Results are reported in Table 6. For each alternative categorization described in the first column of Table 6 the number of unobserved Types and the results from the LR test for the hypothesis of context invariance $\mathcal{H}_0$ do not differ from the main model for both domains. This indicates that results are robust to different alternative categorization of variables used in the main model.

⁶Note that *logdif3n* is the only indicator employed which is not directly asked as survey question. In particular we use *logdif4n* reflecting quartiles of the individual estimated distribution of the ratio between highest and lowest paid profession (see Section 5).

Table 6: Test for context invariance for different model specification

Model specification	Log-Lik. Unrestr. Model	Log-Lik. Restr. Model	LR test	#	d.f.	Rejection of Consistency
Panel A: Domain of Inequality of Outcome						
Income quartile	-4786.618	-4794.085	14.93	66	12	No
Continuous Income	-4791.210	-4798.914	15.41	58	12	No
Low med.qua., High med.qual., High qual.	-4781.960	-4788.954	13.99	66	12	No
Employed-full time, Employed-part time	-4787.707	-4795.188	14.96	66	12	No
Retired, Employed	-4788.121	-4795.54	14.84	66	12	No
Married, Divorced or separated	-4784.989	-4792.502	15.03	66	12	No
Logdif4n	-5135.851	-5144.851	18.00	63	12	No
Panel B: Domain of Inequality of Opportunity						
Income quartile	-6134.605	-6197.405	125.6	76	16	Yes
Continuous Income	-6137.126	-6175.177	76.1	68	16	Yes
Low med.qua., High med.qual., High qual.	-6133.901	-6185.84	103.88	76	16	Yes
Employed-full time, Employed-part time	-6134.182	-6196.421	124.48	76	16	Yes
Retired, Employed	-6133.213	-6171.379	76.33	76	16	Yes
Married, Divorced or separated	-6134.325	-6170.714	72.78	76	16	Yes

Estimated model under different specification of covariates are reported by rows. For each model with the lowest BIC, columns report the maximized log-likelihood of the unrestricted and restricted model, likelihood-ratio test statistic, number of estimated parameter and degrees of freedom, and whether the hypothesis of consistency can be rejected.

In the second robustness strategy we estimate the main model specification by adding additional covariates. The spirit of this exercise is to evaluate whether consistency still holds when additional controls are included among regressors to capture potential differences on Y_{jd} due to observable factors. The first column of Table 7 reports the set of covariates which are subsequently added to the previous set among regressors. The first set of additional covariates captures household characteristics: the number of residents in the household and a rural+suburb/urban binary indicator. The second set of additional covariates, which is added to the first one, includes individual party affiliation.⁷ Finally, the last set includes a binary variable indicating whether the respondent is religious, and a measure of religious intensity (e.g., frequency in the attendance of religious services). A glance at Table 7 reveals that even including additional (available) controls, the hypothesis of context invariance cannot be rejected in the domain of outcome, whereas it can in the domain of inequality of opportunity.

⁷The ISSP variable is divided in 4 categories: Left, center left; Right, conservative; Center, liberal. We consider two dummies for the first two affiliation.

Table 7: Test for context invariance for the extended model

Model specification	Log-Lik. Unrestr. Model	Log-Lik. Restr. Model	LR test	#	d.f.	Rejection of Consistency
Panel A: Domain of Inequality of Outcome						
Num. household resident, Urban	-4785.144	-4792.543	14.8	70	12	No
Right party , Left party	-4765.143	-4771.672	13.06	78	12	No
Religious, Religiosity	-4732.104	-4738.384	12.56	86	12	No
Panel B: Domain of Inequality of Opportunity						
Num. household resident, Urban	-6133.694	-6171.825	76.26	80	16	Yes
Right party , Left party	-6099.294	-6232.851	267.11	93	20	Yes
Religious, Religiosity	-6078.166	-6131.688	107.04	96	16	Yes

By rows estimated model with additional sets of covariates. For each model with the lowest BIC, columns report the maximized log-likelihood of the unrestricted and restricted model, likelihood-ratio test statistic, number of estimated parameter and degree of freedom, and whether the hypothesis of consistency can be rejected.

Finally, the last strategy we exploit to evaluate the robustness of testing $\mathcal{H}_0$ consists on resampling with replacement our data and conducting the entire estimation by testing process in each of these samples. Thus, whether context invariance holds or not can be evaluated by comparing the number of times $\mathcal{H}_0$ cannot be rejected for the given number of “identified” unobserved types. Again, the spirit of this robustness exercise is to evaluate $\mathcal{H}_0$ taking into account the uncertainty we have about the data generating process, the number of types and the real membership of individuals to types. Table 8 reports the percentage of times $\mathcal{H}_0$ is rejected in each synthetic sample by types. In particular, $\mathcal{H}_0$ is rejected in about 11 and 95 per cent of replications with four and five types respectively in the domain of inequality of outcome and opportunity. A similar picture holds when a smaller (larger) number of types are estimated. This provides additional support to the evidence that individual perceptions of inequality are consistent in the domain of inequality of outcome, not in the domain of opportunity.

Table 8: Replicated testing procedure of consistency

Number of latent types	Test result on $\mathcal{H}_0$	
	Consistency	Inconsistency
Panel A: Domain of Inequality of Outcome		
4	89.09	10.91
5	75.23	24.77
Panel B: Domain of Inequality of Opportunity		
4	3.00	97.00
5	4.55	95.45
6	6.96	93.04
Percentage of times $\mathcal{H}_0$ is rejected by estimated types in 250 randomly generated replications.		

6.4. Perceived inequality and political preferences

450 The empirical analysis conducted so far gives evidence that consistency allows to capture a relevant information about perceived inequality, namely which general views of inequality are reflected in the respondents' opinions and whether there are conflicts in society about these views. Consistency is therefore instrumental to the identification of what respondents think is relevant for the assessment of inequality or, to stick to our terminology, for equal consideration. However, consistency has more to offer to the study of perceived inequality, in particular to the assessment of its impact on political outcomes. As such an impact is gaining attention in the literature, we extend here our empirical analysis to bridge consistency and equal consideration, on the one hand, with equal political treatment, on the other.

460 Coherently with our previous empirical exercises, the key subject in the analysis is the types and the task is, once again, to evaluate how they differ in terms of perceived inequality. However, to explore how these differences affect equal political treatment we study the association between the respondent's predicted perceived inequality and a set of specific questions that capture her political preferences. This is done in two steps.

In the first step we recover the predicted types' membership probabilities at the individual level. 465 To assign each individuals to his (latent) perceived inequality type we use the estimated joint distribution of $(\mathbf{Y}, \mathbf{T})$ to obtain an estimate of the so called posterior type probabilities. For a given pattern of the observed indicators, say $\tilde{\mathbf{Y}}_i = \{Y_1 = \tilde{y}_1, \dots, Y_J = \tilde{y}_J\}$, and a given vector of individual characteristics $\mathbf{x}_i$ the probability of belonging to type t (posterior type membership probability) can

be obtained by applying the Bayes rule:

$$\Pr(T_i = t | \tilde{\mathbf{Y}}_i, \mathbf{x}_i) = \frac{\Pr(T_i = t, \tilde{\mathbf{Y}}_i | \mathbf{x}_i)}{\Pr(\tilde{\mathbf{Y}}_i | \mathbf{x}_i)} \quad (4)$$

470 For each individual, given his vector of observed circumstances ($\tilde{\mathbf{Y}}_i$), T posterior probabilities are estimated, one for the membership of each type. In the literature, there are different approaches to assign individuals to types (see for a review Vermunt and Magidson, [34]). The most common way consists of modal assignment; in practice each individual is assigned to the type for which his $\Pr(T = t | \tilde{\mathbf{Y}}_i)$ is the highest. However for some individuals, the highest and the second highest
475 posterior probabilities of belonging to two different types could be particularly close i.e., if $\Pr(T = t_i | \tilde{\mathbf{Y}}_i) \cong \Pr(T = m_i | \tilde{\mathbf{Y}}_i)$ with $m, t \in \mathcal{T}$ and $m \neq t$. In such a case modal assignment can be problematic. After computing all posterior type membership probabilities using equation (4), in our example, there are no ties between the highest and the second highest type membership probabilities: the mean value of the highest individual type membership probability in sample of
480 perceived inequality of opportunity (outcome) is of around 0.68 (0.70), with a standard deviation of 0.28 (0.25). It seems thus sensible to assign each individual to the type associated with the highest membership probability (modal assignment rule).

In the second step we estimate a standard ordered logit regression model to evaluate how types' membership probabilities are associated to four public policy relevant preferences. These preferences refer to the responsibility that the government ought to undertake on income distribution
485 issues and the role that respondents think it ought to perform. To measure these four preferences we use the answers given by respondents to as many questions available in the ISSP data set. The first question probes preferences on whether people with high incomes should pay a larger share of income taxes (*Taxes*). The selectable answers, ordered on a five level scale, go from “much smaller
490 share” to “much larger share”. The second question asks whether it is the responsibility of the government to reduce income differences (*Difinc*). The third question whether the government should *not* spend less on benefits for the poor (*Poor*), while the fourth question whether the government should provide a decent standard of living for the unemployed (*Unemp*). Answers for these three questions are framed on ordered categories, ranging from “strongly disagree” to “strongly agree”.

495 Let G_r^* be the underlying latent variable of $r = \{Taxes, Difinc, Unemp, Poor\}$, describing the underlying individual opinions in r . Thus, the regression model for each r in the two domains d

that we consider is given by:

$$G_r^* = \gamma_{rd} + \sum_{t=2}^M \phi_{rdt} T_{di}(t) + \psi_{rd} \mathbf{x}_i + \varepsilon_{rdi} \quad \text{with } d = 1, 2. \quad (5)$$

where M is the number of estimated latent types (4 and 5 in our application), T_{di} is a dummy variable for individual type membership, ε is the random disturbance, which is assumed to follow a standardized logistic distribution; while γ , ϕ and ψ are parameters to be estimated.

Table 9 reports the estimated Average Marginal Effect (AME) and confidence interval (CI) obtained by the estimated ϕ_{dt} using an ordered logit model. AMEs measure the relative change of the latent perceived inequality on the probability that a respondent reports “much larger share” in *Taxes*, “strongly agree” in *Difinc* and *Unemp* and *Poor*. Table 9 reveals that type 1 individuals, namely respondents who report high perceived inequality, have the largest AME, compared to all other types. This is true across domains (Panel A and B) and opinions r . Interestingly, the estimated AME tend to decrease monotonically across types for inequality of outcome, while the same does not hold for inequality of opportunity.

Table 9: Estimated average marginal effects								
Type	<i>Difinc</i>		<i>Unemp</i>		<i>Poor</i>		<i>Taxes</i>	
	AME	95% CI	AME	95% CI	AME	95% CI	AME	95% CI
Panel A: Domain of Inequality of Outcome								
1	0.179	(0.104-0.254)	0.297	(0.19-0.404)	0.261	(0.158-0.364)	0.264	(0.159-0.368)
2	0.092	(0.072-0.112)	0.101	(0.08-0.122)	0.156	(0.129-0.182)	0.197	(0.167-0.227)
3	0.056	(0.043-0.069)	0.067	(0.052-0.081)	0.114	(0.094-0.135)	0.159	(0.135-0.184)
4	0.049	(0.014-0.083)	0.048	(0.014-0.083)	0.056	(0.016-0.095)	0.109	(0.035-0.183)
Panel B: Domain of Inequality of Opportunity								
1	0.166	(0.095-0.237)	0.287	(0.185-0.388)	0.275	(0.171-0.378)	0.263	(0.163-0.363)
2	0.081	(0.055-0.107)	0.087	(0.06-0.114)	0.144	(0.103-0.184)	0.201	(0.151-0.252)
3	0.093	(0.066-0.119)	0.119	(0.088-0.151)	0.153	(0.116-0.190)	0.208	(0.161-0.254)
4	0.068	(0.052-0.084)	0.075	(0.059-0.092)	0.119	(0.097-0.141)	0.171	(0.145-0.198)
5	0.047	(0.034-0.060)	0.048	(0.035-0.061)	0.100	(0.077-0.123)	0.131	(0.104-0.159)

AME=Average Marginal Effects, CI=Confidence interval.

AME by estimated types for each model regression with dependent variable: *Taxes*, *Difinc*, *Unemp* and *Poor*.

To better appreciate these differences in terms of consistency, Figure 6 depicts the AMEs for both the inequality of outcome and opportunity domains. A quick glance reveals that consistency among types in outcome is reflected by the monotonically decreasing effect of perceived inequality types on *Taxes*, *Difinc*, *Unemp* and *Poor*. On the contrary, in the inequality of opportunity domain, differences

across types emerge as the AME first decreases from type 1 to type 2, then increases from type 2 to type 3 and eventually it falls back monotonically.⁸ Unsurprisingly the absence of monotonicity
515 in the AMEs' trends is related to the role played by types 2 who attribute equal consideration to the social determinants of inequality.

The different value that type 2 respondents attribute to the determinants of inequality is reflected in a structure of preferences over distributive policies inconsistent with the other types. Type 2 respondents, for example, display almost the same marginal effect of reporting "much larger share"
520 in *Taxes* on the general perception of inequality as type 3 respondents, despite the fact that the latter are individuals with a milder view of inequality in the American society. A reasonable interpretation of type 2 respondents' attitude toward taxing the rich is that they display an inelastic support for taxation (Ballard-Rosa et al., [35]; Kweon Kim, [36]) that is, however, not 'appropriate' to their relative view of general inequality. Similarly, type 2 respondents display a definitely higher and
525 not appropriate marginal effect of reporting "strongly agree" in *Unemp* on the general perception of inequality as type 3 respondents, and so on for the other political preferences measured in our empirical exercise.

Most likely it is the answer that type 2 respondents give to the question "Inequality of what?" that operates here. Since they attribute equal consideration to a specific and more restricted set
530 of determinants of inequality, the extent to which they are ready to provide political support to equalizing social policies is relatively lower than the support displayed by other types. Through their preferences, type 2 respondents lead then to a conflicting view of equal political treatment that confirms the importance of consistency in the analysis of the perception of inequality and its impact on political outcomes.

Finally, note that these results do not provide any evidence of a causal relationship between
535 preference for redistribution and perception of inequality, for several reasons. First, preference for redistribution can be interpreted in principle as an instantiation of perception of inequality. Second, both measures rely on subjective indicators: it is then difficult to capture the true effect of perception of inequality on preference for redistribution if the potential bias due to measuring errors (e.g.,
540 specific error components that are related to response styles, interviewees' understanding, etc.) are

⁸For robustness we also estimated (5) including the vector of predictor posterior probabilities rather than dummies *T*. This is done to avoid potential issues which can derive from modal assignment. Results do not change.

not fully taken into account. However, it is interesting to note that the same inconsistency that we observe in the order of types in the inequality of opportunity domain still emerges in the association between unobserved types and preference for redistribution.

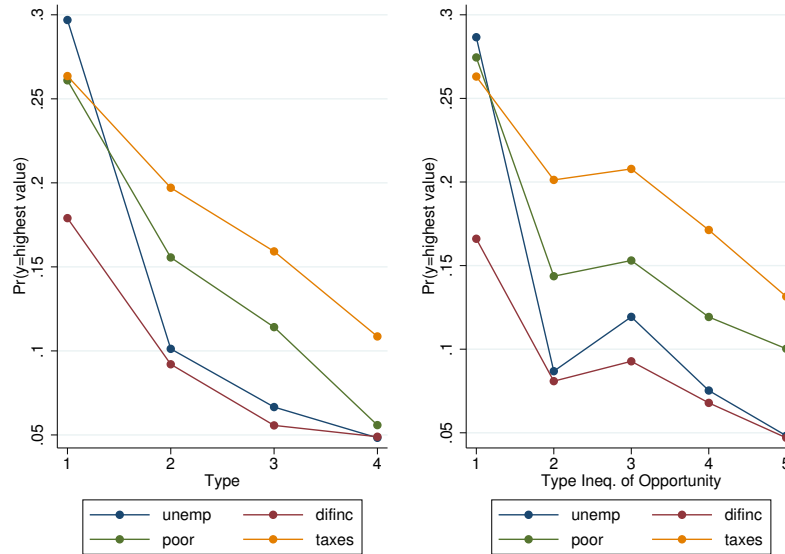


Figure 6: Predicted Average Marginal Effects.

6.5. Unpacking types' observable characteristics

545 Interestingly, one would benefit from knowing who have different views about inequality of outcome and of opportunity. Using modal assignment employed also in Table 5 to assign individuals to types through posterior probabilities, we compute the share of individuals belonging to hypothetical individuals with similar characteristics. Table 10 identifies hypothetical individuals with similar characteristics to unpack most likely types' characteristics in terms of observable covariates. The

550 hypothetical individuals are defined using certain profiles that are generally considered relevant in the literature of perceived inequality. We look thus not only at demographics but also at political ideology, place of residence and the intensity of religiosity.

For instance, considering the domain of inequality of outcome and individuals with the highest perceptions (Types 1), it emerges that being female, young and not highly educated has the highest

555 share with respect to other groups. Considering such standard demographics, our results resemble

the main findings in the literature: Jasso and Wegener [37], Alesina and Giuliano [38], and Cruces et al. [7] find that generally women, young people and less educated are more inequality adverse. Interestingly, when considering gender, intensity of religiosity and place of residence, we find that an hypothetical female, very religious, and not living in urban has again the highest share among
560 Type 1. Engelhardt and Wagener [39] and Gimpelson and Monusova [40] find a similar pattern.

Moving to perceptions of inequality of opportunity and to individuals with the highest perceptions (Types 1), an almost similar pattern emerges with respect to gender, age and education. Additionally, we find here that being man, employed and attached to leftist political parties has the highest share. Again, Alesina and Giuliano [38] find a similar result. Finally, a last comment for
565 Type 2, which gathers individuals who provide inconsistent answers. The picture is here more complex as no clear pattern emerges. Nevertheless, it seems that individuals not educated, not religious and living in urban area populate more frequently such type.

To better investigate the relationship between individual covariates and the inconsistency emerging from type 2 in the domain of inequality of opportunity, we also computed the unconditional odds
570 ratios of being of this type. In practice after having assigned each individual to a specific type, we set a dummy that takes a value of one if the respondent provides inconsistent opinions (namely she is of type 2) and then we computed the odds ratios reported in Table 11 for each covariates.

A glance at Table 11 reveals that only a small number of individual characteristics are statistically significant associated to the probability of being an inconsistent type. The odds of being
575 inconsistent for individuals with an intermediate level of education (*Medqual*) is 1.631 times that of an individual with a different education level, while the same odds is equal to 0.649 for those with higher education. This suggests that higher education is likely to be associated with more consistent view of perceived inequality in the same domain. An opposite story emerges looking at the odds ratio of living in an urban area. Also, right parties' voters are less likely to be inconsistent than all
580 other voters, though this effect is only marginally statistically significant.

Table 10: Profile of individual characteristics by types and domains

Profiles	Domain of Inequality of Outcome					Domain of Inequality of Outcome					
	Type 1 very high	Type 2 high	Type 3 moderate	Type 4 low	N	Type 1 very high	Type 2 inconsistent	Type 3 high	Type 4 moderate	Type 5 low	N
female, young, highly educated	5.03	49.69	44.65	0.63	159	1.79	8.93	9.52	47.62	32.14	168
female, young, not highly educated	8.14	33.72	56.98	1.16	86	9.38	16.67	11.46	35.42	27.08	96
man, young, highly educated	2.33	34.88	62.02	0.78	129	3.20	16.80	18.40	40.00	21.60	125
man, young, not highly educated	2.53	58.23	36.71	2.53	79	3.95	19.74	17.11	31.58	27.63	76
female, married, very rich	3.53	41.18	51.76	3.53	85	1.10	6.59	9.89	57.14	25.27	91
female, married, not very rich	5.09	41.67	50.93	2.31	216	5.71	11.84	9.39	43.67	29.39	245
man, married, very rich	2.52	35.85	56.60	5.03	159	1.89	13.84	13.21	46.54	24.53	159
man, married, not very rich	3.21	42.95	53.85	0.00	156	4.67	10.00	18.67	43.33	23.33	150
female, employed, left party	6.41	51.28	41.03	1.28	156	5.26	15.20	12.28	39.18	28.07	171
female, employed, not left party	5.31	34.78	57.00	2.90	207	5.48	7.76	14.16	46.58	26.03	219
man, employed, left party	5.08	51.69	40.68	2.54	118	8.40	6.72	16.81	46.22	21.85	119
man, employed, not left party	1.78	34.88	60.85	2.49	281	1.46	15.33	16.06	43.07	24.09	274
female, religious, not urban	6.14	43.42	47.81	2.63	228	4.17	7.50	14.17	44.58	29.58	240
female, not religious, urban	4.62	58.46	36.92	0.00	65	6.94	13.89	9.72	48.61	20.83	72
male, religious, not urban	2.33	44.19	51.63	1.86	215	5.99	11.52	20.74	38.71	23.04	227
male, not religious, urban	3.53	43.53	52.94	0.00	85	2.38	13.10	16.67	50.00	17.86	84
Predicted share of unobserved types by profile describing hypothetical individuals with specific characteristics.											

Table 11: Estimated odds ratios for inconsistency

	Odds ratio	95% CI
Fem	0.794	(0.567-1.113)
Age	0.855	(0.765-0.957)
Age ²	0.181	(0.055-0.598)
Medqual	1.631	(1.163-2.288)
Highqual	0.649	(0.463-0.910)
Married	0.827	(0.590-1.160)
Employed	0.935	(0.662-1.320)
Inc2	1.037	(0.729-1.477)
Inc3	0.952	(0.664-1.367)
Num. household resident	1.037	(0.916-1.175)
Religious	1.012	(0.646-1.587)
Religiosity	0.952	(0.897-1.009)
Urban	1.521	(1.076-2.151)
Right party	0.649	(0.422-0.998)
Left party	0.916	(0.642-1.307)

CI = Confidence interval. Estimated odds ratios of being of type 2 in the domain of inequality of opportunity.

7. Conclusion

In this paper we have presented an empirical analysis that tests for consistency in the perception of inequality. Inequality is a difficult and emotional concept on which consensus is hardly available. First, it can be framed within different, equally legitimate meanings that lead to different quantitative assessments and that have different political value. Though not directly related to testing for essential contestedness, our empirical exercise has indirectly confirmed the existence of alternative meanings of inequality that ought not be analytically compressed.

More importantly, our test gives evidence of inconsistencies in the respondent's perception of inequality, within domains. Such inconsistencies are associated to the determinants of inequality and, in particular, to what respondents consider acceptable in an unequal distribution. As we argued, selecting what is acceptable means choosing what ought to be given equal consideration or, in policy terms, what ought to be equalized. Consistency then yields a relevant information for both the understanding of perceived inequality and for the analysis of its political outcomes.

To reinforce the latter conclusion, we have tested how the manifested opinions and their underlying and unobserved perceived inequality are associated with some preferences for the role of government in social policy. The test has confirmed that political preferences respond to the presence of inconsistencies and that how respondents view inequality impacts on their political opinions and, ultimately, on their view of what equal political treatment consists of.

Finally, Americans display almost unique attitudes toward inequality, at least among Western
600 countries. Extending the analysis to international comparisons would therefore create a layer of
cultural complexity that moves the paper away from its main focus, namely the procedure for test-
ing consistency, and would also affect the neatness of our interpretation. However, international
comparisons would be a nice extension in the analysis of perceived inequality that is left to future
research.

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