Economic Inequality and Belief in Meritocracy in the United States Appendix

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Appendix A: Analysis of the Three NJL Meritocracy Measures

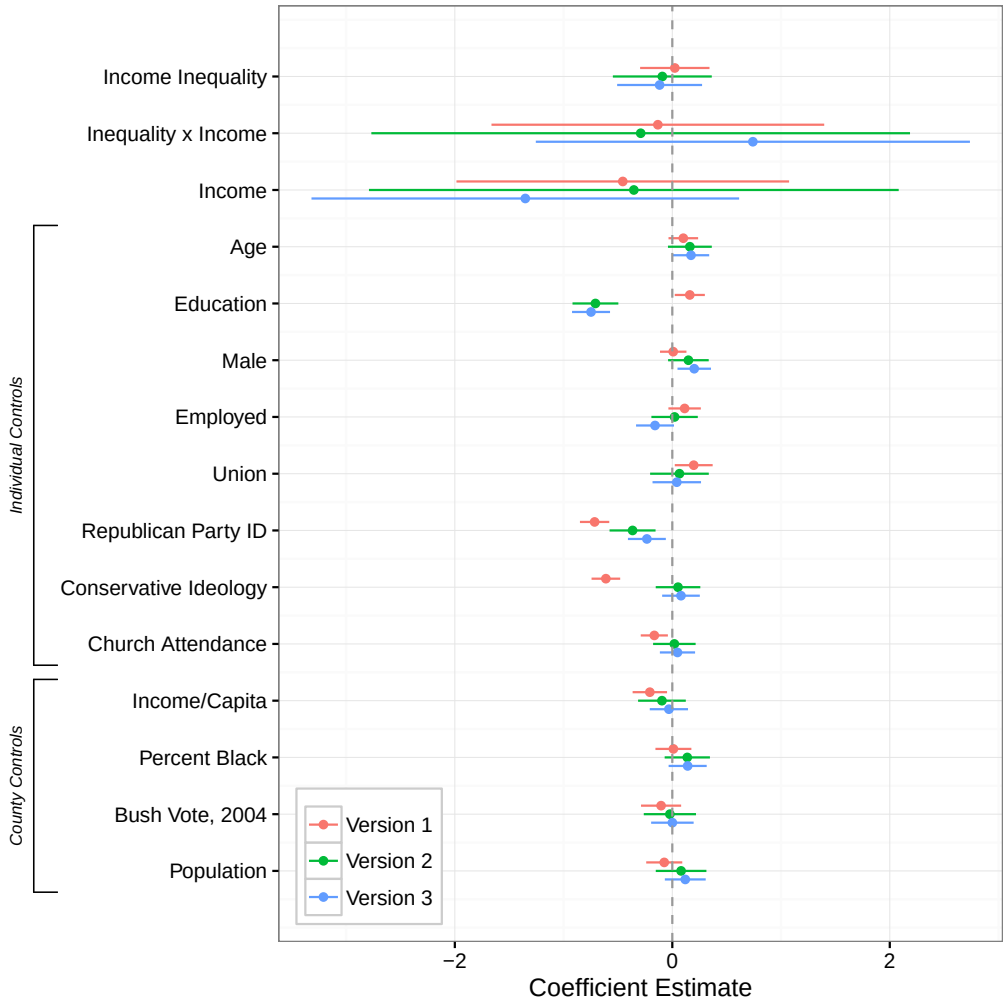
Beyond the evident lack of comparability displayed in Figure 2 of the main text, the three different measures that were pooled together in the analysis presented in NJL yield very different results when analyzed separately.

For these analyses, we could not rely on the NJL replication materials because they only include the data as analyzed in the article. The number of observations available for Version 2 of the dependent variable in this dataset is smaller than the number of parameters in the model, rendering the model impossible to estimate without incorporating additional information (for example, via priors in a Bayesian approach). The questions needed for Version 2 and for Version 3 were asked in both the 2007 and 2009 Pew surveys examined in NJL, however, so we are able to generate these variables from the original Pew datasets and pool them together to provide an adequate number of observations for analysis. We opt for a straightforward coding of all variables, with the categories of ordinal variables assigned consecutive integers beginning at 1, although because the results displayed below are rescaled to represent the estimated change in the logged odds of rejecting meritocracy for a change of two standard deviations in each predictor, this choice makes little difference. Our approach is otherwise identical to that of the core analysis of NJL: Table 1, Model 1.

Figure A1 displays the results obtained by separately analyzing each of the three versions of the dependent variable that were pooled together in the NJL analysis. It reveals considerable differences. More educated respondents, for example, are estimated in these data to be statistically significantly *more* likely to reject Measure 1 of meritocracy, but they are much *less* likely to reject Measures 2 and 3. Conversely, in these surveys, conservative ideology and church attendance are strongly and statistically significantly associated with

less rejection of meritocracy by Measure 1, but with Measures 2 and 3, these characteristics are estimated to have small positive associations that fail to reach statistical significance. It would appear that the results presented in NJL—strong negative associations of rejection of meritocracy with all three of these predictors—are an artifact generated by pooling the three different measures together.

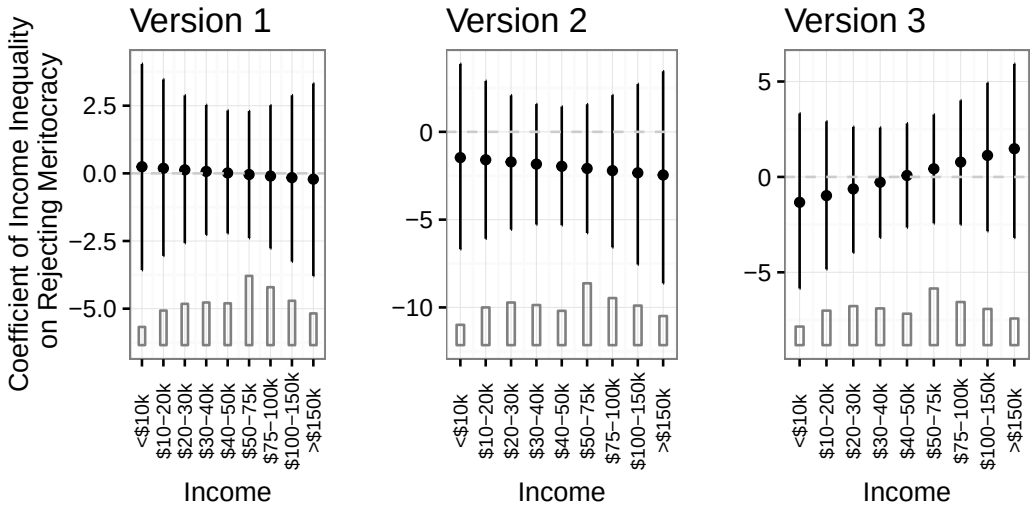
Figure A1: Analysis of Three Measures of Rejecting Meritocracy



Note: The dots represent estimated change in the logged odds of rejecting meritocracy for a change of two standard deviations in the independent variable; the whiskers represent the 95% confidence intervals of these estimates.

Returning to the focus of our inquiry, these results also confirm that there is no support for the conflict theory in the four surveys employed in NJL, regardless of how the dependent variable is measured. As shown in Figure A2, the conditional coefficients of income inequality do not reach statistical significance at any observed level of income for any of the three measures of meritocracy.

Figure A2: Estimated Coefficients of Income Inequality by Income, Three Measures



Source: Analyses presented in Figure A1. The dots represent estimated coefficient of income inequality within respondents' counties on their belief in meritocracy for all values of respondent family income; the whiskers represent the 95% confidence intervals of these estimates. In each panel, a histogram of the relative frequency of each value of respondent income appears below. For all three measures of the dependent variable, none of estimates reach statistical significance. There is no evidence in support of the conflict theory in the NJL data.

Appendix B: The Unit of Local Context and Additional Controls

Objective levels of economic mobility are an additional control variable that has thus far been left out of the discussion of the causes of meritocratic attitudes, but it is, of course, directly implicated. Less obvious, perhaps, is that because economic mobility tends to decline with rising inequality (see, e.g., Andrews and Leigh 2009), it provides a cognitive explanation for any relationship between inequality and beliefs in meritocracy that may challenge both of the theories described in the text. Rather than evincing a greater psychological need to protect self-esteem in the face of personal deficiencies as the conflict theory asserts (see, e.g., Newman, Johnston, and Lown 2015, 329) or the more complete cultural domination of the well-off as the relative power theory maintains (see, e.g., Solt 2012, 704), beliefs in meritocracy in more unequal contexts may instead simply reflect a correct recognition of the greater difficulty of advancing in a more sharply stratified society. If this is true, adding economic mobility to the analysis will yield a strong and statistically significant negative coefficient for that variable as well as a much smaller estimate for income inequality.

To measure economic mobility, we use Chetty et al.'s (2014, 1554) data on relative intergenerational mobility, which provides the best available information of the extent to which "a person's chances of success depend little on his or her family background." It is measured as the relationship between parents' rank in the national income distribution when their children were in their late teens and the rank of those children when they are approximately

age 30. The median respondent lives in a commuting zone (CZ, an aggregation of counties with economic linkages and the unit of local context employed by Chetty et al. (2014)) with a score of .34 on this variable, that is, a 10 percentile increase in parents' incomes is associated with only a 3.4 percentile increase in childrens' incomes. Economic mobility ranges from .07 to .51 in this dataset.

The extent to which people are segregated by income in a locality may also be thought to affect the relationships tested here. Greater residential segregation by income is an well-known result of higher income inequality, with the higher income households increasingly moving away from those with lower incomes and poorer households being increasingly unable to afford to live in those neighborhoods considered most desirable by richer ones. The Chetty et al. (2014) data include three measures of income segregation: overall segregation, the segregation of poverty, and the segregation of affluence. We present our analysis using overall income segregation; either of the other two measures yields nearly identical results.

The shift to commuting zones rather than counties as the unit of local context necessitates a change in the measure of income inequality. For these analyses, we use the Gini coefficient of the distribution of total family income within each CZ for the years 1996 to 2000 as calculated by Chetty et al. (2014) from the IRS Databank, which provides de-identified income and location information for all individuals living in the United States who appear on any tax form. Like the ACS data used in the text, this measure is not ideal. It too employs a welfare definition of income after government transfers but before taxes and so does not include the redistributive effects of the tax code. Further, it examines differences in incomes only across families, which means those without children are excluded. It is based on tax records, so it suffers from potential underreporting, particularly among those with very high incomes, though because the topcode for incomes is $10 million dollars, the downward bias is likely smaller than that found in similar Census data which is topcoded at considerably lower amounts. Finally, it measures inequality about a decade before the Pew survey; income distributions change only quite slowly over time, but nevertheless one might wish it were more temporally proximate. Despite these shortcomings, it remains the best data available on income inequality within commuting zones.

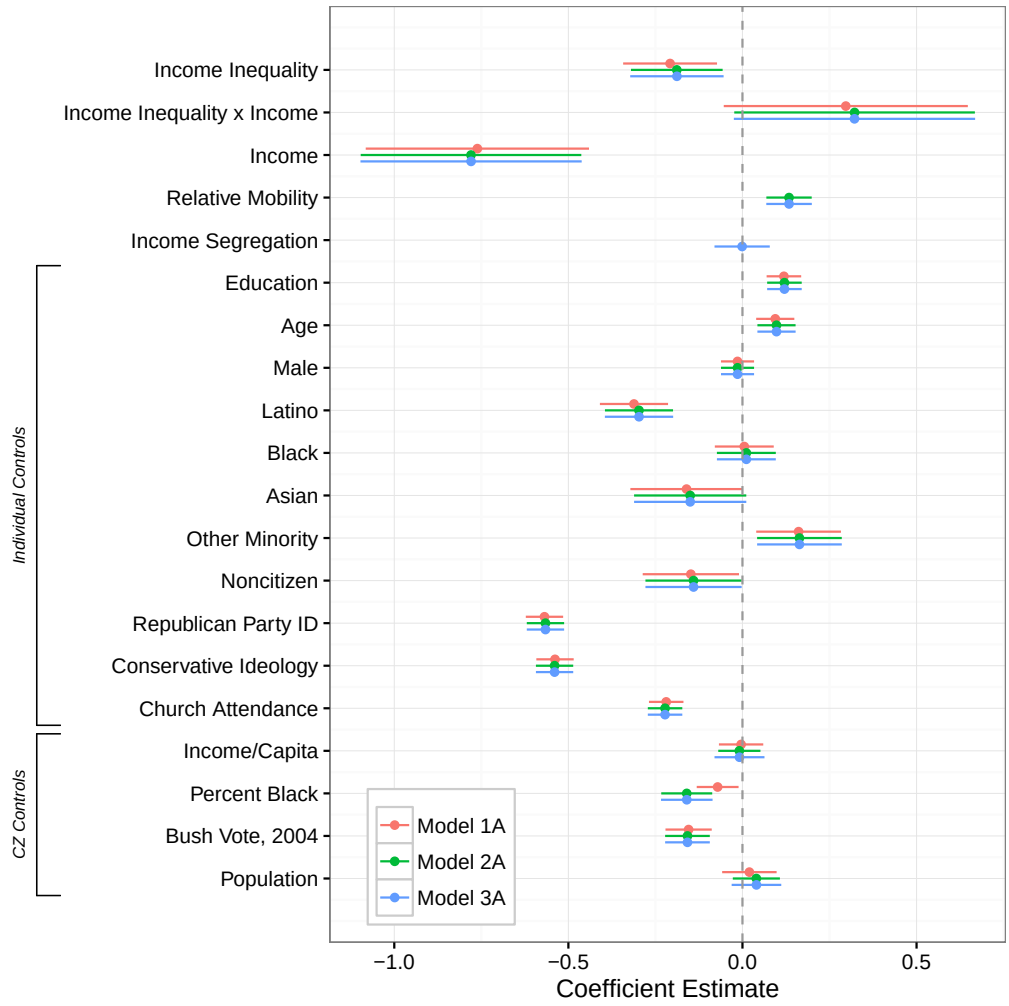
Model 1A replicates the analysis presented in the main text, but uses CZs as the unit of local context. Model 2A adds relative mobility to test the cognitive theory of inequality and meritocracy. Model 3A further adds income segregation. The results for these three models are presented in Figure A3.

Despite the change in the unit of local context from county to commuting zone, the results for Model 1A are substantively identical to those displayed in Figure 3 of the main text. Model 2A, which adds relative mobility, lends no support to cognitive hypothesis suggested above: it is those living in context of *greater* relative mobility who are more likely to reject meritocracy, and the results regarding the effect of income inequality are essentially unchanged. Income segregation has no discernible effect on meritocratic beliefs in the results for Model 3A.

Despite the change in the unit of local context and the addition of these control variables, the conclusions reached in the text are still supported. In all three specifications, the estimated coefficient for income inequality on rejection of meritocracy is negative and statistically significant for at least all of those with income below $50,000, which corresponds to the bottom half of the sample. Lower-income people in local contexts with greater income

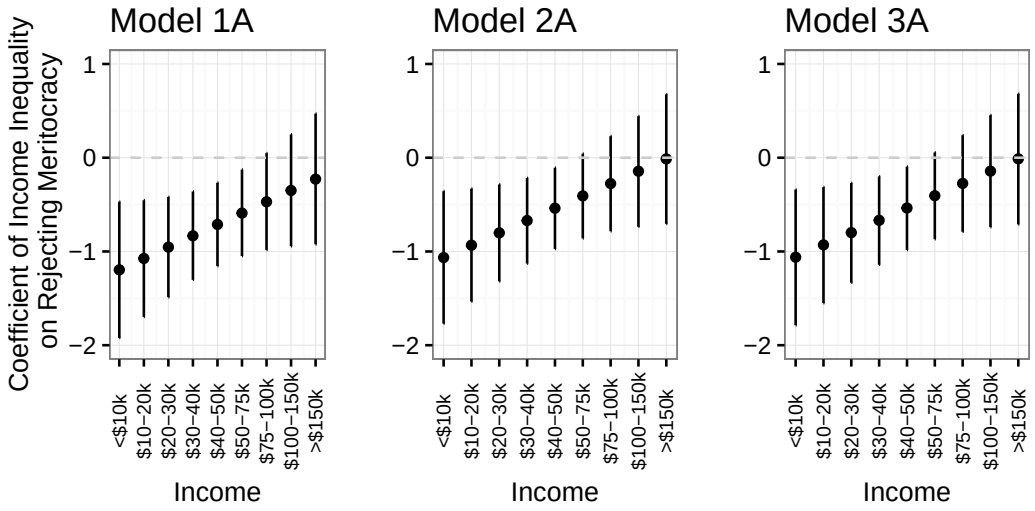
inequality are less likely to reject meritocracy than those in more equal settings, supporting the relative power theory.

Figure A3: Predicting Rejection of Meritocracy Controlling for Relative Mobility



Note: The dots represent estimated change in the logged odds of rejecting meritocracy for a change of two standard deviations in the independent variable; the whiskers represent the 95% confidence intervals of these estimates.

Figure A4: Estimated Coefficients of Income Inequality by Income on Rejection of Meritocracy, Controlling for Relative Mobility



Source: Analyses presented in Figure A3. The dots represent estimated coefficient of income inequality within respondents' commuting zones on their belief in meritocracy for all values of respondent family income; the whiskers represent the 95% confidence intervals of these estimates. In all three models, these estimates are negative—indicating a lower probability of rejecting meritocracy—and statistically significant for those with lower incomes, while the coefficients for those with higher incomes are not distinguishable from zero. The conclusions reached in the text are still supported even when controlling for relative mobility and income segregation.

References

Andrews, Dan, and Andrew Leigh. 2009. "More Inequality, Less Social Mobility." *Applied Economics Letters* 16(15):1489–1492.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez. 2014. "Where Is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." *Quarterly Journal of Economics* 129(4):1553–1623.

Newman, Benjamin J., Christopher D. Johnston, and Patrick L. Lown. 2015. "False Consciousness or Class Awareness? Local Income Inequality, Personal Economic Position, and Belief in American Meritocracy." *American Journal of Political Science* 59(2):326–340.

Solt, Frederick. 2012. "The Social Origins of Authoritarianism." *Political Research Quarterly* 65(4):703–713.