

Does intelligence have nonlinear effects on political opinions?

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Abstract

We sought to study intelligence's relationship to political opinions with particular interest in nonlinear associations. We surveyed 1,003 American adults using Prolific, where we measured English vocabulary ability, as well as 26 political opinions. We found that intelligence has detectable linear associations with most political opinions (21 of 26). Using splines, we found evidence of nonlinear effects on both individual opinions (15 of 26) and a general conservatism score. Specifically, the association between intelligence and conservatism was mainly negative ($\beta = -0.22$), but became null or positive in the right tail with a change point around 120 IQ.

Keywords: intelligence, IQ, cognitive ability, political ideology, multivariate adaptive regression splines, nonlinear

1 Introduction

There is a long standing interest in intelligence's relationship with political opinions (Carl, 2014, 2015a; Jedinger & Burger, 2021; Kirkegaard, 2022; Leeson et al., 2012; Onraet et al., 2015; Rindermann et al., 2012). In general, it has been found that measures of social conservatism show negative relationships to intelligence, while measures of free market support (economic liberalism) tend to show null to positive relationships. In terms of party support in many-party systems, generally populist parties attract voters of below average intelligence. Generally, differences between major parties' voters' intelligence are quite small (Ludeke & Rasmussen, 2018). Most studies were done in the USA, and there is enough data e.g. from the General Social Survey (GSS) or the American National Election Studies (ANES) to study changes in the associations over time. There has been multiple changes over time. Republican voters used to be on average slightly more intelligent, but they have lost this advantage recently with the rise of more populist fraction of the party.

A main limitation of the GSS and ANES based studies is that they employ only a weak measure of intelligence, a 10-item vocabulary test (Wordsum) (Malhotra et al., 2007). This test has quite limited reliability and poor ability to discriminate among subjects who are not of average intelligence. Specifically, the ceiling is about 120 IQ, so any changes in intelligence's relationship to other variables beyond that point (about 90th centile) are not possible to study using this test. This limits the ability to find nonlinear associations if such exist in the right tail.

In the present study, we sought to re-evaluate the relationship between intelligence and political opinions using a longer test with much better reliability in the tails, including the right tail.

2 Data

We used data from 2 surveys. The first ($n = 499$) was part of a larger study and we reused part of it here. After the analysis of this survey, we realized statistical power was too low for some analyses, so we carried out a replication survey ($n = 504$). The data were then combined into a single dataset.

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2.1 *The first survey*

We used data from an online survey of 499 American adults. These were recruited to participate in a survey using the Prolific platform (<https://www.prolific.com/>), by way of the “representative sample” method called “United States of America” which gives a balanced sample for “Sex, Age, Ethnicity (Simplified US Census)”. The resulting sample was approximately representative of adult American citizens aged 19-85 in terms of age, sex, and ethnicity. 52 % of the subjects were female. The average age was 46 with a range from 19 to 83 and a standard deviation of 16. Of the subjects, 72 % were White, 13 % were Black, 4 % were East Asian, but only 6 % were Hispanic (in any combination). The remaining part was composed of other smaller groups or subjects who chosen multiple ethnic categories (e.g. South Asians were 1 %, White Jews were 1 %).

We sought to measure a wide variety of political opinions. To this end, we constructed a set of 26 questions all of which were rated by subjects on a 5-point Likert-like scale from “Strongly agree” to “Strongly disagree”.

To measure intelligence, we included a newly developed, public use English vocabulary test (Kirkegaard et al., n.d.). Our survey formed the basis of its standardization sample. The vocabulary test included 232 items in total, some of which were given in a follow-up survey to reduce the survey length. The test was scored using item response theory (IRT) based on the 2-parameter logistic model. This was done using the **mirt** package (Chalmers et al., 2020). The resulting scores were normed to the White subset after age adjustments.¹

The survey had 4 attention check questions and subjects were dropped if they failed any of them (8 cases). 2 subjects managed to pass attention checks but complete the survey in less than 5 minutes, and these were also dropped. The final sample size for analysis was thus 487.

2.2 *The second survey*

The second survey was intended as a replication of the first using only the necessary variables. For this survey, we used the representative method of “Political affiliation” which gives a balanced sample for “Sex, Age, Political Affiliation”.² As the original vocabulary test was too long, we used the optimally chosen 50-item abbreviation developed from this (Kirkegaard et al., n.d.). The scoring norms from the first study were used to score the second survey. The reliability of vocabulary score was .94 in both the replication and the original, Figure S10 shows the reliability functions. Figure S4 shows the distributions of vocabulary IQ. Figure S6 shows the reliability functions. The same 26 political questions were reused. By mistake, a wrong set of ethnicity questions were used in the replication that were not identical to the first set.³ In practice, this had little effect, however, because most groups were too small to be used for modeling and were combined into an “other” category. The survey had 2 attention check questions and subjects were dropped if they failed any of them (33 cases). The final sample size was thus 471.

The combined sample thus had a sample size of 958.

3 Results

3.1 *Linear Effects of Intelligence*

To examine whether intelligence in general had at least a linear effect on political opinions, we fit regression models for each opinion separately. Figure 1 shows the linear, standardized effect of intelligence.

Of the 26 opinions, intelligence had a detectable effect ($p < .05$) on 21 (81 %) of them, net of demographics (age, sex, ethnicity). Using Bonferroni correction for multiple testing, there were 15 models with detectable effects (58 %). Some of these effects were considerable, e.g., the negative effect on agreeing that Christianity should be the state religion ($\beta = -0.37$). Table S1 provides the summary statistics for all models.

¹ We removed both the effect of age on the central tendency and on the dispersion.

² We replicated this finding. The conservatism score for the second sample was 0.35 d lower in conservatism, see Figure S5. However, both samples seemed to be left-leaning, as the conservative tail was longer.

³ These were: Asian, American Indian (Amerindian), White, Jewish, Black, Hispanic, mixed, Pacific Islander, and other race.

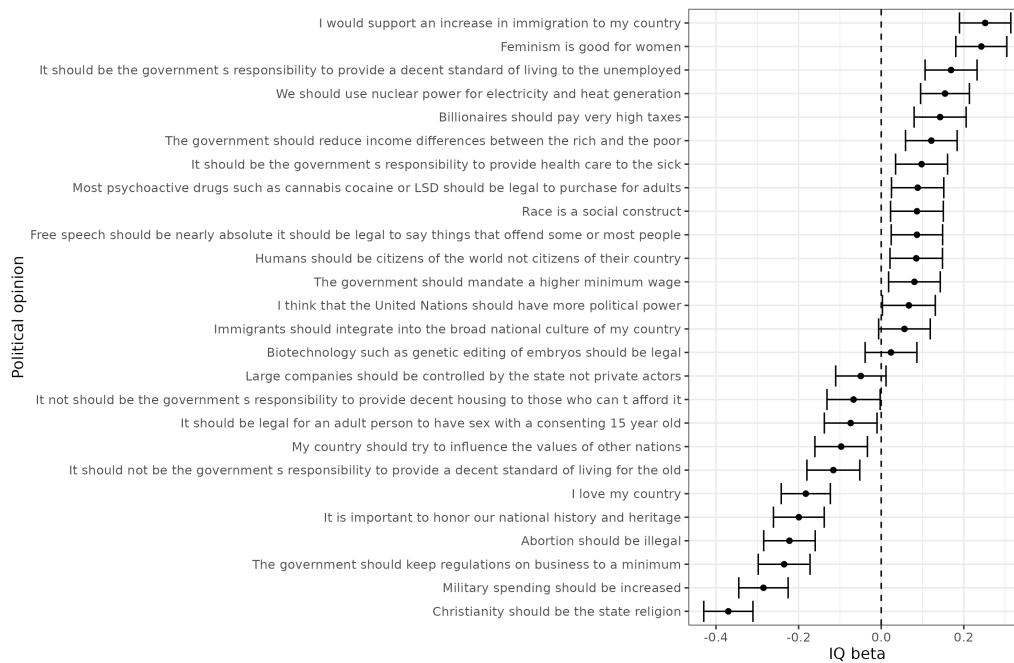


Figure 1: Linear effect of intelligence on political opinions. Results from separate regression models with controls for age, sex, and ethnicities. Error bars show 95 % confidence intervals.

3.2 Nonlinear Effects of Intelligence Using Natural Splines

To detect possible nonlinear effects, we refit the same regression models using natural spline functions with 3, 4, or 5 knots. We used model likelihood ratio comparisons to determine the optimal number of spline knots and whether splines were necessary in the first place. This was done using the **rms** package and the `rms()` function (Harrell, 2024). The model comparisons showed that 4 spline knots were the best overall choice for this dataset, with 15 of the 26 (58 %) models showing evidence ($p < .05$) of nonlinear effects (Figure S1 provides additional information about the pattern). After Bonferroni correction, 5 models (19 %) showed detectable nonlinear effects.

The 9 models with the strongest evidence are shown in Figure 2 (maximum p value = 0.0031; Figures S7 and S8 show the remaining models). These plots are based on the model predictions holding covariates constant at their mean or modal values. This was accomplished using the **ggeffects** package and the `ggpredict()` function (Lüdtke, 2018).

The shape of intelligence's association with political opinions varied. Some showed a diminishing returns pattern (e.g., agreeing that Christianity should be the state religion showed approximately no association after 110 IQ), while others showed apparently non-monotonic patterns (e.g., agreeing that the government should control large companies showed a U-shaped pattern).

3.3 General Conservatism

Next, we analyzed the relationship between intelligence and overall conservatism, scored as the first factor of a factor analysis of the 26 opinions. This analysis was conducted using the **psych** package (Revelle, 2020). This factor accounted for 27 % of the variance ($\alpha = .88$, $\omega_{\text{hierarchical}} = .60$).

Positive loadings corresponded to more conservative opinions, while negative loadings corresponded to left-wing or socialist opinions. Figure 3 shows the factor loadings.

The pattern of loadings was generally sensible. Opposition to government regulations and legalized abortion had strong positive loadings, as did love for one's country. On the other hand, support for increasing the minimum wage and support for income redistribution policies had strong negative loadings.

To examine the effects of intelligence on the conservatism score, we fit the same spline models as used above. Likewise, we carried out model comparisons to determine the best number of splines. This was done by

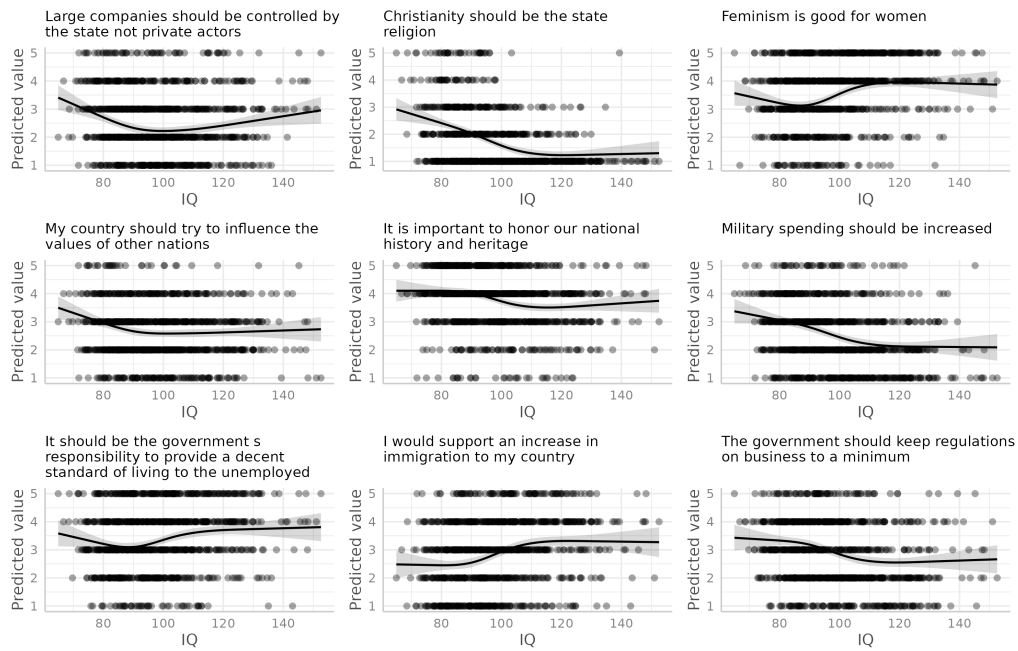


Figure 2: Nonlinear effects of intelligence on specific political opinions. Scatterplots of the 9 models with strongest evidence of nonlinearity. Error bars are 95 % confidence intervals. Models include controls for age, sex, and ethnicity.

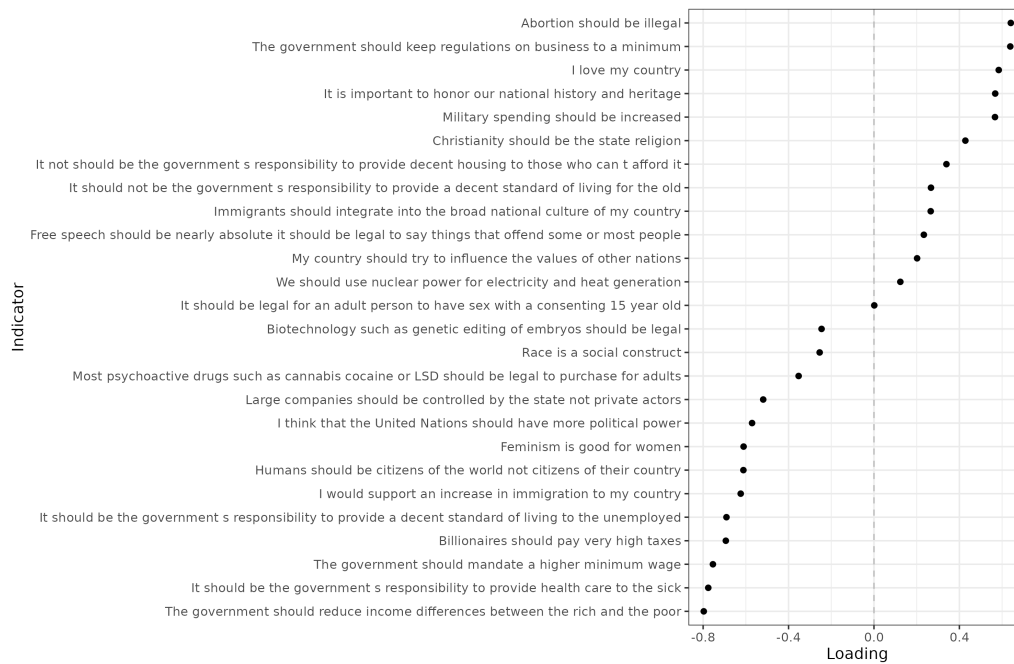


Figure 3: Factor loadings of political opinions.

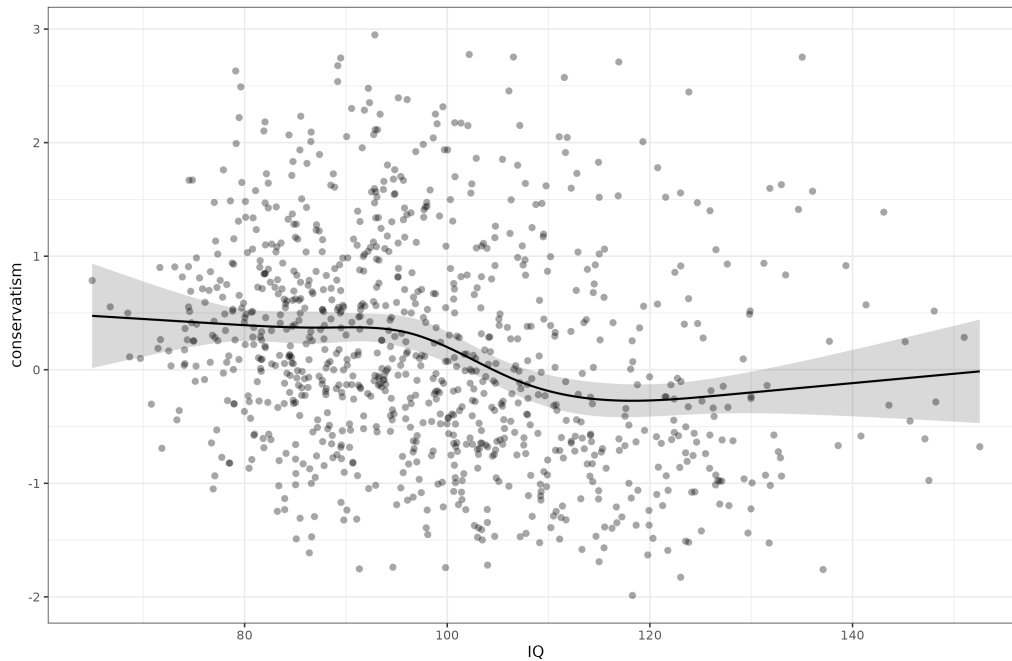


Figure 4: Model predictions for predicting conservatism from intelligence based on an ordinary least squares model with a natural spline for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

comparing the spline models to the linear model and with each other. In this case, 5 knots appeared to be optimal based on both approaches (linear vs. 4 knots, $p = 0.0012$; linear vs. 5 knots, $p = 0.0008$; 4 vs. 5 knots, $p = 0.07$). Table 1 shows the resulting models.

Table 1: Models for predicting conservativeness. Numerical variables were standardized. Spline terms omitted. Varies in parentheses are standard errors and p values. * = $p < .01$, ** = $p < .005$, *** = $p < .001$.

Predictor	Model	
	<i>Linear</i>	<i>Spline, 5 knots</i>
Intercept	0.14 (0.048, 0.003**)	0.35 (0.234, 0.132)
IQ	-0.22 (0.030, <0.001***)	(nonlinear)
sex = Female	-0.24 (0.060, <0.001***)	-0.24 (0.060, <0.001***)
age	0.22 (0.031, <0.001***)	0.24 (0.031, <0.001***)
asian	-0.19 (0.202, 0.358)	-0.18 (0.201, 0.37)
black	-0.39 (0.103, <0.001***)	-0.37 (0.104, <0.001***)
east_asian	0.17 (0.218, 0.442)	0.18 (0.217, 0.399)
hispanic	0.14 (0.170, 0.412)	0.14 (0.169, 0.419)
white, hispanic	-0.24 (0.216, 0.27)	-0.24 (0.215, 0.27)
white, jewish	0.31 (0.245, 0.204)	0.33 (0.244, 0.171)
Other	-0.04 (0.116, 0.737)	-0.04 (0.115, 0.752)
R ² adj.	0.118	0.13
N	1003	1003

The linear model showed a negative relationship between intelligence and conservatism ($\beta = -0.22$). The other associations were also roughly as expected, with women being less conservative than men ($\beta = -0.24$), older people being more conservative ($\beta = 0.24$), and Blacks being less conservative ($\beta = -0.37$).

Since spline terms are not easily interpretable based on regression coefficients (omitted above), we plotted the model predictors. These are shown in Figure 4 (Figures S2, S3, and S9 show additional scatterplots).

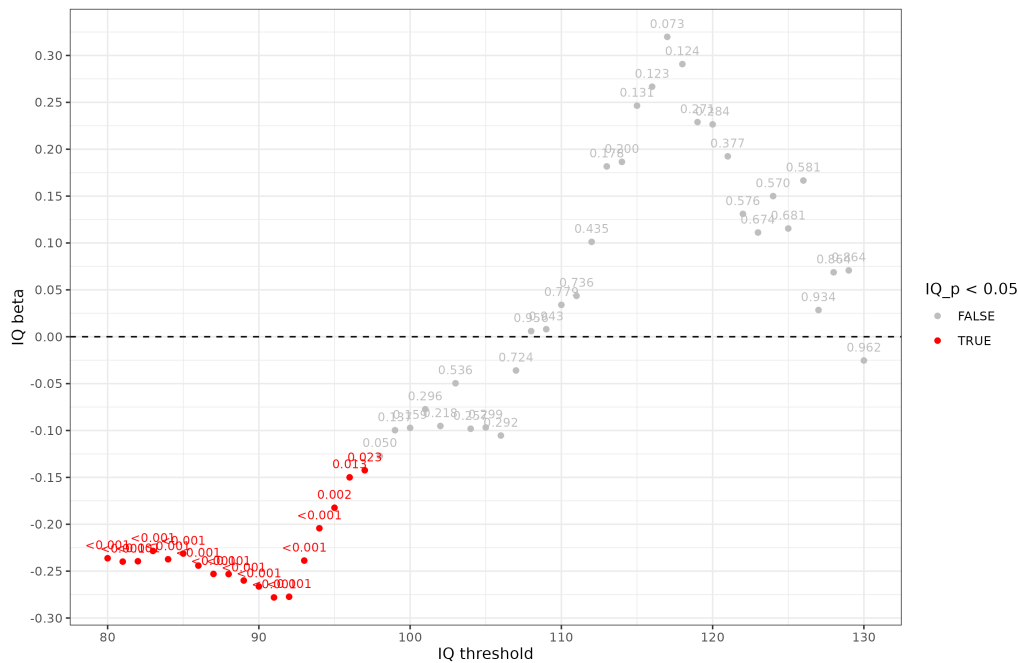


Figure 5: Detection of a positive association for intelligence on the right tail. The value shown is the p value for IQ's effect. The data were subset to cases with IQ at or above the threshold.

The relationship appeared to be complex, with no association below 95 IQ, a linear negative relationship between 90 and 115 IQ, and a slight upwards linear trend after 115 IQ. Is the upwards trend at the right tail beyond chance? The model comparison or spline tests are global, meaning that they test for any deviation from linearity, not necessarily sign reversal.

To examine whether there was evidence that the seeming positive association on the right tail was beyond chance, we employed a threshold search. The data were subset based on IQ thresholds from 80 to 130 in increments of 1. For each subset, the same linear model (with controls) was fit, and the β and p -value for IQ were saved. Figure 5 shows the results.

Though the subset analysis confirmed the positive slope seen in Figure 4, beginning from a threshold of 108, there was no threshold where this effect had a p -value below 0.05. However, at the 118 threshold, the p -value was 0.083, which, considering this was a strictly one-sided test, would nominally qualify.

4 Robustness Tests

To ensure the results were robust to methodological changes, we employed a different approach to modeling nonlinear effects of variables: generalized additive models (GAM) (Clark, 2024). These were implemented using the `mgcv` package (Wood, 2023).

First, we modeled each political question in the same way as before, but using the default settings in the `mgcv` package (`gam()` function with `s()`). By default, this package uses thin plate regression splines, an alternative to natural splines (Wood, 2003). Using this approach, 16 of the 26 beliefs had a detectable nonlinear association with intelligence ($p < 0.05$), which was very similar to the findings using cubic splines. Investigating the outlying case, it appears the GAM produces a numerical error for one belief (billionaire tax), for which it finds extremely strong evidence of nonlinearity ($-\log_{10} p = 7.3$), but the model predictions are entirely linear and the explained variance is the same. If this belief is ignored, the model results agree extremely well regarding the evidence for nonlinearity ($r = 0.96$ for $-\log_{10} p$ -values).

Second, we modeled conservatism as a function of the same variables, with a potential nonlinear effect of intelligence. The model comparison test showed strong evidence of nonlinearity ($p = 0.0016$). Figure 5 shows predictions with data overlaid, corresponding to Figure 4.

To examine whether the results were consistent between the two survey waves, we fit both spline models (natural and thin plate splines) in each wave separately. Using natural splines, the evidence for a nonlinear

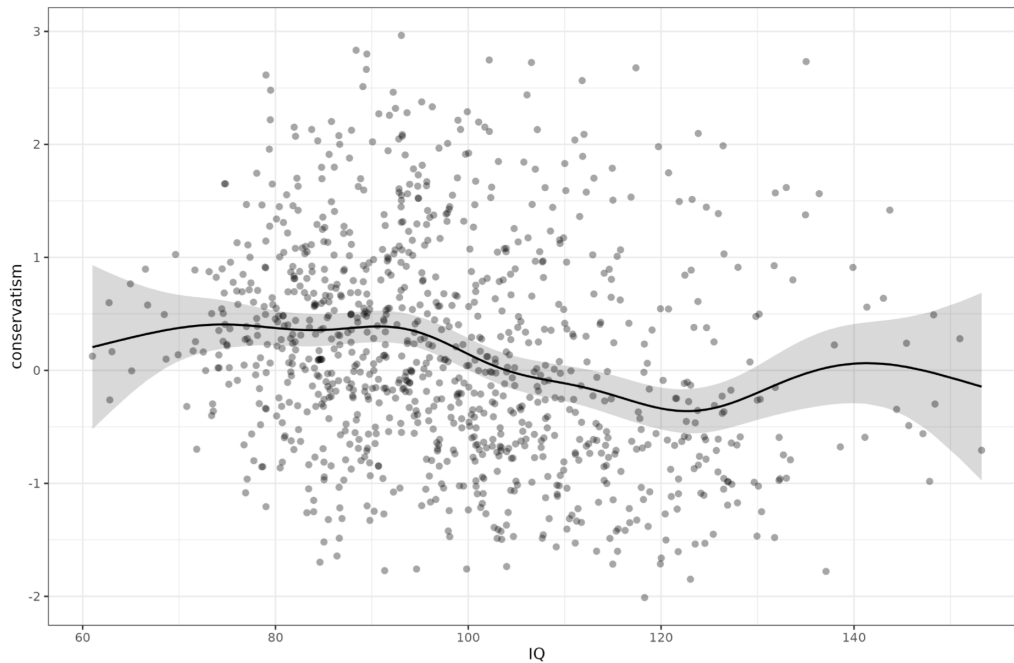


Figure 6: Model predictions for predicting conservatism from intelligence based on an ordinary least squares model with a thin plate spline for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

effect of intelligence by wave was $p = 0.007$ and $p = 0.097$. Using thin plate splines, the evidence was $p = 0.035$ and $p = 0.006$. Thus, even when analyzed separately, there was evidence for the nonlinear effect, though some of the p -values were unimpressive. Recall that in the joint dataset, the p -values were reasonably small ($p = 0.0008$ for natural spline 5 knots vs. linear and $p = 0.0016$ for thin plate spline vs. linear).

4.1 Multidimensional Analysis of Political Ideology

While political opinions is mostly reduced to a single dimension in most research, many studies find that political opinions cannot be adequately summarized with a single dimension or that this dimension differs between time and place (Borbáth & Gessler, 2020; Carmines et al., 2012; Feldman & Johnston, 2014; Malka et al., 2014; Prosser, 2016; Swedlow, 2008; Wojcik et al., 2021). Although a detailed analysis is out of scope of the present study, we wanted to examine whether our findings of nonlinear effects on the general factor (first dimension) were due to bias from unmodeled dimensions (a variant of omitted variable bias). To determine the number of factors to extract, we used parallel analysis, scree plots, and a variety of other methods. These suggested somewhere between 1 and 7 factors. We fit 6 additional models using the oblimin rotation, thus allowing for the dimensions to be correlated (using the `fa` function from the `psych` package (Revelle, 2024)). After this, we examined the factor loadings to tentatively label the factors identified. After extracting 5 factors, further factors did not lend themselves to interpretation or had too few items with salient loadings (the 5th factor in the 5-factor model had only 2 items with salient loadings), so we did not further analyze the results from the 6 and 7-factor solutions.

We see that the first factor, which we have so far labeled conservatism (reversed), was almost entirely consistent between the factor analyses (r 's from 0.96 to 1.00). However, it should also be noted that the correlation of the first factor with IQ decreases from 0.21 to 0.11 from the 1-factor to 5-factor models.

To be certain, we analyzed the globalist socialism factor from the 5-factor models. We found that there was still strong evidence for a nonlinear effect of intelligence on the general factor, showing the same form ($p = 0.0004$, using the natural spline model). In fact, there was evidence for a nonlinear effect on each of the 5 dimensions from the 5-factor model. p -values for 5-knot natural spline vs. linear model comparisons were:

- America first nationalism ($p = 0.0018$),
- techno-libertarianism ($p = 0.042$),

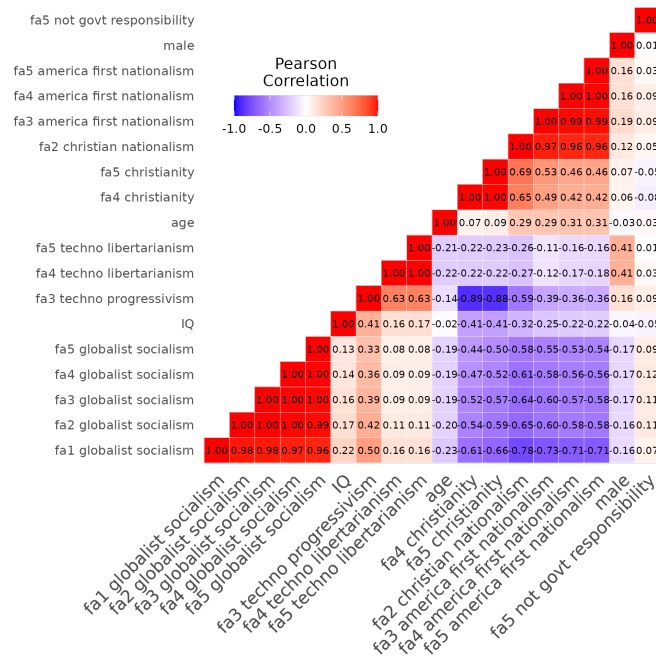


Figure 7: Correlation matrix between political dimensions from multiple factor analysis. Variables were reordered using hierarchical clustering. “faX” is factor analysis with X factors.

- Christianity ($p < 0.001$),
- ‘not the government’s responsibility’ ($p = 0.0026$) (See Figures S12–S15).

Note that the 5th factor seems to be a method factor due to low-quality response data in the left tail.

Similarly, when the general factor was tested for nonlinearity from the 2-, 3-, and 4-factor solutions, each of them showed strong evidence ($p = 0.003$). The results were consistent using the thin plate splines ($p = 0.002$). As such, no matter how the data were analyzed, there was strong evidence of nonlinearity of intelligence’s effects on general conservatism, with an apparent plateau or reversal after about 120 IQ. Figures S16–S17 show the function of intelligence for the 5-factor models for predicting ‘globalist socialism’ (the reverse of conservatism).

5 Discussion

We found pervasive evidence that intelligence (proxied by vocabulary knowledge) is associated with political opinions and political ideology. Furthermore, a majority of these associations were nonlinear. We confirmed these results using both natural splines and thin plate splines from two different statistical packages. Overall, intelligence was mainly associated with lower conservatism, but we found intriguing evidence that this pattern seemingly becomes null or reverses at about 120 IQ. However, it should be noted that despite doubling the initial sample size from 500 to 1000, there was still relatively low power to detect a positive association in the region past 120 IQ ($n = 111$ in this study). The smallest p -value was obtained with a threshold at 118 IQ ($p = 0.083$). Further research with a larger sample size and a test with high reliability on the right tail is necessary to investigate this further.

These results have implications for current writings concerning the lack of conservative talent among elites in the United States, especially public intellectuals and political commentators (Cofnas, 2024a,b; Hanania, 2021; Kirkegaard, 2022). The findings may, in fact, be interpreted as confirming a variant of the popular midwit or bell curve meme (Figure S11). The purpose of the meme is to state that people of high and low intelligence may sometimes disagree with those in the middle. We did not find this exact pattern in the data because the breakpoint for the reversal of the effect was around 120. However, if one considers that people engaged in online political or scientific debates may have an average IQ around 115, the results may align with the meme, at least with regards to general conservatism and a few other opinions (refer back to Figure 2). There are a few

other datasets with some political measures that produce support for this U-shaped pattern, but generally, it is not found (S. Jensen, 2023).

Our results of pervasive associations between intelligence and political thinking or behavior replicate the prior literature (Carl, 2014, 2015a; Deary et al., 2008; Edwards, Giannelis, et al., 2024; Heaven et al., 2011; Kirkegaard, 2022; Ludeke et al., 2017; Onraet et al., 2015; Rindermann et al., 2012). Most of this literature has found that social conservatism relates negatively (overall) to intelligence, a finding which we replicated. The results for economic conservatism (capitalism or free market support) are more mixed and our results confirmed this as well (Jedinger & Burger, 2021). Our findings were mostly of negative associations, something supported in the meta-analysis as more recent studies tend to show more negative associations. One prior study found a nonlinear, U-shaped association with leftism and intelligence (the opposite results of this study), though this was questioned by a later study (Carl, 2015b; Solon, 2014).

The limitations of the current study include the following. First, we were unable to discern causality with the current cross-sectional dataset. Generally, however, reverse causality is implausible because intelligence is largely inherited (heritable) and causation of political ideology on intelligence is implausible. This, however, does not mean that the results aren't confounded by other variables. We used a small set of demographic controls as we did not want to control for potential mediators (something caused by intelligence which later cause political opinions). Two prior studies used a sibling design to examine the relationship between intelligence and polygenic scores thereof, and found that these also predicted within family (Ahlskog, 2023; Ahlskog & Oskarsson, 2023; Edwards, Giannelis, et al., 2024). This pattern of results shows family-level confounding cannot explain most of the association. These facts taken together suggests that intelligence causes political beliefs. As the associations of intelligence with various political beliefs has changed over time, it suggests the nature of the causation depends on the political situation and cultural climate (Dutton, 2013; Kirkegaard, 2022; Woodley, 2010, 2011; Woodley of Menie & Dunkel, 2015).

Second, we relied upon American online paid-to-participate survey data, which is known to have certain biases (e.g., left-wing sampling bias, lack of Hispanic representation). It is not known to which degree this affected our results. Our general findings were in line with the prior literature, some of which were not based on online surveys, which suggests this wasn't a big concern. Still, there is a risk of collider bias for the right tail. This is because workers (paid survey takers) at Prolific make at 8-10 dollars an hour answering surveys online, a much lower salary than could be achieved elsewhere for American people of high intelligence. People of high intelligence who nevertheless take on this form of labor are likely to be deficient in other qualities that are attractive in workers. One chief such quality is mental health. As mental health has a negative association with conservatism, we can expect sampling bias in the high IQ range such that left-wingers are over-sampled (Bernardi, 2020; Kirkegaard, 2020a). We are not aware of any study that has examined this particular issue, but the broader topics of volunteer bias and non-random attribution or non-response and the resulting collider bias are well studied (Callahan et al., 2007; Lamp & MacKinnon, 2024; van Alten et al., 2024).

Third, we measured only vocabulary knowledge, as opposed to a full battery of diverse cognitive tests. This is mainly because measuring nonverbal or fluid ability online is difficult and expensive, as subjects do not pay sufficient attention to such tasks and they take longer (e.g., answering a single vocabulary question takes a few seconds, solving a figure matrix item may take a minute). Some of the prior literature has found that verbal abilities are more strongly related to political ideology than are non-verbal abilities. Our results, then, should be particularly clear (Ludeke et al., 2017). There is also the possibility that verbal tilt has biased our results, as verbal tilt itself seems to relate to socialism or lower conservatism (Edwards, Dawes, et al., 2024; Kirkegaard, 2020b). If so, then the results may underestimate the reversal of intelligence's effect on political ideology. It should be said, however, that other research using the General Social Survey and the American National Election Studies datasets also used purely vocabulary tests (the GSS Wordsum, 10-item test), which were shorter and less reliability than the current study.

Fourth, the statistical power was not ideal, and some p -values were in the dubious zone (around 0.05). For this reason, after the initial wave of data was analyzed, a nearly direct replication sample was collected to ascertain if findings would replicate. The fact that the same pattern of nonlinearity was found in both datasets, which were collected at slightly different times and with slightly different sampling strategies (naturally representative for age, sex, ethnicity vs. politically representative), speaks to the robustness of our results. The same is true for our use of two different statistical packages implementing different regression spline types (natural vs. thin plate) for examining the nonlinearity.

Supplementary Materials

High-quality figures, data, and R code needed to reproduce the study are available in the OSF repository at <https://osf.io/tbqzw/>. Additionally, the R notebook is available at https://rpubs.com/Emil10WK/IO_nonlinear_politics.

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Appendix



Figure S1: Strength of evidence for spline models over linear models for predicting individual political belief.

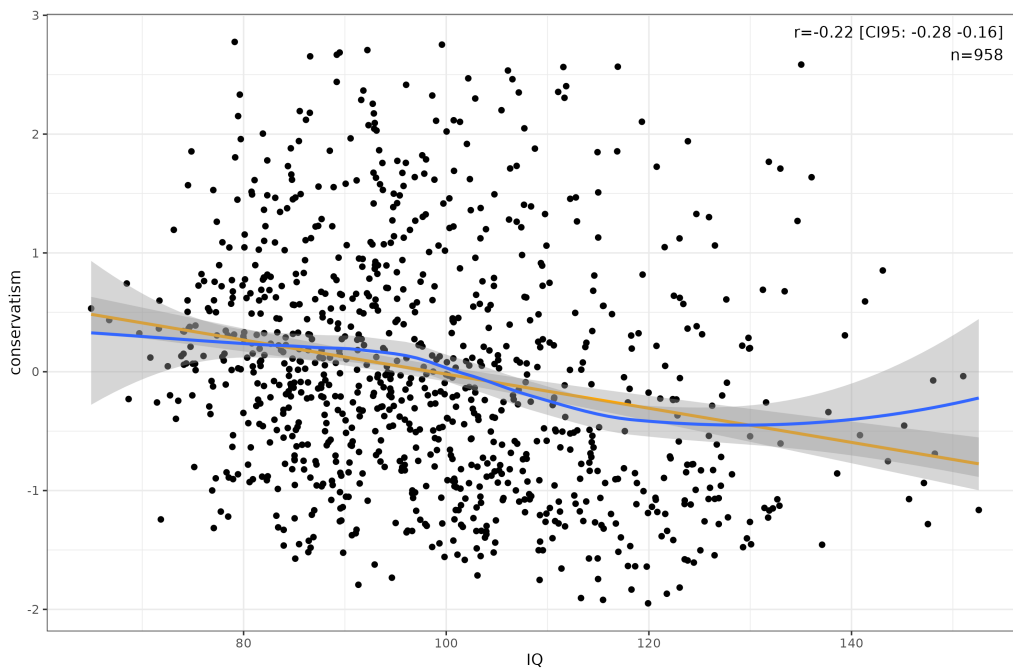


Figure S2: Scatterplot of intelligence and conservatism without covariates. Smoothed line from a general additive model (default of `geom_smooth()` in `ggplot2`).

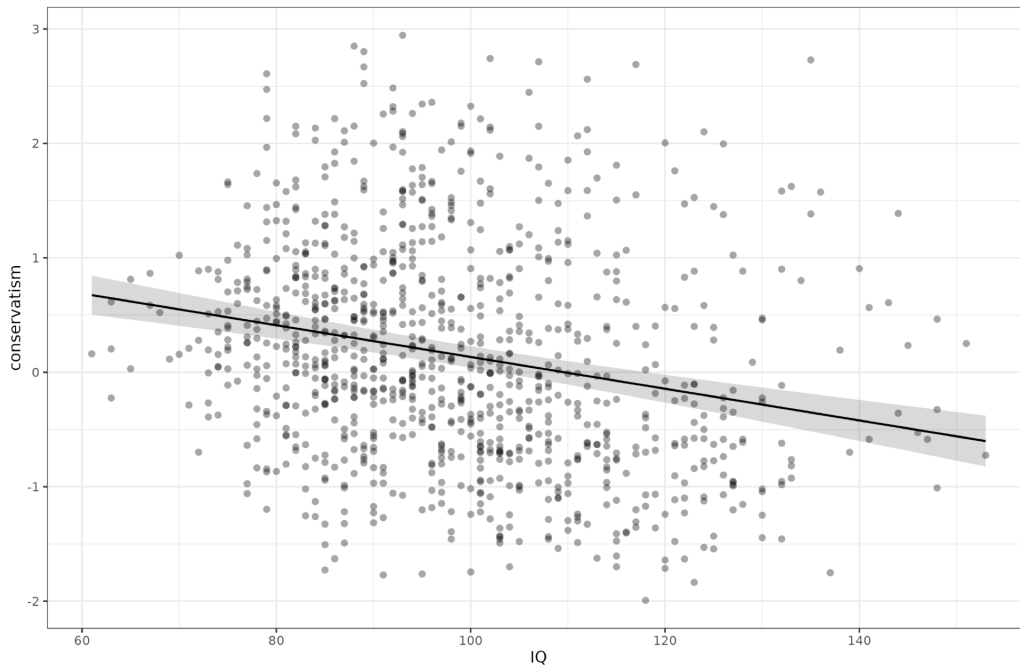


Figure S3: Model predictions for predicting conservatism from intelligence based on a linear model for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

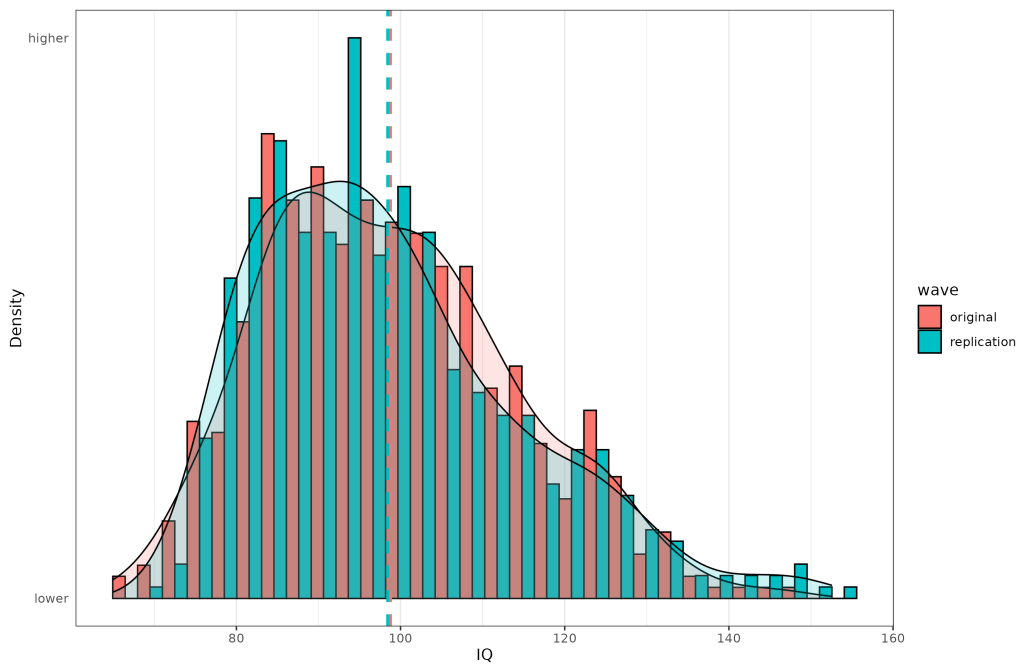


Figure S4: Distribution of vocabulary IQ by wave.

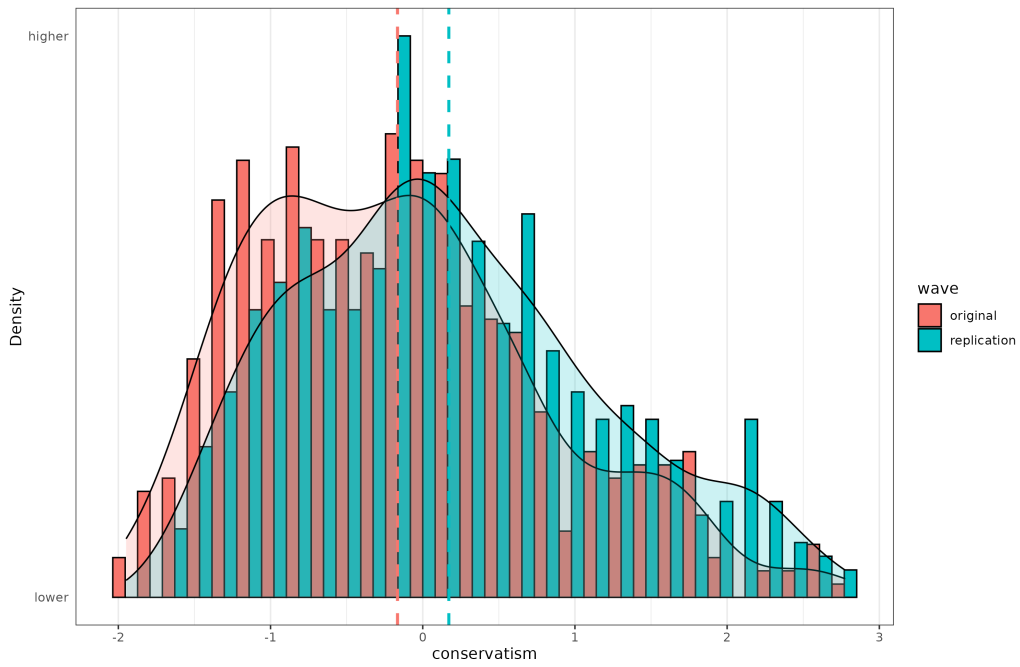


Figure S5: Distribution of conservatism by wave.

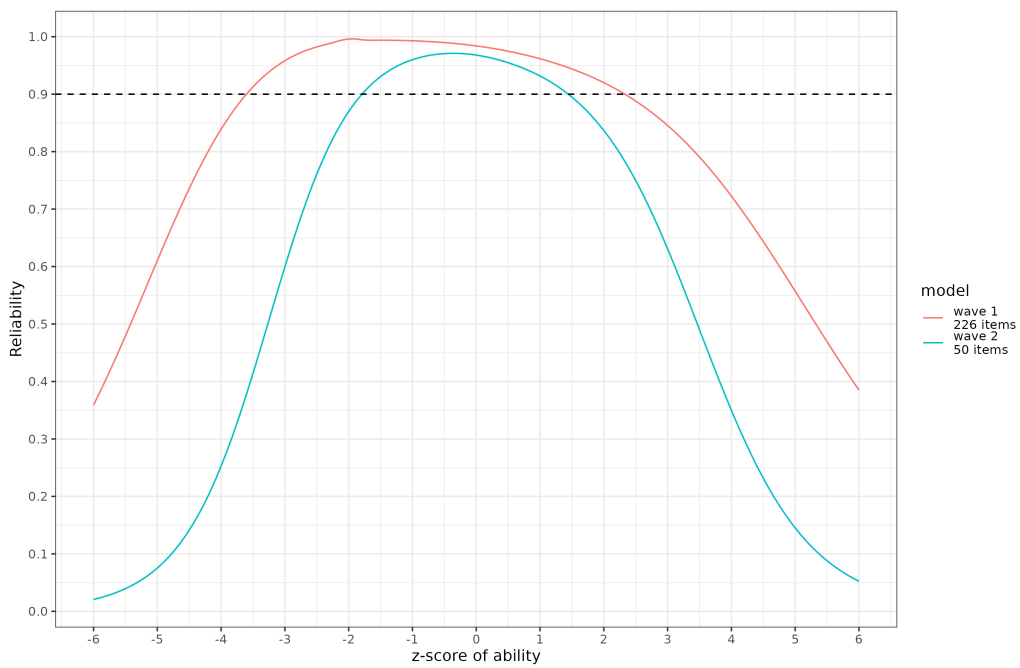


Figure S6: Vocabulary test reliability distribution by wave.

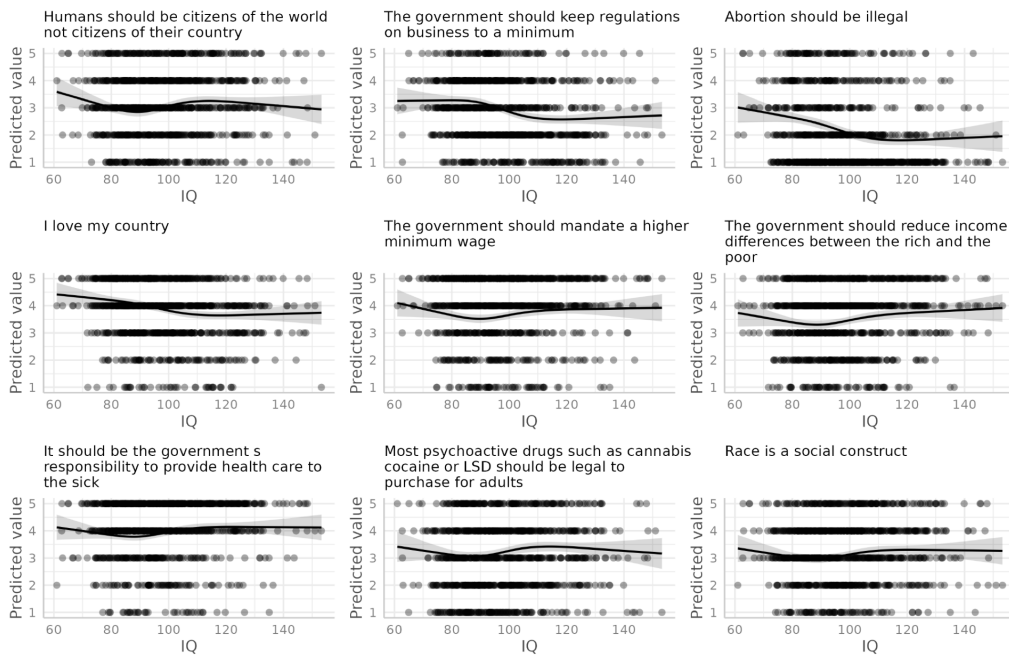


Figure S7: Nonlinear effects of intelligence on specific political opinions. Scatterplots of the 10-18th models with strongest evidence of nonlinearity. Error bars are 95 % confidence intervals. Models include controls for age, sex, and ethnicity.

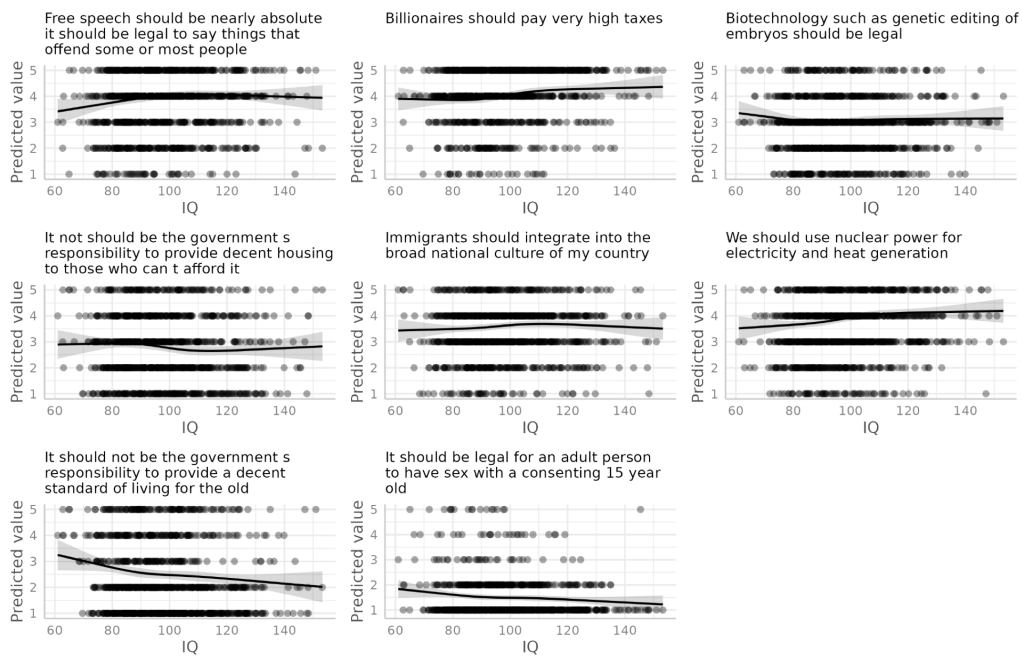


Figure S8: Nonlinear effects of intelligence on specific political opinions. Scatterplots of the 19-26th models with strongest evidence of nonlinearity. Error bars are 95 % confidence intervals. Models include controls for age, sex, and ethnicity.

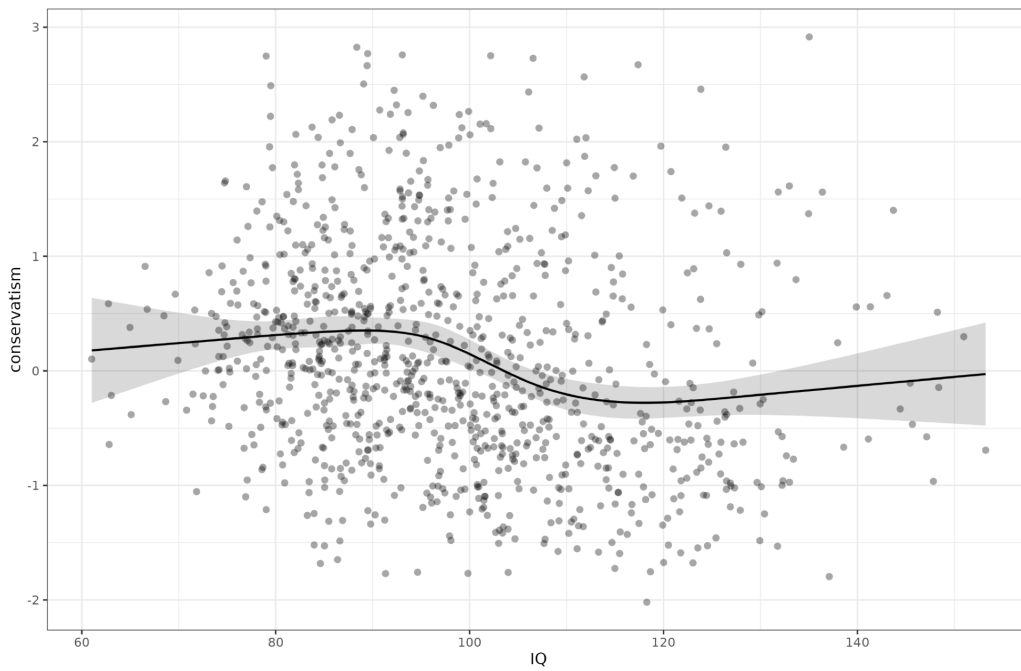


Figure S9: Model predictions for predicting conservatism from intelligence based on a natural spline model for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, but not ethnicities. Data points are partial residuals.

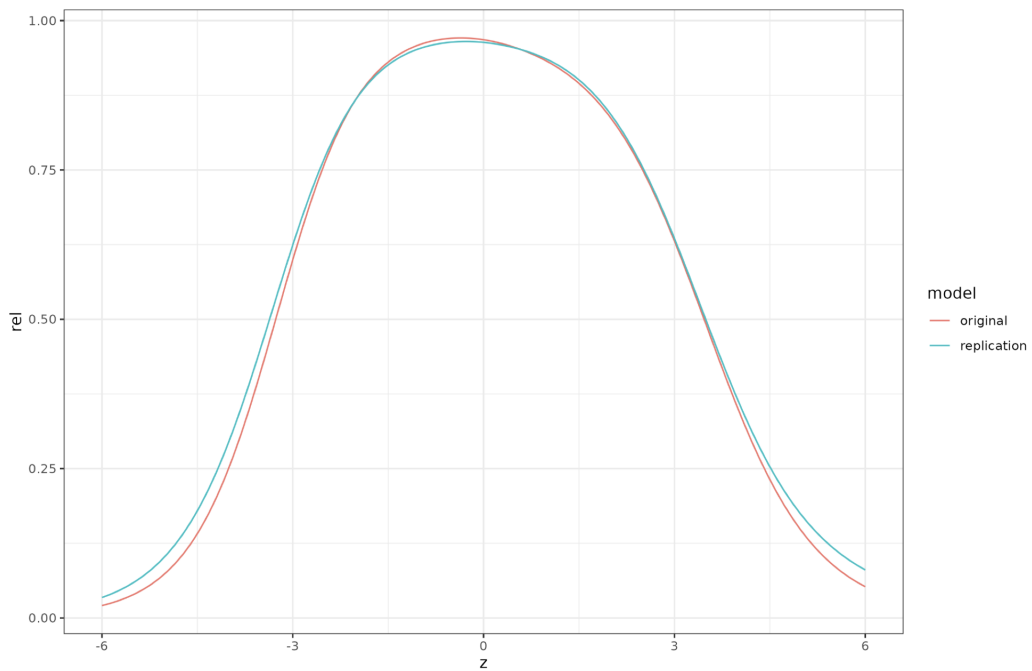


Figure S10: Reliability function replication for the 50-item abbreviated test.

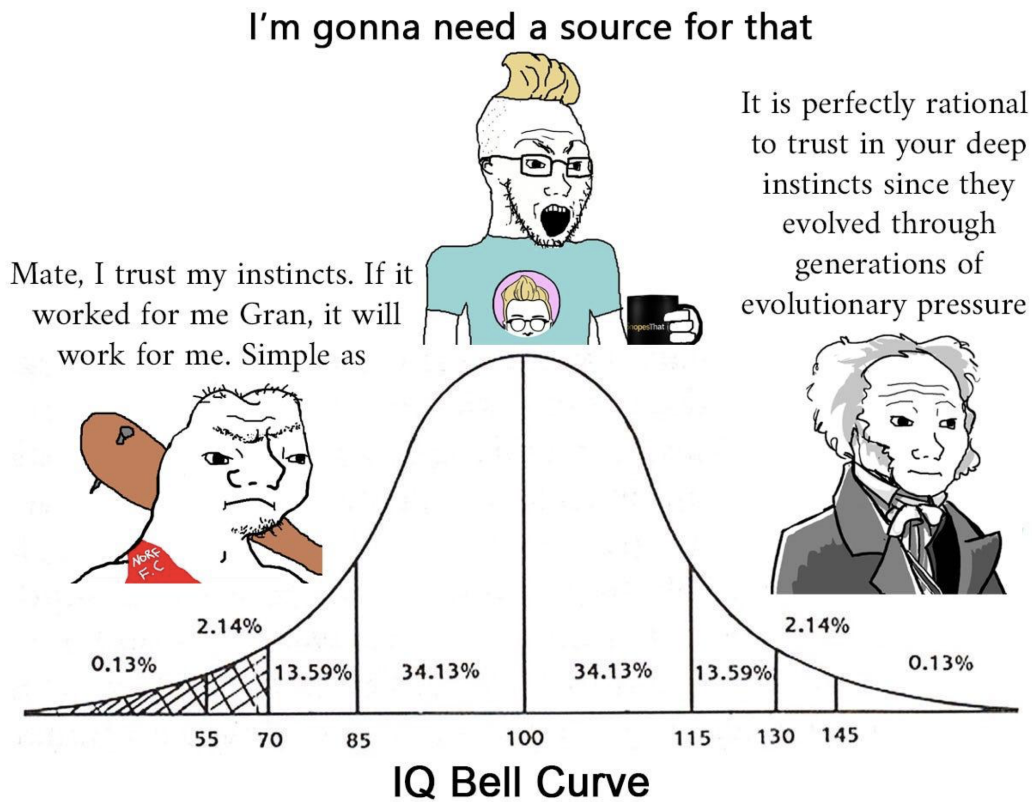


Figure S11: An example of the midwit or Bell Curve meme.

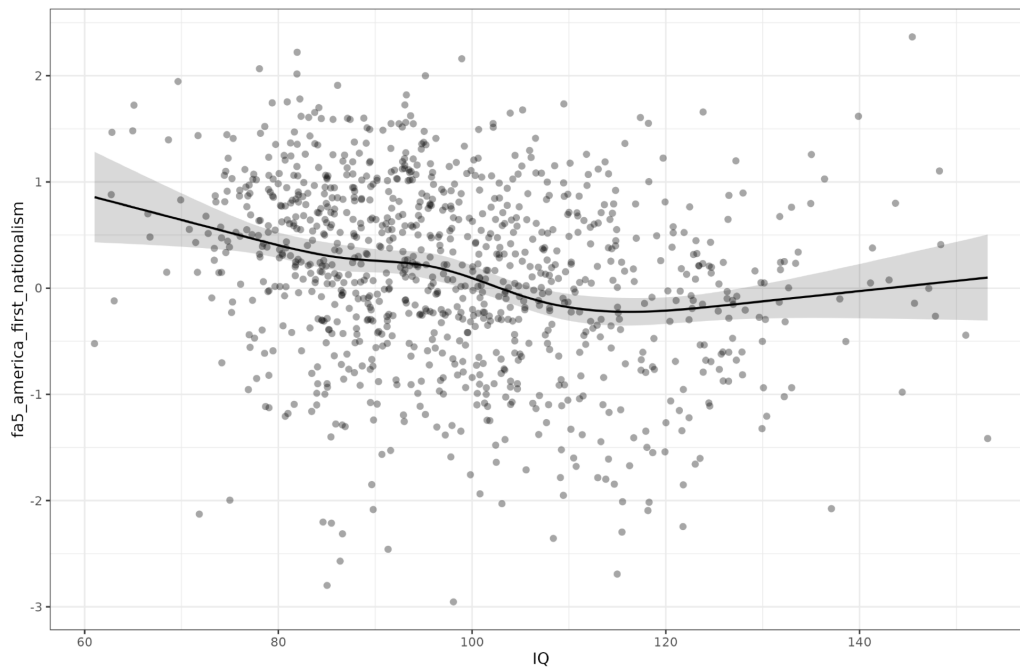


Figure S12: Model predictions for predicting America first nationalism from intelligence based on a natural spline model for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

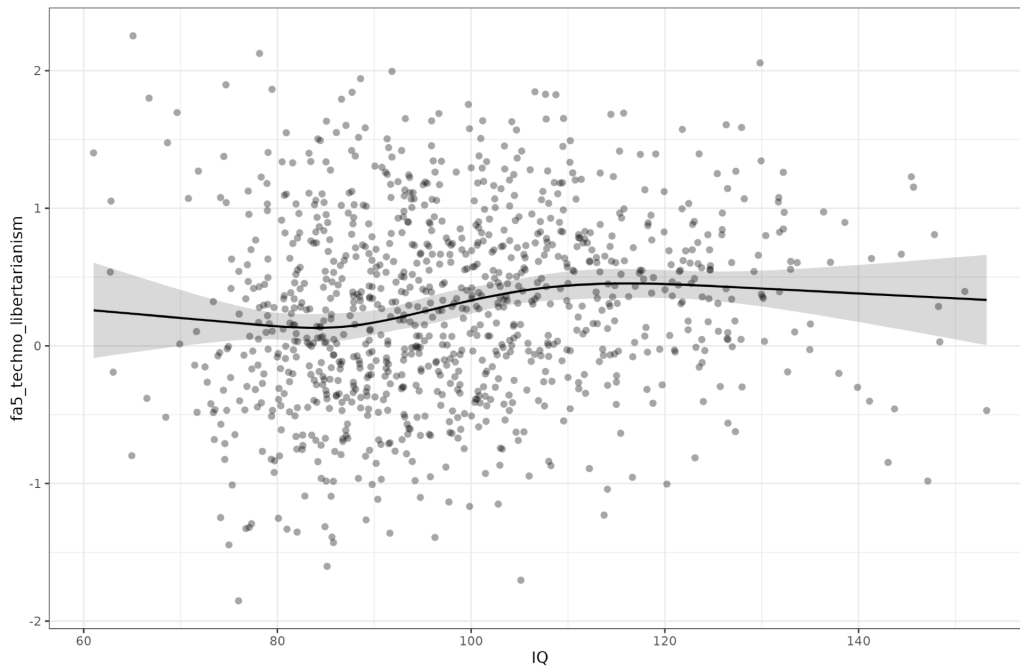


Figure S13: Model predictions for predicting techno-libertarianism from intelligence based on a natural spline model for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

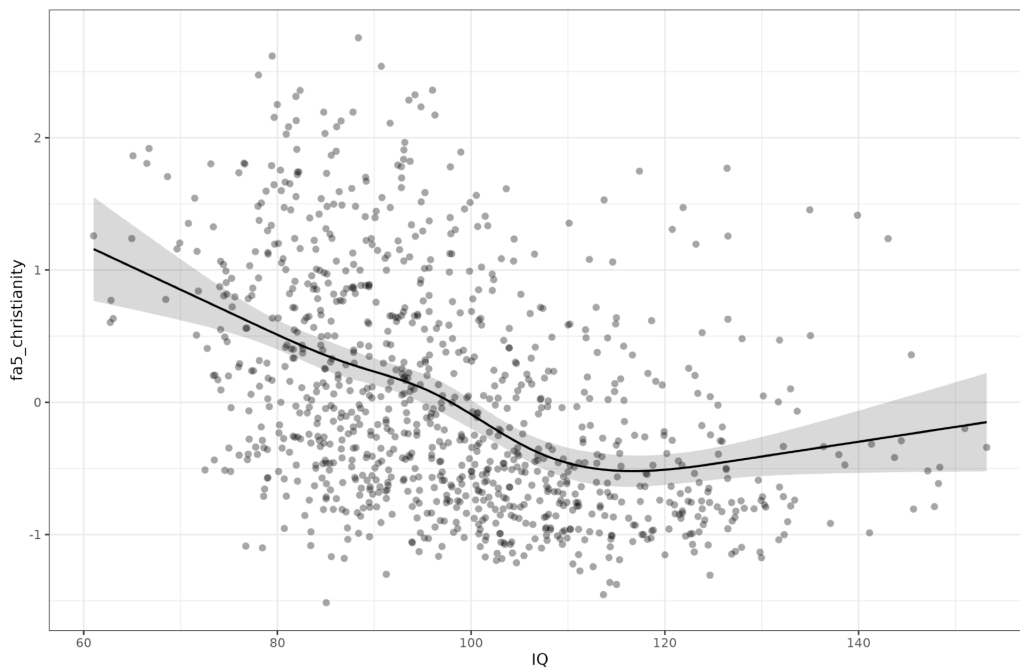


Figure S14: Model predictions for predicting Christianity from intelligence based on a natural spline model for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

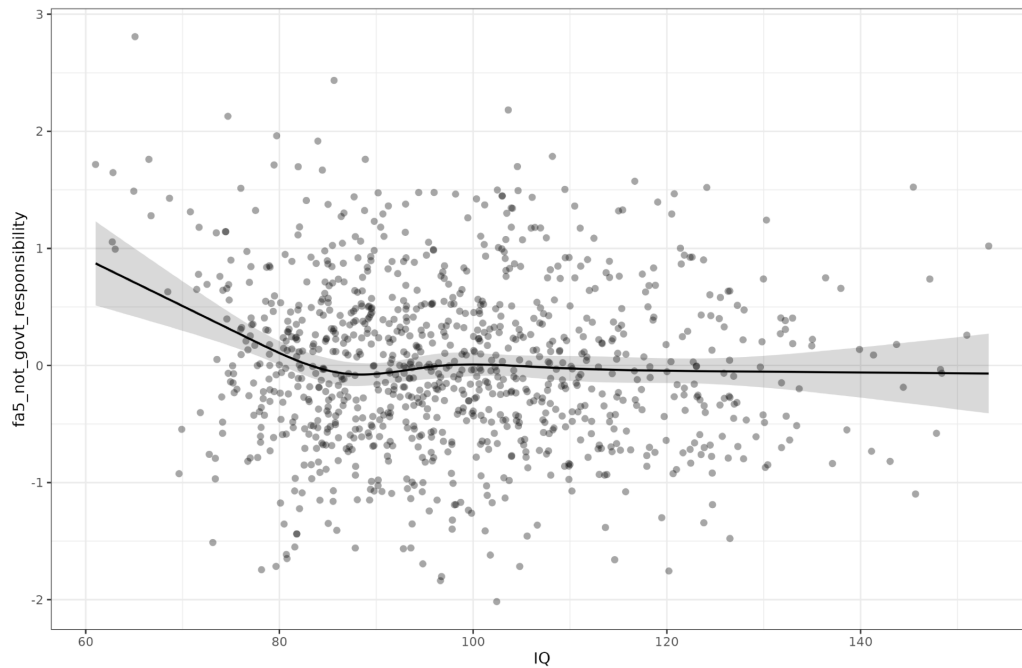


Figure S15: Model predictions for predicting ‘not the government’s responsibility’ from intelligence based on a natural spline model for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

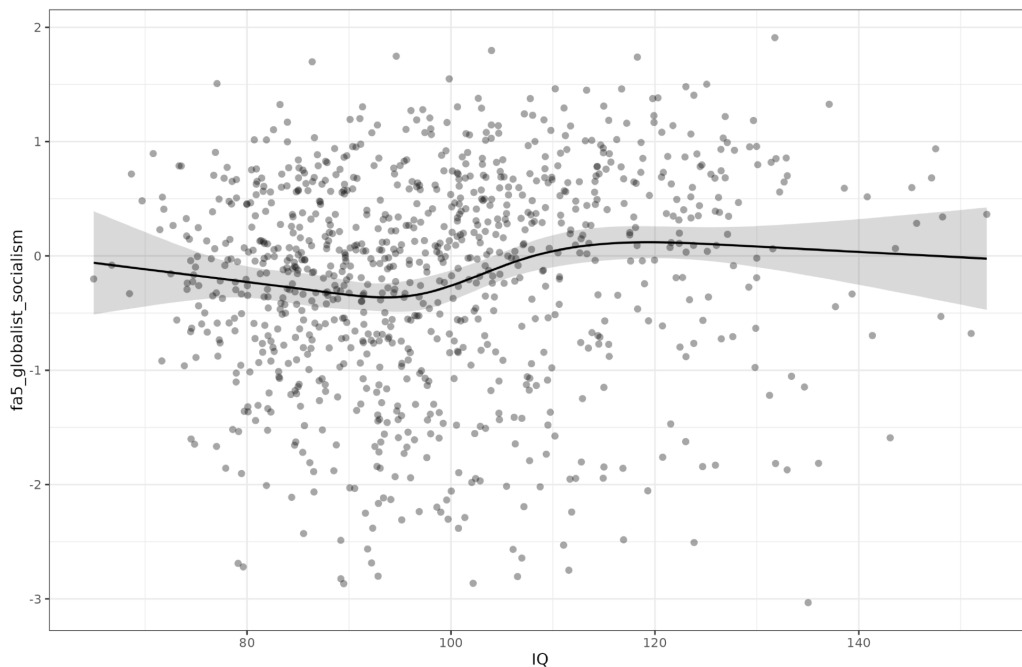


Figure S16: Model predictions for predicting globalist socialism (1st factor) from intelligence based on a natural spline model for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

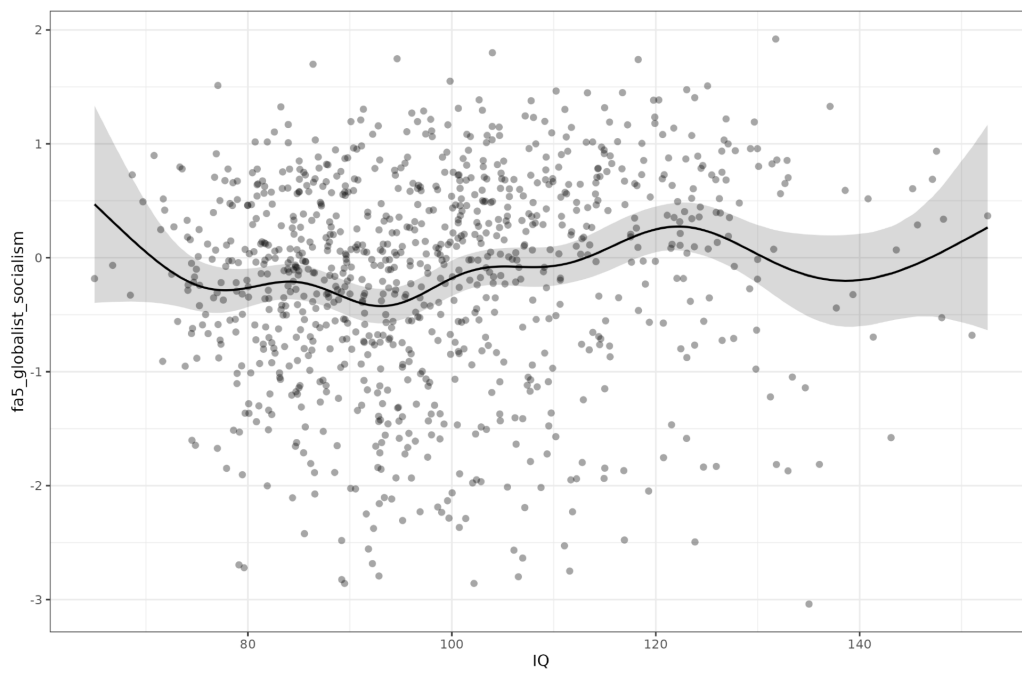


Figure S17: Model predictions for predicting globalist socialism (1st factor) from intelligence based on a thin plate spline model for intelligence, holding covariates constant at mean or modal values. Error bar shows 95 % confidence interval. The model include controls for age, sex, and ethnicities. Data points are partial residuals.

Table S1: Summary Statistics for Linear Models of Intelligence

Political Belief	IQ beta	std beta se	Demo rsq	Linear rsq	Linear model p
The government should keep regulations on business to a minimum	-0.21263	0.03148	0.0029	0.04577	0
The government should reduce income differences between the rich and the poor	0.11311	0.03114	0.05473	0.06619	0.00027
Large companies should be controlled by the state not private actors	-0.05647	0.03039	0.10851	0.11071	0.06195
The government should mandate a higher minimum wage	0.07136	0.03124	0.05657	0.06056	0.02179
It should be the government's responsibility to provide health care to the sick	0.09997	0.03139	0.04274	0.05147	0.0014
It should not be the government's responsibility to provide a decent standard of living for the old	-0.12072	0.0318	0.01352	0.02667	0.00014
It should be the government's responsibility to provide a decent standard of living to the unemployed	0.16005	0.03145	0.02375	0.04762	0
It not should be the government's responsibility to provide decent housing to those who can't afford it	-0.07317	0.03209	0.00458	0.00877	0.02203
I think that the United Nations should have more political power	0.04982	0.03202	0.01177	0.01319	0.11789
I would support an increase in immigration to my country	0.2323	0.03119	0.01188	0.06325	0
Humans should be citizens of the world not citizens of their country	0.06042	0.03181	0.02337	0.02592	0.05637
Military spending should be increased	-0.29952	0.02973	0.06307	0.14919	0
Immigrants should integrate into the broad national culture of my country	0.05341	0.03112	0.06587	0.0677	0.08459
I love my country	-0.18217	0.0297	0.11937	0.15069	0
It is important to honor our national history and heritage	-0.19833	0.03074	0.05279	0.09001	0
My country should try to influence the values of other nations	-0.11391	0.03168	0.02214	0.03375	0.00031
Race is a social construct	0.08176	0.03172	0.02578	0.03129	0.00967
Biotechnology such as genetic editing of embryos should be legal	0.01753	0.03119	0.06417	0.06353	0.57199
Billionaires should pay very high taxes	0.14544	0.03145	0.02846	0.04801	0
We should use nuclear power for electricity and heat generation	0.14719	0.02963	0.1345	0.15465	0
Abortion should be illegal	-0.21312	0.0312	0.0198	0.06289	0
Christianity should be the state religion	-0.36516	0.02968	0.02377	0.15219	0
Free speech should be nearly absolute it should be legal to say things that offend some or most people	0.08389	0.0311	0.06271	0.06859	0.00679
Most psychoactive drugs such as cannabis cocaine or LSD should be legal to purchase for adults	0.07252	0.03166	0.03084	0.03497	0.02144
It should be legal for an adult person to have sex with a consenting 15 year old	-0.09244	0.03175	0.02229	0.02959	0.00348
Feminism is good for women	0.2322	0.03099	0.02403	0.07537	0

Note: "demo" is the demographics only model (age, sex, ethnics). "linear" is the model that adds IQ, and the "linear model p" is the model test comparison's p value between the demographics only and IQ-added model.