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Honesty, Intelligence, and Race

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Abstract

Research shows that honesty correlates positively with intelligence. Similarly, there are racial differences in honesty, with Europeans being more honest than various other ethnic groups. It is currently unknown to what degree race differences in intelligence can explain the differences in honesty. We investigated this question using data from the National Longitudinal Study of Youth 1997 (NLSY97), a large American longitudinal dataset. We replicate prior findings that honesty correlated with measures of intelligence ($r = .38$, 95% CI [.34, .41]) and that Blacks ($d = -0.67$, 95% CI [-.76, -.59]) and Hispanics ($d = -0.4$, 95% CI [-.50, -.31]) are less honest than Whites, and this holds whether honesty is measured by self-reports, interviewer-reports, or by parent-reports. In addition, race differences in honesty remained between Blacks and Whites but not between Whites and Hispanics after controlling for intelligence. Differences between Blacks and Whites but not Whites and Hispanics were noticeably lower in self-reports (Blacks: $d = -0.18$ [-0.24, -0.11], Hispanics: $d = -0.24$ [-0.31, -0.17]) than parent-reports (Blacks: $d = -0.43$ [-0.52, -0.35], Hispanics: $d = -0.24$ [-0.33, -0.15]) and interviewer-reports (Blacks: $d = -0.7$ [-0.75, -0.64], Hispanics: $d = -0.3$ [-0.36, -0.25]). Cross-national comparisons were made using national IQ data and Hofstede's cultural dimensions. Bayesian model averaging suggests that Hofstede's individualism dimension ($\beta = .64$, PIP = 100%), national IQs ($\beta = .25$, PIP = 73.6%), and masculinity ($\beta = -.35$, PIP = 100%) predict differences in honesty between countries. Parking violations per diplomat were only predicted by national IQs ($r = -0.28$, $p < .001$), given that no other variable reached a posterior inclusion probability above 0% besides national IQs. Implications and theories concerning these findings are discussed.

Keywords: Ethnicity, IQ, black, hispanic, honesty, intelligence, race, white

1 Introduction

Some of the earliest research on intelligence and honesty was done by Howells (1938), who studied the relationship between intelligence and cheating in two different types of exams: exams where cheating was assessed using wax paper and exams where cheating was assessed using chemical impression. Chemical impression was much harder for the students to detect than the wax paper method. Accordingly, cheating was more negatively correlated with intelligence when cheating was assessed with the wax paper method than with the chemical impression method. In fact, the correlation with intelligence was not significant ($r = -.08$, $n = 74$) when the test was made much harder and the chemical impression method was used. However, given the sample size is small, the power to detect this correlation is small. Other early research suggests that children with higher IQs cheat less on academic tests (Tuttle, 1931), though that could be simply because smarter children don't need to cheat to do well on tests.

Experimental evidence from soldiers and civilians in Israel also suggests that increased intelligence is associated with more honest behaviour ($p < .01$) (Ruffle & Tobol, 2016). This study instructed Israeli soldiers and civilians to roll a die in private, and were told that each point on the die would lead to an earlier release of 30 minutes on Thursday. Intelligent individuals reported a lower average roll than unintelligent people. However, differences in intelligence past the above-average level were not associated with increased honesty in civilians or soldiers, though this could potentially be a power failure ($n = 427$). A similar relationship has been found for some

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other measures, for instance, the relationship intelligence has with measures of personal failure (e.g., being on welfare or being unemployed) decreases in strength as intelligence increases (Hegelund et al., 2018).

There are several potential reasons why there is a relationship between honesty and intelligence, even when controlling for various variables. The first is that intelligent people have a lower time preference, which causes them to be more honest. Another theory is that intelligence allows people to morally reason more effectively, which causes them to be more honest. Alternatively, intelligent people have an easier time succeeding, which decreases their need to lie. Lastly, intelligent people are less predisposed to psychopathy, which causes them to lie less. The plausibility of these theories and the evidence supporting them are discussed in the following paragraphs.

The basis of the first theory regarding time preference is that the rewards of honesty are delayed, while the rewards for lying are not. For example, the benefits of lying to a police officer could be an increase in short-term reputation and lower stress levels, while the benefits of being honest would be better treatment in court. A meta-analysis indicates that intelligence and higher time preference are correlated ($r = -.23$) (Shamosh & Gray, 2008), meaning that if high time preference causes dishonesty, then intelligence will be associated with dishonesty.

Another potential reason intelligence is correlated with honesty is that intelligence enables individuals to use moral reasoning. Even within a highly selected gifted sample with a mean IQ of 126.5, IQ and moral reasoning assessed with the Defining Issues Test correlated at .14 ($p < .05$) (Karnes & Brown, 1980). Within that study, moral reasoning correlated somewhat higher with verbal IQ ($r = .25$) than performance IQ ($r = -.06$), and this difference passed statistical significance ($n = 208$, $p < .01$). Similar studies evaluating the relationship between intelligence and moral reasoning also corroborate these findings (Hanks, 1985; Eisenberg-Berg, 1979).

There is a vast amount of literature suggesting intelligence is linked to various measurements of success (Strenze, 2014). Analysis that control for socioeconomic status or use sibling controls suggest that this effect is causal (Herrnstein & Murray, 1994; Murray, 2002; Hegelund et al., 2019; Marks, 2022).

Lastly, intelligence may correlate with honesty because intelligence negatively covaries with the p-factor (Kirkegaard & Nyborg, 2021), the general predisposition to psychopathological behaviour. There is evidence that psychopathic factors such as Machiavellianism ($r = -.40$) and psychopathy ($r = -.45$) negatively correlate with the personality factor known as honesty-humility (Ashton et al., 2000). Because of this, intelligence and honesty should be positively correlated independent of other variables. In addition, these correlations between intelligence and personality traits appear to be almost completely genetic (Bartels et al., 2012), indicating that the true relationship between intelligence and personality is pleiotropic or causal.

Besides the research on intelligence and honesty, there is also evidence that there are racial differences in honesty. One study distributed 17,303 wallets in 40 different countries to various institutions that were asked to return the wallets to the hypothetical owners (Cohn et al., 2019). There were large differences in honesty between countries, which are displayed in Figure 1.

Another experiment involved an incident where diplomatic immunity prevented UN diplomats from parking violations until 2002. There were clear national differences in the number of parking violations that diplomats from each nation accrued, with the most honest nations having under 1 violation per diplomat while the least honest nations had over 100 violations per diplomat (Fisman & Miguel, 2007). In general, countries with people of northern European ancestry had fewer parking violations than other countries.

In addition, various studies of scientific misconduct by country suggest that, compared to European countries, East Asian and Arab countries engage in much more scientific misconduct than European countries (Carlisle, 2020; Ataie-Ashtiani, 2017; Fanelli et al., 2019). There are national differences in corruption, where countries with people of Northwestern European descent tend to be less corrupt than others (2021 Corruption Perceptions Index, 2022). Lastly, there is evidence that within the USA, Blacks are more likely to lie about drug use than Whites (Fendrich, 2005; Hughes et al., n.d.).

It is worth mentioning that there are differences in honesty between genetically similar nations; for instance, China is less honest than Korea and Japan. In most sources of data on scientific misconduct (Carlisle, 2020; Ataie-Ashtiani, 2017; Fanelli et al., 2019), China is the worst-performing of the 3 major East Asian nations. When comparing different foreign diplomats in NYC, Chinese diplomats had more parking violations per diplomat (9.6) than Japan (0) and South Korea (0.4) (Fisman & Miguel, 2007). Lastly, China performed worse than Japan and South Korea on measures of international corruption (Transparency International, 2022).

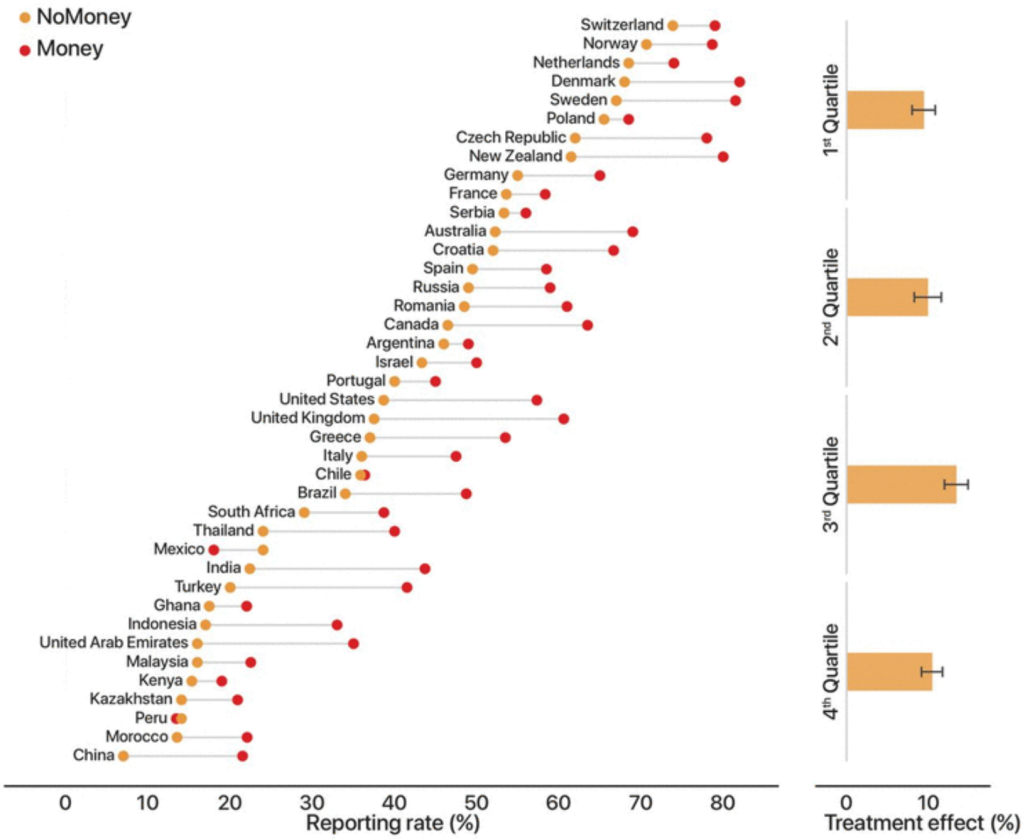

Figure 1: Civic Honesty by Country (reproduced from Cohn et al. 2019).

There are various reasons why some races may be less honest than others. If some races are more intelligent than others, and intelligence is associated with honesty, then some races should be more honest than others. It has also been speculated that the unique psychological profile of Europeans can be traced back to social norms such as the prohibition of incest and polygamy in the middle ages (Henrich, 2020). This psychological profile involves emphasizing the importance of individuals over kin and engaging in more prosocial behaviour.

Some scholars have criticized this theory, pointing out that monogamy was prominent in Europe among early Christians and Roman Stoics (Duchesne, 2022) as well as among ancient Spartans, Romans, and Athenians (MacDonald, 2021), making the notion that Christian norms were the cause of monogamy tenuous. Lastly, Henrich does not consider that the social structures that are present in society can act as a selection pressure (Hanania, 2022). For example, societies that prevent incest and monogamy also select for individuals who are willing to interact positively with humans outside their kin group.

It is important to have an operational definition of honesty, as the term can be easily confused with other concepts such as criminality and integrity. Dictionaries seem to agree that honesty relates to a consistency between held and expressed beliefs and fair conduct. For instance, Britannica Dictionary (n.d.) defines honesty as "the quality of being fair and truthful: the quality of being honest" and Cambridge Dictionary (n.d.) defines it as "telling the truth or able to be trusted and not likely to steal, cheat, or lie". Honesty does not encompass criminality, as a criminal who admits to their crimes is honest. However, in practice, criminality and cheating tend to result in lying to prevent their actions from being uncovered.

2 Comparison between countries

2.1 Data

National IQ data was taken from Becker (2019), and the combined results from scholastic achievement studies, geometric means, and sample-size weighted means were taken. National IQs are highly predictive of outcomes between countries (Lynn & Becker, 2019), and are a substantial cause of economic growth between countries (Francis & Kirkegaard, 2022).

Hofstede's cultural dimensions (Hofstede, 2016) were used to explore whether psychological differences between nations were predictors of honesty independent of intelligence. These dimensions are named Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long Term Orientation, and Indulgence. Individualism in particular was highlighted as a potential contributor, as humans in more individualistic cultures are relatively more reliant on their individual reputation than that of their clan or family ties. These measures come from an old dataset of IBM employees who are not representative of the countries involved, though the results from these surveys seem to correspond somewhat well to surveys from other sources ($r = .6 - .8$) (Hofstede, 2001). In addition, the individualism index has been found to correlate with other surveys, such as Schwartz conservatism ($r = -.55$) and the individual-social dimension of Smith ($r = .7$).

Honesty measures were taken from the study (Cohn et al., 2019) that distributed wallets around multiple cities and reported the rates at which they were returned. Measures from the wallets with money and the wallets without were averaged to reduce the amount of measurement error.

Parking violation measures were taken from the study that compiled the parking violations that occurred per diplomat in each country (Fisman & Miguel, 2007). These violations occurred while diplomatic immunity protected diplomats from parking violations.

All measures were standardized at a mean of 0 and a standard deviation of 1.

2.2 Results

Correlational analysis displayed in Tables 1 and 2 suggested that national IQs ($r = .65$, $p < .001$), power distance index ($r = -.6$, $p < .001$), and individualism ($r = .69$, $p < .001$) were correlated with honesty and that national IQs ($r = -.28$, $p < .001$) and indulgence ($r = -.35$, $p < .01$) were associated with less parking violations per diplomat.

Table 1: Correlation between national variables and honesty, measured using the data from the wallet study. * = p < .05, ** = p < .01, *** = p < .001.

Variable	Correlation	N
National IQ	.65***	35
Power Distance Index	-.6***	33
Individualism	.69***	33
Masculinity	-.32	33
Uncertainty Avoidance	-.12	33
Long-term Orientation	.26	33
Indulgence	.17	34

Bayesian model averaging was used to determine whether a variable continued to be associated with honesty independent of the other ones within the dataset. This method consists in averaging out the results from the best models identified in the dataset. This results in a posterior inclusion probability (PIP) for every variable, which is the probability that this variable would be included in the hypothetical true model.

Table 2: Correlation between national variables and parking violations per diplomat.* = p < .05, ** = p < .01, *** = p < .001.

Variable	Correlation	N
National IQ	-.28***	138
Power Distance Index	.19	58
Individualism	-.25	58
Masculinity	-.025	58
Uncertainty Avoidance	.067	58
Long-term Orientation	-.17	74
Indulgence	-.35**	74

Based on the results of this method, individualism (PIP = 100 %), masculinity (PIP = 100 %), IQ (PIP = 73.6 %), and uncertainty avoidance (PIP = 70.3 %) were the most robust predictors of honesty between nations. For parking violations, only IQ (PIP = 100 %) was a robust predictor. The best models selected by this method are identified in Tables 3 and 4 in addition to the PIP and expected values of the coefficients in the true model.

Table 3: BMA results from models predicting national differences in honesty in the wallet study. Parameter estimates are standardized.

Parameter	PIP	Expected Value	Model 1	Model 2	Model 3	Model 4	Model 5
National IQ	73.60%	0.25	0.34	0.35			
Power Distance Index	0%	0					
Individualism	100%	0.64	0.61	0.52	0.82	0.8	0.71
Masculinity	100%	-0.35	-0.35	-0.32	-0.4	-0.38	-0.36
Uncertainty Avoidance	70.30%	0.18	0.24		0.28	0.25	
Long-term Orientation	18.70%	0.045			0.25		0.22
Indulgence	0%	0					
R2			0.72	0.68	0.7	0.64	0.64
Posterior probability			0.51	0.226	0.148	0.045	0.039

Table 4: BMA results from models predicting differences in parking violations per diplomat. Parameter estimates are standardized.

Parameter	PIP	Expected Value	Model 1
National IQ	100%	-0.68	-0.68
Power Distance Index	0%	0	
Individualism	0%	0	
Masculinity	0%	0	
Uncertainty Avoidance	0%	0	
Long-term Orientation	0%	0	
Indulgence	0%	0	
Adjusted R2			0.46

3 Comparison between individuals

3.1 Data

We used data from the National Longitudinal Study of Youth 1997 (NLSY97). This is a large American longitudinal study of 8,984 subjects that have been followed since ages 13-17, at semi-regular intervals. There are 19 waves of data. The dataset is broadly representative of Americans of these ages (U.S. Bureau of the Census, 1997). The dataset is publicly available, and the subset used is also available in the study's supplementary materials, along with the analysis code. https://osf.io/vw4sa/, https://rpubs.com/sebjenseb/a979249.

For intelligence, the 1st general factor was extracted from the 12 ASVAB subtests that were administered by the NLSY. All subtests were corrected for their relationship with age at testing. This exam mostly tests mathematical ability, verbal ability, and knowledge, meaning that it disproportionately tests crystallized intelligence; the exceptions to this are a coding speed test and an assembling objects test. Crystalized intelligence has a g-loading that ranges from about 0.82-0.95 (Johnson et al., 2004; Weiss et al., 2010; Fenollar-Cortés & Watkins, 2018) depending on the test, so it is a good measurement of general intelligence.

General intelligence is responsible for the vast majority of the predictive validity of tests of mental ability (Jensen, 1998). However, there is some evidence that specific abilities can be responsible for some differences in outcomes. For instance, verbal ability tilt predicts a preference toward social sciences (Coyle, 2018) and mental illness (Rajagopal et al., 2020). However, these should not be substantial sources of bias when evaluating the relationship with honesty, especially when taking into consideration other abilities were tested.

For race, 3 methods were used to classify individuals by race. The first is to categorize them using a variable provided by the NLSY staff that was based on household information and the race of the biological parents. If this information was not available, self-reports of racial ancestry were taken from the Round 6 questionnaire. If participants were still unclassified, interviewer responses from the Round 5 questionnaire were used to classify race. The individuals were then grouped into 3 main categories: White, Hispanic, or Black. Among individuals explicitly judged as White, Black, or Hispanic by the household data or the self-reports, the accuracy of racial identification was 97.6 % for Whites, 99.7 % for Blacks, and 97.7 % for Hispanics. Due to concerns about sample size and the grouping of different races into one variable, Asians, Pacific Islanders, mixed-race individuals, American Indians, Eskimos, and Aleuts were excluded from this analysis.

For honesty, there were three variables available: self-reported, interviewer-reported and parent-reported honesty. For self-reported honesty, youth were prompted with the phrase "you lie or cheat.", and were instructed to respond that this statement was "not true", "somewhat/sometimes true", or "often true". For parent-reported honesty, Parents were prompted with the question "[their child] lies or cheats.", and were instructed to respond that this statement was "not true", "somewhat/sometimes true", or "often true". Both individuals were instructed to restrict their responses to behaviour that occurred within the last 6 months.

Interviewer-reported honesty was categorized into 'very candid/honest', 'moderately candid/honest', 'somewhat candid/honest', and 'not candid/honest' by the interviewer in response to the prompt 'In general, how candid/honest was the youth respondent?' for each interview in the 19 waves. The general factor of these assessments was extracted to reduce the measurement error present within these evaluations.

The correlation between the 3 different honesty variables was fairly low. The tetrachoric correlation between self-reported honesty and interviewer-reported honesty was 0.07, the tetrachoric correlation between self-reported honesty and parent-reported honesty was 0.32, and the tetrachoric correlation between parent-reported honesty and interviewer-reported honesty was 0.18.

For parental social status, we used the first principal component of income, assets, paternal education, and maternal education. Filling missing values did not substantially decrease the validity of the measurement, as the correlation with child IQ with no filled values (.467) was almost identical to that with filled values (.453).

Grade point average (GPA) was initially considered as a potential mediator, where intelligence could impact school grades, which could impact the desire to cheat, as modeled in Figure 2. Alternatively, it could also be possible that honesty is causally related to GPA because honesty causes students to cheat less, which causes them to fail less. Lastly, honesty could relate to prosocial personality traits which cause increased GPA.

All of the quantitative metrics were standardized with a mean of 0 and a standard deviation of 1, besides IQ which was normed relative to the White mean.

The term IQ will be used to refer to the factor scores derived from the first principal component of the ASVAB, while g or general intelligence will be used to describe the latent variable that is underlying cognitive ability.

3.2 Results

Race differences in general honesty were replicated in the study, shown in Figure 3 and 4. The same holds for the relationship between honesty and intelligence, which is displayed in Figure 5. There were race differences in every single measurement of honesty, as noted in Tables 5, 6, 7, and 8.

Table 5: General honesty by race, relative to the White (n=1,663) mean.

Race	Cohen's d	p-value	95% CI
Black (n=806)	-0.67	p <.001	[-0.76, -0.59]
Hispanic (n=627)	-0.40	p <.001	[-0.5, -0.31]

The difference in R between a linear and non-linear model (with restricted cubic splines) was small (nonlinear = .383, linear = .379) and the difference in residuals did pass statistical significance (F = 9.01, p < .001). This is likely due to a ceiling effect, as the effect of intelligence began to attenuate when the regression line began to approach the highest value of general honesty possible.

In addition, both IQ and parental SES were correlated with honesty measurements, as displayed in Table 9. When appropriate, methods that correct for the existence of ordinal data such as the polychoric correlation

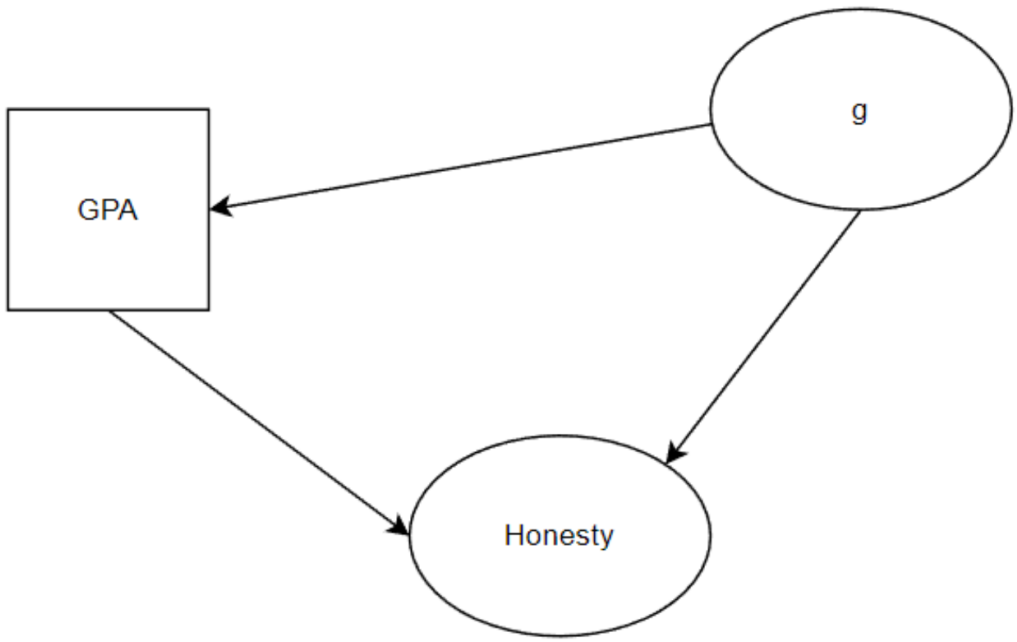

Figure 2: The proposed model involving *g*, GPA, and Honesty.

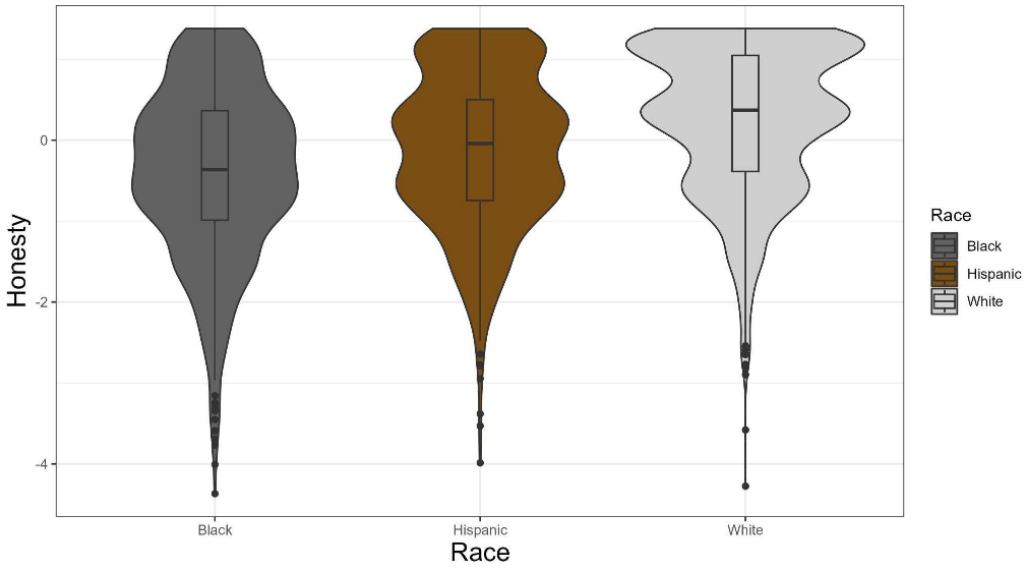

Figure 3: Violin plot of race differences in general honesty.

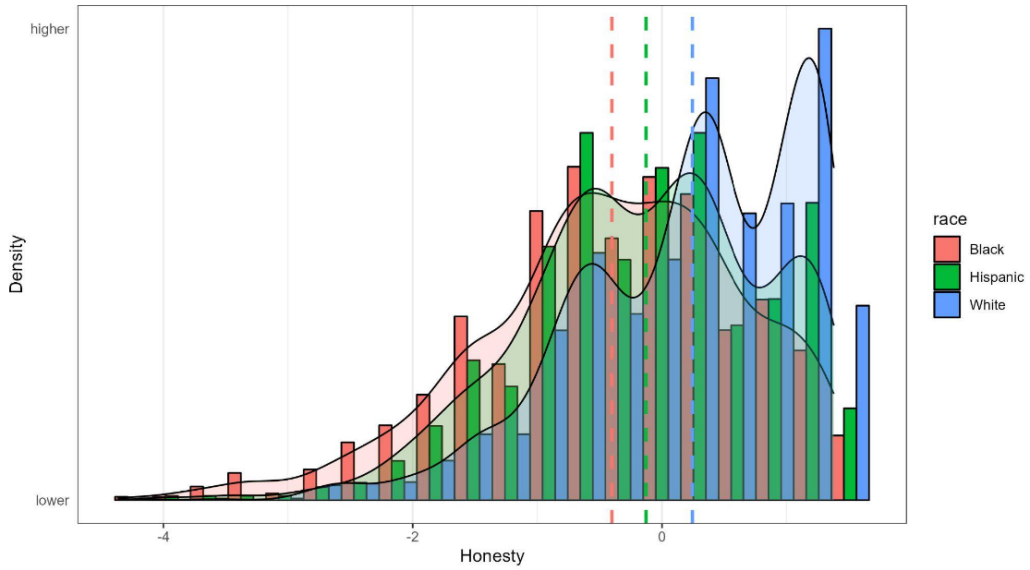

Figure 4: Density plot of race differences in general honesty.

Table 6: Self-reported honesty by race, relative to the White (n=2,706) mean.

Race	Cohen's d	p-value	95% CI
Black (n=1388)	-0.18	p <.001	[-0.24, -0.11]
Hispanic (n=1125)	-0.24	p <.001	[-0.31, -0.17]

Table 7: Interviewer-reported honesty by race, relative to the White (n=4,467) mean.

Race	Cohen's d	p-value	95% CI
Black (n=2353)	-0.70	p <.001	[-0.75, -0.64]
Hispanic (n=1838)	-0.30	p <.001	[-0.36, -0.25]

Table 8: Parent-reported honesty by race, relative to the White (n=1,703) mean.

Race	Cohen's d	p-value	95% CI
Black (n=828)	-0.43	p <.001	[-0.52, -0.35]
Hispanic (n=656)	-0.24	p <.001	[-0.33, -0.15]

Table 9: Correlations between various variables of interest in the dataset.

Variable 1	Variable 2	Correlation	p-value
g	Self-reported honesty	0.11	p <.001
g	Parent-reported honesty	0.33	p <.001
g	General-honesty	0.38	p <.001
g	Interviewer-reported honesty	0.36	p <.001
Parental SES	Self-reported honesty	0.051	p <.01
Parental SES	Parent-reported honesty	0.21	p <.001
Parental SES	General-honesty	0.21	p <.001
Parental SES	Interviewer-reported honesty	0.17	p <.001
Parental SES	g	0.45	p <.001

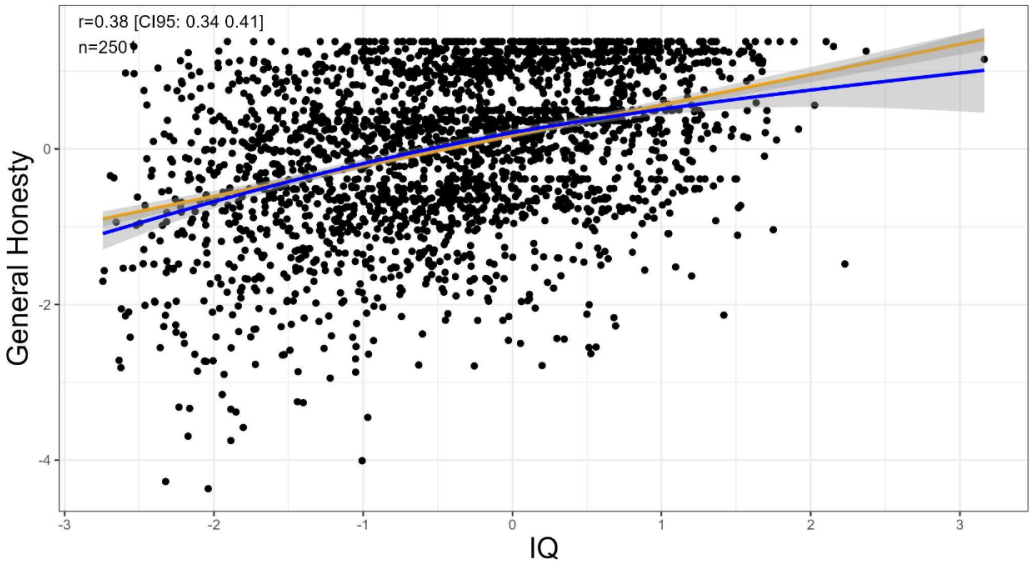

Figure 5: Scatterplot of intelligence and honesty. blue - estimate based on conditional means, yellow - linear regression.

were employed, as the Pearson correlation coefficient would underestimate the true correlation between ordinal variables.

Given that there are race differences in intelligence and parental SES, it would be appropriate to investigate if these race differences in honesty remain after controlling for IQ and parental SES. Regression was employed to examine what the effect of race was independent of parental SES and IQ. Based on the results from the 5 models displayed in Table 10, the effect of race on honesty diminishes but does not disappear after intelligence is controlled for. The influence of parental SES diminishes greatly in models where IQ was included, indicating that the relationship between parental SES and honesty is due to the correlation parental SES has with IQ.

Table 10: Linear Regression models predicting general honesty. Racial reference group is Whites, non-racial parameter estimates are standardized, t-values in parenthesis.* = p < .05, ** = p < .01, *** = p < .001.

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
SES	0.0246 (1.2)		0.13 (7.2)***	0.015 (0.8)	
IQ	0.38 (17.4)***	0.34 (15.6)***		0.33 (14.2)***	
Black		-0.27 (5.4)***	-0.55 (12.8)***	-0.26 (5.3)***	-0.65 (15.7)***
Hispanic		-0.07 (1.3)	-0.25 (5.1)***	-0.06 (1.1)	-0.37 (8.3)***
Adjusted-R^2	0.14	0.15	0.091	0.15	0.077

There may be differences in what influences different methods of measuring honesty. For example, it could be possible that intelligence can influence the way somebody reports their honesty, but not how their parents report their honesty. To determine if this is true, the same models used in Table 10 were also used to predict self-reported honesty in Table 11, parent-reported honesty in Table 12, and interviewer-reported honesty in Table 13. It appears that intelligence relates to honesty regardless of how it is measured and what control variables are applied.

Table 11: Regression models predicting self-reported honesty. Racial reference group is Whites, non-racial parameter estimates are standardized, t-values in parenthesis.* = p < .05, ** = p < .01, *** = p < .001.

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
SES	-0.014 (0.8)		0.0015 (0.1)	-0.028 (1.6)	
IQ	0.1 (5.9)***	0.074 (4.1)***		0.085 (4.4)***	
Black		-0.081 (2)*	-0.18 (5.3)***	-0.09 (2.2)*	-0.18 (5.5)***
Hispanic		-0.13 (3)**	-0.24 (6.2)***	-0.14 (3.2)**	-0.24 (6.7)***
Adjusted-R^2	0.0087	0.011	0.01	0.011	0.011

Table 12: Regression models predicting parent-reported honesty. Racial reference group is Whites, non-racial parameter estimates are standardized, t-values in parenthesis.* = p < .05, ** = p < .01, *** = p < .001.

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
SES	0.029 (1.5)		0.11 (6.1)***	0.029 (1.4)	
IQ	0.26 (12.1)***	0.26 (11.7)***		0.24 (10.3)***	
Black		-0.14 (2.8)**	-0.34 (7.8)***	-0.13 (2.6)*	-0.42 (10.1)***
Hispanic		-0.00062 (0.01)	-0.12 (2.4)*	0.021 (0.4)	-0.23 (5)***
Adjusted-R2	0.076	0.078	0.043	0.079	0.032

Table 13: Regression models predicting interviewer-reported honesty. Racial reference group is Whites, non-racial parameter estimates are standardized, t-values in parenthesis.* = p < .05, ** = p < .01, *** = p < .001.

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
SES	0.012 (0.98)		0.1 (8.9)***	0.0057 (0.5)	
IQ	0.35 (28.3)***	0.3 (11.7)***		0.3 (22.5)***	
Black		-0.32 (6.2)***	-0.61 (23.8)***	-0.32 (10.7)***	-0.67 (27.5)***
Hispanic		-0.016 (0.5)	-0.16 (5.7)***	0.0057 (0.5)	-0.26 (9.6)***
Adjusted-R^2	0.13	0.15	0.089	0.15	0.08

Regression models were used to determine if GPA was a mediating variable in Table 14. The reason for doing this is that intelligence could influence grades, and then grades could impact the desire to cheat, which impacts self-reports and parent-reports. The model using IQ and racial variables was judged to be the best model, as these were the variables most consistently associated with the outcome variables.

Table 14: Regression models predicting honesty. Racial reference group is Whites, non-racial parameter estimates are standardized, t-values in parenthesis. * = p < .05, ** = p < .01, *** = p < .001.

Parameter	General honesty	Parent-reported honesty	Self-reported honesty	Interviewer-reported honesty
GPA	0.15 (5.6)***	0.13 (5.1)***	0.056 (2.5)*	0.11 (7.4)***
IQ	0.22 (7.2)***	0.17 (5.6)***	0.043 (1.7)	0.21 (12.7)***
Black	-0.25 (4.1)	-0.19 (3.2)**	-0.06 (1.2)	-0.27 (8.1)***
Hispanic	0.0091 (0.14)	0.044 (0.7)	-0.07 (1.3)	0.008 (0.22)
Adjusted-R^2	0.14	0.095	0.0088	0.13

According to the regression models in Table 14, being Hispanic does not appear to be associated with Honesty independent of GPA and IQ. However, being Black is associated with honesty even after controlling for GPA and IQ. Both GPA and IQ are associated with honesty after adjusting for controls in the two models with the least predictive error.

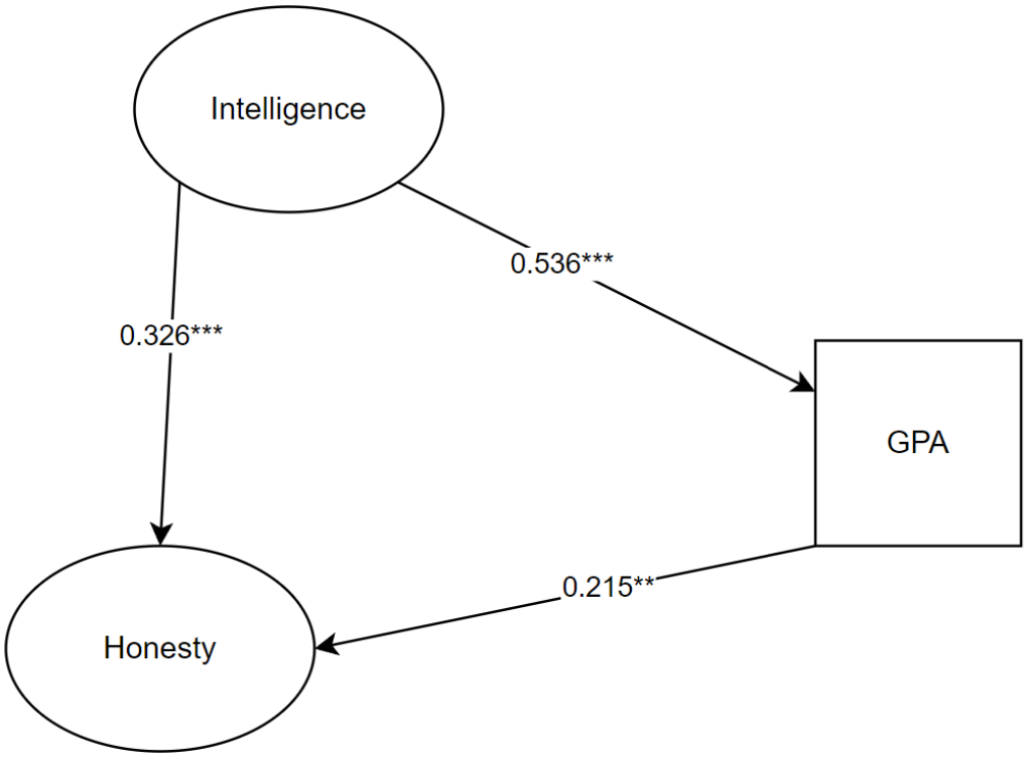

Figure 6: SAM with GPA as a mediating variable (GPA Mediator Model). Honesty is a latent variable derived from parent and self-reports, g is a latent variable derived from 12 ASVAB subtests. * = p < .05, ** = p < .01, *** = p < .001.

A structure after measurement model (SAM) (Rosseel & Loh, 2022) was used to calculate the latent correlation between intelligence and honesty. DWLS estimation was employed due to the non-normality of the honesty variable and a global method was used as it holds the measurement part of the modeling constant before assessing the structural relationships. Given that only latent variables are involved, only an SEM or a global SAM can be employed. The latent correlation between intelligence and honesty was .45, 95% CI [.24, .67]. The unusually wide confidence interval is due to estimation uncertainty, as the confidence interval that does not consider this source of error is much smaller [0.43, 0.47]. The CFI of the model was 0.96 and the RMSEA was 0.096.

Two structural after measurement models were considered to judge the relationship between GPA and honesty. While GPA was initially considered as a mediator in the relationship between IQ and honesty, it is just as plausible that honesty or personality traits associated with it positively impact GPA. These SEM models are shown in Figures 6 and 7. Table 15 shows the model fit statistics.

Table 15: Comparison of fit statistics between the two models.

Model	CFI	RMSEA
GPA Mediator Model	0.964	0.087
Honesty Mediator Model	0.964	0.087

Both models have identical fits in terms of quality, and it is unclear what the relationship between honesty and GPA is. Given that both models have an equal number of parameters, a nested model comparison cannot be done.

4 Discussion

We replicated prior results that intelligence, honesty, and race are related, with intelligence and race having clear relationships with honesty. Hispanics (d = -0.40) and Blacks (d = -0.67) were less honest than whites and g and honesty were positively correlated (latent correlation = .38). Linear regression analysis indicated that the

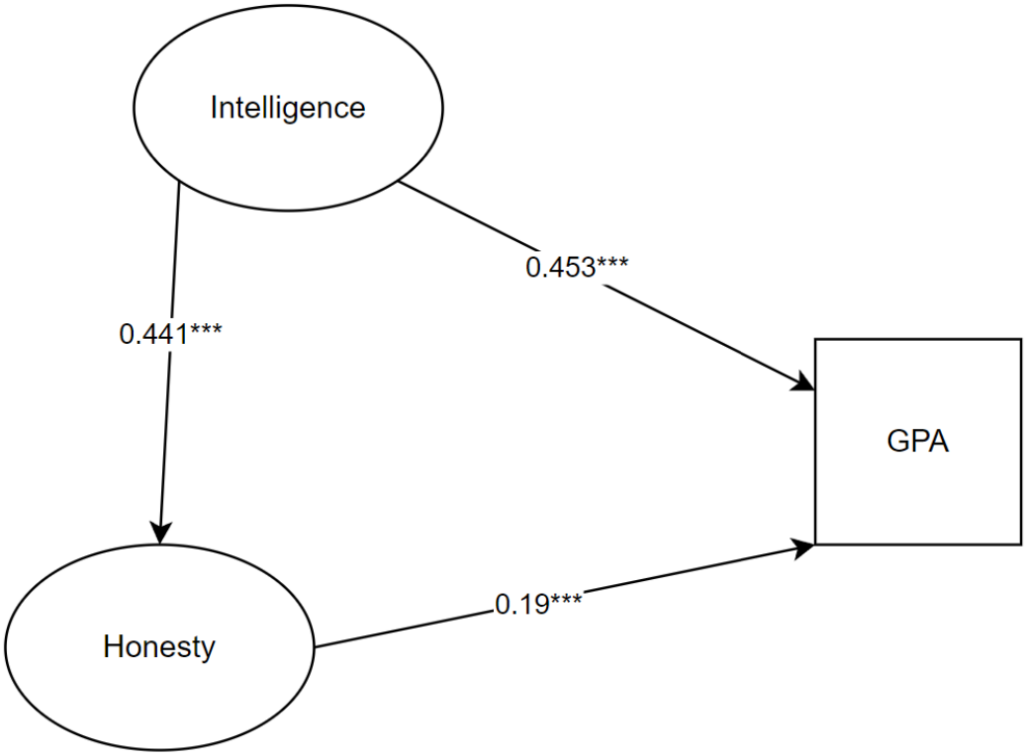

Figure 7: SAM with Honesty as a mediating variable (Honesty Mediator Model). Honesty is a latent variable derived from parent and self-reports, g is a latent variable derived from 12 ASVAB subtests. * = p < .05, ** = p < .01, *** = p < .001.

relationship between honesty and parental SES greatly diminished when IQ was controlled for, but being Black had a negative relationship with honesty. Being Hispanic does not seem to be related to Honesty independent of GPA and IQ. It is unlikely that social desirability bias is causing Blacks and Hispanics to be more willing to admit that they or their child lies or cheats, as Blacks reported their drug use less accurately than Whites (Fendrich, 2005; Hughes et al., n.d.).

It is possible that intelligence also makes you better at lying or that it confers a halo effect on you, causing the correlation between general honesty and intelligence to be overestimated. Notably, the correlation between intelligence and self-reported honesty is much lower (r = .11) than the correlation between intelligence and parent-reported honesty (r = .33) or interviewer-reported honesty (r = .36). However, this could also be due to the fact that peer-reports are generally more valid than self-reports, as some people are not aware of their own personalities.

GPA was a predictor of honesty independent of race and intelligence. It is worth noting that this finding is vulnerable to measurement error confounding (Westfall & Yarkoni, 2016). Imperfect validity and reliability of the intelligence measure would cause any covariate to gain the remaining covariation. As GPA and intelligence correlated strongly (r = .49 in this dataset), this is potentially a problem. Given that GPA was only a marginally weaker predictor of honesty independent of intelligence, this was not judged to be a significant issue.

Two structural equation models were run to compare the two different mediation hypotheses: IQ→Honesty→GPA (Honesty Mediation Model) and IQ→GPA→Honesty (GPA Mediation Model). Both models have identical fits.

Between countries, honesty was predicted by Hofstede's individualism dimension ($\beta = .64, \text{PIP} = 100\%$), national IQs ($\beta = .25, \text{PIP} = 73.6\%$), and masculinity ($\beta = -.35, \text{PIP} = 100\%$). Parking violations per diplomat were only predicted by national IQs ($r = -0.28, p < .001$), given that no other variable reached a posterior inclusion probability of above 0% besides national IQs. It is not surprising that individualism strongly predicts honesty, as it is what would be expected based on psychological theory. Alternatively, this relationship could be confounded by genes, where nations with individualistic norms select for honest individuals.

Data from 226 dutch university students found that conscientiousness ($\beta = 0.28, p < .01$) and honesty-humility ($\beta = 0.19, p < .05$) still predicted GPA after controlling for the other HEXACO personality traits and gender (de Vries et al., 2011). In addition, counterproductive academic behaviour assessed with a 25-item scale was

negatively related to conscientiousness ($\beta = -0.36, p < .01$) and honesty-humility ($\beta = -.36, p < .01$) when controlling for the same confounders. Conscientiousness and humility were weakly correlated ($r = .21, p < .01$). While the relationship between GPA and honesty mirrors the one obtained from our analysis, this data is not able to determine the nature of the relationship between GPA and Honesty.

One of our findings is that the relationship between race and honesty decreases significantly after controlling for IQ, suggesting that some of the race differences in honesty are due to the difference in intelligence. If genetic differences cause differences in intelligence between the races, then it is likely that some of these genetic differences in intelligence are associated with genetic differences in honesty. This is because most of the association between personality variables and intelligence is driven by genetic causes, based on twin studies (Bartels et al., 2012) and that genetic correlations mirror phenotypic ones (Sodini et al., 2018).

5 Implications for further research

Currently, the most plausible theory concerning the association between intelligence and honesty is that it is driven by the negative relationship intelligence has with the p-factor. It should be fairly easy to test whether this is the most influential variable, with this method being to gather self-reports and parent-reports of honesty and personality along with measurements of intelligence. Using this information, it could be examined whether the p-factor is driving the relationship between intelligence and honesty through regression analysis. A similar design can be used to test the theory that moral reasoning or success mediates the relationship IQ has with honesty.

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