The Bell Curve

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INTRO [00:00:00]

Hello, everyone. Today we're going to be talking about *The Bell Curve*. *The Bell Curve* is a 1994 book by psychologist Richard J. Herrnstein and political scientist Charles Murray, and by way of an introduction, here, I'll read the description of the book that's on the back of my copy:

> Breaking new ground and old taboos, Richard J. Herrnstein and Charles Murray tell the story of a society in transformation. At the top, a cognitive elite is forming, in which the passkey to the best schools and the best jobs is no longer social background but high intelligence. At the bottom, the common denominator of the underclass is increasingly low intelligence rather than racial or social disadvantage.
>
> The Bell Curve describes the state of scientific knowledge about questions that have been on people's minds for years but have been considered too sensitive to talk about openly—among them, IQ's relationship to crime, unemployment, welfare, child neglect, poverty, and illegitimacy; ethnic differences in intelligence; trends in fertility among women with different levels of intelligence; and what policy can do—and cannot do—to compensate for differences in intelligence. Brilliantly argued and meticulously documented, The Bell Curve is the essential first step in coming to grips with the nation's social problems.

Even though it is now 25 years old, *The Bell Curve*'s ideas have had quite the lasting impact. Richard Herrnstein passed away shortly before *The Bell Curve* was released, but the other author, Charles Murray, has in recent years, among other things, been on an episode of Making Sense with Sam Harris, [00:01:31] he's been interviewed on Stefan Molyneux's YouTube channel, had his ideas discussed on the Joe Rogan podcast, and regular viewers of My Channel will remember *The Bell Curve* being cited in a recent Steven Crowder video.

At the time of the book's release, the backlash against it in certain sections of the media and scientific community was furious. Dozens of articles were written by scientists and journalists attacking the book, studies were conducted to debunk its claims—whole books were written to debunk its claims actually—and these criticisms were often phrased very harshly. Columnist Bob

Herbert, writing for The New York Times, described the book as a "scabrous piece of racial pornography masquerading as serious scholarship... Mr. Murray can protest all he wants," wrote Herbert, but "his book is just a genteel way of calling somebody a nigger."

This controversy ignited by *The Bell Curve* has also had quite the lasting impact. When Charles Murray is invited to speak at college campuses, for instance, people turn out in protest, often with angry cries of "racist", "eugenicist", and so on. And from the enraged reaction to *The Bell Curve*, a new reader might expect the book to be blatant and unapologetic racist propaganda, a neo-Nazi screed arguing for the supremacy of the high IQ white race, and such things as that. However, when we actually sit down and read the book, things aren't quite that simple. Consider the following quotes:

- "If tomorrow you knew beyond a shadow of a doubt that all the cognitive differences between races were 100 percent genetic in origin, nothing of any significance should change. [00:03:07] The knowledge will give you no reason to treat individuals differently than if ethnic differences were 100 percent environmental."
- "In any case, you are not going to learn tomorrow that all cognitive differences between races are 100 percent genetic in origin, because the scientific state of knowledge, unfinished as it is, already gives ample evidence that environment is part of the story."
- "If the reader is now convinced that either the genetic or environmental explanation has won out to the exclusion of the other, we have not done a sufficiently good job of presenting one side or the other. It seems highly likely to us that both genes and the environment have something to do with racial differences. What might the mix be? We are resolutely agnostic on that issue. As far as we can determine, the evidence does not yet justify an estimate."
- "For virtually all the topics we will be discussing, cognitive ability accounts for only small to middling proportions of the variation among people. It almost always explains less than 20 percent of the variance, to use the statisticians term, usually less than 10 percent and often less than 5 percent. What this means in English is that you cannot predict what a given person will do from his IQ score."

So what's going on here? It seems, from these quotes anyway, that *The Bell Curve* is actually a fairly reasonable piece of work. [00:04:24] These are all relatively mild, middle of the road statements here, so this hardly seems like "a scabrous piece of racial pornography" so far. Charles Murray has used quotes from *The Bell Curve*, such as we have just read, to defend himself and his work against accusations of racism. Murray and other defenders of *The Bell Curve* cast the attacks

on the book as resulting from a cowardly reluctance to discuss what they see as difficult scientific truths. In particular, a reluctance to discuss possible differences in intelligence across designated racial groups. So this is what we're going to talk about today. We're going to take a look at some of the arguments in *The Bell Curve*, discuss some of the most common counterarguments, and see if we can figure out what all the fuss is about. Did *The Bell Curve* deserve its harsh criticism? Or is it the case that its critics simply cannot handle the truth?

Before we get to all that, though, as you can see, this video is rather long. I expect people may have to watch this one in multiple parts. So firstly here, let's just take a second to lay out the format of the video today:

1. First off, we're going to briefly talk about intelligence and intelligence testing and quickly mention a few concepts that are going to be important going forward, such as Spearman's *g* and factor analysis.
2. [00:05:36] Then we're going to introduce *The Bell Curve* and summarize the arguments of each of its 4 main sections as fairly as we can.
3. After that, we'll move on to counterarguments in sections primarily concerned with
    3.1. the concept of a general intelligence,
    3.2. the possible problems with IQ testing,
    3.3. *The Bell Curve*'s calculation of IQ versus environmental factors,
    3.4. and finally, the political arguments and policy proposals found within the book.

I will include time codes to all of these sections below so you can drop out and come back as needed.

INTELLIGENCE

Right, then, let's get started. And if we're going to be reading a book that is about intelligence, we should start off by briefly talking about exactly [00:06:15] what that is. Let's imagine that we want to design an intelligence test from scratch, and to do this, we first have to answer two difficult questions. The first is how exactly do we define intelligence, and this is a particularly tricky thing to do, as we'll see. Let's start with the dictionary definition of intelligence, which is as good a place to start as any, I suppose. And this is from the Oxford English Dictionary, intelligence is "the ability to acquire and apply knowledge and skills." Now our first problem here is that this definition is rather broad.

Think about all the activities and groups of activities that could fall under this definition of intelligence. Is one's ability to solve complicated mathematical sums governed by intelligence? How about the ability to solve a difficult chess puzzle? I'd imagine we'd say those things are associated with intelligence, right? Well, how about the ability to write a great novel or compose a great piece of music? Are those things influenced by intelligence, or would we merely call that "creativity"? Is knowing whether to pass or shoot in a game of basketball or football influenced by intelligence or would we merely call that "talent"? Or are all of these things some mix of intelligence, talent and creativity? [00:07:30] We can certainly imagine a novel that is written intelligently, for instance. Could we say this is some sort of "creative intelligence," or are intelligence and creativity strictly two entirely different concepts?

Is there a difference between memorizing and applying a mathematical function, say, and memorizing and carrying out a piano piece, or a dance routine, or a set of football plays? If there is a difference, what is it? By what metric are we declaring some of those things to be governed by intelligence and others not? Are there such things as social and emotional intelligence? What we might call the ability to read a room, to be aware of the emotions of others, and to react appropriately in interactions with them? Is intelligence involved there, or should we just call that something like "being sociable"?

All the various things I just mentioned can be argued to fall under the umbrella of acquiring and applying knowledge and skills, right? Defining exactly intelligence is a very difficult thing to do, and there is a wide range of opinions among scientists and academics about the best way to go about it.

[00:08:35] Following the publication of *The Bell Curve* and inspired by the harsh criticism it received, a public statement entitled *Mainstream Science on Intelligence* was written by Professor Linda Gottfredson and published in The Wall Street Journal. The statement sets out to outline, "conclusions regarded as mainstream among researchers on intelligence, in particular on the nature, origins, and practical consequences of individual and group differences in intelligence." The statement was sent to 131 researchers of whom 52 signed it, many of whom are themselves cited in *The Bell Curve*. Important for us here is that *Mainstream Science on Intelligence* gives the following definition of intelligence:

> Intelligence is a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience. It is not merely book learning, a narrow academic skill, or

test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings—"catching on," "making sense" of things, or "figuring out" what to do.

My favorite part of this definition is, "among other things", because intelligence is apparently all of this and some other stuff too. My point here is that even among researchers who are cited in *The Bell Curve* and would put their name to a defense of its ideas, intelligence is a very broadly defined concept. And even if we can agree on a definition of intelligence, the second difficult question we have to answer is this - how exactly do we measure it? It's not as simple as testing for some other human abilities. [00:10:16] We can measure how fast someone is by using units of time and distance, and we can measure how strong someone is by using units of weight. But what do you use to quantify how smart someone is? What we need here is an intelligence unit. We need a way to express someone's intelligence as a number.

Now, most people today will recognize IQ as the most common intelligence unit, and let's briefly talk a little about how that came to be. So way back in the old days, if we wanted to determine someone's personality traits & abilities, we could measure their skull, calculate the volume of their brain, or simply look at their facial features. Phrenology, however, has fallen out of favor with scientists of late (although it should be noted the technology sector is currently in the process of reinventing it). Now, I won't be going all that deeply into the history of intelligence testing today, so I'll just start off here by saying that researchers eventually (for the most part anyway) stopped measuring people's skulls and started trying to measure what was going on inside them. The first practical IQ test was invented by French psychologist Alfred Binet in 1905. This test set out to determine the mental age of schoolchildren and was designed with the purpose of identifying those children who were underperforming compared to their peers so they could be given extra help. [00:11:36] Such noble beginnings here.

Now Binet, for his part, stressed that intelligence was affected by environmental factors, was not expressible as a singular fixed numerical value, and was not exclusively genetic in origin. His test was designed to identify those who were struggling in school and not to rank people into some sort of eugenic hierarchy. Binet died in 1911, and has since spent the majority of his time spinning in his grave due to everything else we're going to talk about today. An American psychologist called Henry H. Goddard translated Binet's intelligence test into English in 1908 and distributed thousands of copies of the test across the United States. And in 1916, another American psychologist named Lewis Terman, working for the Stanford Graduate School of Education, revised the test into what we know today as the Stanford-Binet IQ test. Both Goddard and Terman also worked together with other

psychologists to create the Army Alpha and Army Beta tests, which were intelligence tests administered to US military recruits during World War I.

Before we go any further, I'd like to pause for a second and propose a question about our intelligence tests here. How do we know that they are actually measuring intelligence? They're called intelligence tests, sure. But that doesn't necessarily mean they are actually measuring intelligence, does it? As we discussed earlier, intelligence is a very broad concept. [00:13:02] How do we know we're not merely measuring a tiny segment of it?

Well, in the early 20th century, English psychologist Charles Spearman used a statistical technique called factor analysis to identify what he called the *g* factor. Spearman noticed that people's test results across a range of subjects were positively correlated, and reasoned that this was because of an underlying general intelligence factor, which he dubbed *g*. And this *g* factor supposedly underlies all mental performance. So no matter the subject being tested, they are all influenced by this one general intelligence factor. And psychometricians claim that IQ tests measure this *g* factor (psychometricians being people concerned with psychological measurement there). Now, *g* answers both of our difficult questions if you noticed. Thanks to the *g* factor, the vast range of potential human intelligence is no longer a barrier to us testing for it, because it's supposedly all linked to a single underlying factor that is able to be measured and expressed as a single numerical value. It's very handy, isn't it, this general intelligence factor? Suspiciously handy, one might say. But we'll talk more about *g* and Spearman's factor analysis later on.

Now, before we conclude our little history lesson here, there is something else that must be noted. And it's that early proponents of IQ testing in America and elsewhere were not motivated solely by some neutral scientific curiosity. They were eugenicists. [00:14:33] They wanted to use what they could learn from intelligence testing as a way to improve the genetic quality of the human population through what amounts to selective breeding. Henry Goddard, who translated Binet's intelligence test, proposed segregating the so-called feebleminded into colonies separate from the rest of society. And Lewis Terman, author of the Stanford-Binet Test, wrote the following in a 1916 work called *The Uses of Intelligence Tests*:

> Thus far, intelligence tests have found their chief application in the identification and grading of the feeble minded... It is safe to predict that in the near future, intelligence tests will bring tens of thousands of these high grade defectives under the surveillance of society. This will ultimately result in curtailing the reproduction of feeble mindedness and in the elimination of an enormous amount of crime, pauperism, and industrial inefficiency

And tens of thousands of Americans were forcibly sterilized during the last century, and low IQ test results were used to justify many of those sterilizations. The eugenics movement lost a lot of momentum as a result of the Second World War, during which eugenics became irrevocably associated with many of the worst crimes of Nazi Germany. And in the following decades, many countries distanced themselves from eugenics policies, and many scientists became more suspicious of not just eugenics itself, but also the extent of the worth of intelligence testing as a concept. Now, not to spoil the end of my video here, but this is a good chunk of the reason that the reaction to *The Bell Curve* was so harsh. [00:16:08] The idea that we can use intelligence test results in order to inform political policy was, only half a lifetime before the book was written, getting people sent to gas chambers. So it's not surprising that people would be rather suspicious about it. Let's just say that anyone attempting to resurrect this idea needs to be incredibly aware of–and respectful of–exactly where what they're proposing can lead.

So people are fleeing eugenics in droves simply because it was used to justify an indefensible crime against humanity. And scientists are increasingly skeptical of the extent of the usefulness of intelligence testing & IQ, and efforts to rank people according to biology, in general. And all this brings us to *The Bell Curve*—The Empire Strikes Back. And in this book, Herrnstein & Murray come to the defense of IQ and say, *Now everyone, calm down, don't throw the baby out with the bathwater here. Intelligence testing and IQ are important and useful concepts, and crucially, what we can learn from IQ testing should inform our politics and be used to change our society.* So, you know, eugenics, but nice this time.

THE BELL CURVE [00:17:18]

And since we've now arrived at *The Bell Curve*, I think it's time for us to read it. Not all of it right now, we'd be here all day. But I will briefly summarize it here, for the most part using the introductions that precede each chapter.

[00:17:33] In the introduction to the book Herrnstein & Murray begin by talking about intelligence. They offer Spearman's definition of intelligence as "a person's capacity for complex mental work" and argue that general intelligence can be measured by IQ tests, saying,

> Furthermore, the classicists point out, the best standardized tests, such as a modern IQ test, do a reasonably good job of measuring *g*. When properly administered, the tests are not

measurably biased against socioeconomic, ethnic, or racial subgroups. They predict a wide variety of socially important outcomes.

They also defend the practice of IQ testing from critics within the scientific community, notably evolutionary biologist Stephen Jay Gould whose 1981 book *The Mismeasure of Man* was, quoting the back of my copy here, "... immediately hailed as a masterwork, the ringing answer to those who would classify people, rank them according to their supposed genetic gifts and limits." In this book, Gould is highly critical of everything from phrenology & craniometry to modern IQ testing. He argues against the concept of a single general intelligence, and he highlights cases where eugenicists and psychometricians had relied upon bad data and flawed statistical techniques, including the case of Cyril Burt, an early proponent of the use of twin studies for examining the heritability of intelligence, who after he died, was revealed to have just been making up his research data. That's one way to do it, I suppose. *The Bell Curve* was written with *The Mismeasure of Man* in mind and is in some ways a response to its claims. [00:19:08] A newer edition of *The Mismeasure of Man* was printed with an extra chapter responding to the claims of *The Bell Curve*, and a newer edition of *The Bell Curve* was printed with an extra chapter responding, in part, to Stephen Jay Gould. Gould and Murray probably should have just met up and had a fight at this point.

On pp. 22-23, Herrnstein & Murray summarized their main claims about intelligence, which are the following:

1. There is such a thing as a general factor of cognitive ability on which human beings differ.
2. All standardized tests of academic aptitude or achievement measure this general factor to some degree, but IQ tests expressly designed for that purpose measure it most accurately.
3. IQ scores match, to a first degree, whatever it is that people mean when they use the word *intelligent* or *smart* in ordinary language
4. IQ scores are stable, although not perfectly so, over much of a person's life.
5. Properly administered IQ tests are not demonstrably biased against social, economic, ethnic, or racial groups.
6. Cognitive ability is substantially heritable, apparently no less than 40 percent and no more than 80 percent.

And on that last point, Herrnstein & Murray later write in a section titled *How Much is IQ a Matter of Genes?*, "For purposes of this discussion, we will adopt a middling estimate of 60 percent heritability, which by extension means that IQ is about 40 percent a matter of environment."

The Bell Curve - Part 1

[00:20:32] So on to Part 1 of *The Bell Curve*, which is titled *The Emergence of a Cognitive Elite* and introduces Herrnstein & Murray's theory of the cognitive partitioning of society. Since World War II, they argue, colleges in the United States have increasingly admitted people by test score rather than things like social standing or familial connections. Where you could once expect to attend a prestigious college if your father had gone there, for instance; increasingly, you now need to have competitive test scores. This has led to high IQ people being found disproportionately in the top institutions and geographically close together. The job market is also increasingly IQ focused as low IQ jobs are replaced by automation and the best jobs have apparently become more selective of high IQ candidates. IQ is also apparently a very good predictor of job performance. These high IQ people, economically and geographically segregated from the rest of society, are increasingly partnering with each other and–since we're assuming IQ is largely genetic–are producing high IQ offspring. Society is thus stratifying itself into some sort of intelligence based caste system. At the end of Part 1, Herrnstein & Murray summarized their claims by saying,

1. The cognitive elite is getting richer in an era when everyone else is having to struggle to stay even.
2. The cognitive elite is increasingly segregated physically from everyone else, in both the workplace and the neighborhood.
3. The cognitive elite is increasingly likely to intermarry.

The Bell Curve - Part 2

[00:22:05] Part 2 of *The Bell Curve* is titled *Cognitive Classes and Social Behavior*, and here Herrnstein & Murray make the case that intelligence is tied to behavior and predictably determines various things, such as the likelihood of being poor, a criminal, a high school dropout, unemployed, an unwed mother, on welfare, and so on. In order to argue this, Herrnstein & Murray first introduce the source of their data, which is the Armed Forces Qualifying Test or AFQT. This test was taken as part of the 1979 National Longitudinal Survey of Youth. The subjects of this survey were aged 14 to 22 and were administered the Armed Forces Qualifying Test in 1980. Researchers then interviewed the

group over the following decade asking them various questions about themselves. Herrnstein & Murray used the respondent scores on the AFQT to determine the IQ of each person and then used their later interview answers to calculate to what degree a high IQ is correlated with positive life outcomes, and to what degree a low IQ is correlated with negative outcomes. Throughout the rest of this section of *The Bell Curve*, Herrnstein & Murray go further than simply arguing for the correlation between low IQ and those negative life outcomes. They make the case that one's AFQT score correlates with them more strongly than socioeconomic status does. Herrnstein & Murray compare the AFQT scores of each respondent against their calculation of the socioeconomic status of the respondents' parents.

[00:23:34] So as the book *Inequality by Design* puts it - roughly, in *The Bell Curve*, statistical comparisons to parents' class represents "nurture", and the AFQT score represents "nature". Looking at various negative life outcomes like being in poverty, being in jail, being unemployed, and so on, Herrnstein & Murray repeatedly find that for the young respondents to the survey, AFQT score (and by proxy IQ score) is a more accurate predictor of life outcomes than a parent's socioeconomic status. Herrnstein & Murray conclude this section by stating that, "A smarter population is more likely to be and more capable of being made into a civil citizenry."

The Bell Curve - Part 3

Part 3 of *The Bell Curve* is titled *The National Context* and is where things start getting especially controversial. This is the section of the book where they discuss differences in cognitive ability across designated racial groups. They review published literature on differences in racial IQ scores and find substantial differences between the various groups. They discuss the ways in which tests can be biased, culturally and otherwise, but ultimately conclude that these group differences cannot be explained away by bias. In Chapter 15, Herrnstein & Murray talk about how they think cognitive ability in the West is declining, stating,

> Throughout the West, modernization has brought falling birth rates. The rates fall faster for educated women than the uneducated. Because education is so closely linked with cognitive ability, this tends to produce a dysgenic effect, or a downward shift in the ability distribution. [00:25:05] Furthermore, education leads women to have their babies later, which alone also produces additional dysgenic pressures.

Have you ever seen the movie Idiocracy? Because this is just that, basically. Lower IQ people have more children than higher IQ people, so therefore average IQ scores are going down. However, Herrnstein & Murray run into a problem here, which is that IQ scores had been going up, not down, in the decades prior to the publication of *The Bell Curve*. This is known as the Flynn effect, named for intelligence researcher James R. Flynn, who documented it, and we will talk more about *The Bell Curve*'s attempt to account for the Flynn effect later on.

The Bell Curve - Part 4

Part 4 of *The Bell Curve* is titled *Living Together* and is concerned with social policy. This is where Herrnstein & Murray start proposing political solutions to the various problems they outlined in the previous chapters. They discuss, and ultimately brand as ineffective, all contemporary attempts to help disadvantaged children succeed in life. Things like better nutrition, better schooling, a better home environment - all these things can possibly, temporarily make people smarter to a degree, but in the end, Herrnstein & Murray conclude that they will all eventually run into a genetic limit that cannot be worked around. Far more money is spent in ineffective attempts to help the disadvantaged than is spent on the gifted, Herrnstein & Murray contend, and we should thus directly shift the resources upwards to support our best and brightest. [00:26:32] And this quote is from the introduction to Chapter 18: "Some federal funds now so exclusively focused on the disadvantaged should be reallocated to programs for the gifted."

Affirmative action in schools, as it stands, should be scrapped, of course. Herrnstein & Murray argue for a sort of race blind *score-based* affirmative action. They still support colleges accepting applicants from disadvantaged backgrounds, but only if they have comparable test scores to the other applicants. Affirmative action in the job market should also be scrapped, with Herrnstein & Murray arguing that in pursuit of equality, we have actually already overshot it and that black people actually attain better quality jobs than white people (once you account for their IQs, of course). Herrnstein & Murray argue for encouraging low IQ parents to have fewer children in a couple of different ways. Firstly, they argue for making marriage a prerequisite for parental rights, and they also support cutting off welfare for low-income mothers, stating that "We urge generally that these policies, represented by the extensive network of cash and services for low-income women who have babies, be ended."

They also argue more generally in favor of individualism. Concluding Chapter 21 by writing, "Individualism is not only America's heritage, it must be its future." Herrnstein & Murray conclude this part of *The Bell Curve* with the following

> Inequality of endowments, including intelligence is a reality. Trying to pretend that inequality does not really exist has led to disaster. [00:28:04] Trying to eradicate inequality with artificially manufactured outcomes has led to disaster. It is time for America once again to try living with inequality, as life is lived: understanding that each human being has strengths and weaknesses...

And so on.

The Bell Curve - Summary

This is the end of the main text of *The Bell Curve*. Then follows 7 appendices explaining various things about the data and statistical methods used in the book, among other things. Additionally, newer versions of *The Bell Curve* contain an afterword written in response to various criticisms directed at the book by various scientists and journalists, and we will be quoting from that at several points later on.

So then that was *The Bell Curve*, and before we carry on here, I think it would be worthwhile to attempt to summarize the general arguments of the book. So here is my understanding of it in four points:

1. General Intelligence, or *g,* exists. General intelligence is to some degree heritable, innate, unable to be significantly changed, and unevenly distributed both within and across population groups.
2. IQ tests measure *g* fairly and accurately.
3. One's IQ is more important than one's social background in determining one's life outcomes.
4. Given what we can learn from these points, we should implement conservative social policies, such as limiting welfare, incentivizing marriage, abandoning affirmative action, and, more broadly, we should promote a return to a more individualistic society.

Now, I'm sure someone could disagree with the conservative objective in this last point, and argue that Herrnstein & Murray merely promote whatever policies seem to best address the problems they discuss. [00:29:46] They propose better access to birth control, for instance, which is not typically a conservative policy. Overall, though, their policy recommendations definitely lean heavily to the right.

GENERAL INTELLIGENCE

So, it's now time to begin looking at the counterarguments, and we will begin with Point 1 on this list [00:30:03] and talk about general intelligence. So if we want to understand general intelligence, we first need to understand the statistical technique by which it is calculated - factor analysis. And if we want to understand factor analysis, we first need to talk about correlation and causation. Starting with correlation then - correlation is basically statistical association. Stephen Jay Gould in *The Mismeasure of Man*, describes it in the following way:

> Correlation assesses the tendency of one measure to vary in concert with another. As a child grows, for example, both its arms and legs get longer; this joint tendency to change in the same direction is called a *positive correlation*. Not all parts of the body display such positive correlation during growth. Teeth, for example, do not grow after they erupt. The relationship between first incisor length and leg length from, say, age ten to adulthood would represent *zero correlation*—legs will get longer while teeth changed not at all. Other correlations can be negative—one measure increases while the other decreases. [00:31:10] We begin to lose neurons at a distressingly early age, and they are not replaced. Thus, the relationship between leg length and number of neurons after mid-childhood represents *negative correlation*—leg length increases while number of neurons decreases.

And Gould also includes this handy illustration of some example correlation graphs here. Now of course, leg length and arm length are positively correlated because they share an underlying cause, which is simply general biological growth.

However, we can think of plenty of things that are positively correlated and do not share a cause. You might be familiar with the following examples from the page *Spurious Correlations* (which I will link below): per capita cheese consumption correlates with number of people who died by becoming tangled in their bed sheets; number of letters in winning word of Scripps National Spelling Bee correlates with number of people killed by venomous spiders; and so on. Obviously, these things have nothing to do with each other (probably), so some correlations are just chance. It would be an error to assume a shared cause there - "correlation does not imply causation" is the saying. Now, in addition to assuming a shared cause when there is not one, another common mistake here is to ignore a shared cause when there is one. For example, when considering arm and leg length, to ignore the underlying biological growth and assume that legs are getting longer *because* arms are, or vice versa. There are lots of different ways to misrepresent correlations, basically.

[00:32:43] I agree with Gould when he writes, "The invalid assumption that correlation implies cause is probably among the two or three most serious and common errors of human reasoning." Anyway, one result of us calculating the correlation between arm and leg length is that we have simplified the data somewhat. The strong correlation between the two variables means we can basically express them as one, so long as we don't mind losing a little information along the way. But what if, instead of just two variables, we wanted to compare correlations between the size of, say, 50 different body parts? Plotting two measurements in a graph is fairly easy. With the addition of a third measurement, though, things start getting a little trickier.

This figure from *The Mismeasure of Man*, where Gould introduces head measurements into the mix, needs another dimension in order to convey the information. And with more variables added in, the data quickly gets too complex to display with a mere three dimensions. And this brings us to factor analysis. Similar to how we simplified arm and leg length to a single dimension. Factor analysis can be used to reduce a complex system of correlated variables to a smaller number of underlying factors. And you might find that just a few underlying factors explain the vast majority of the variations in a larger number of variables. And furthermore, you could identify which factor explained the majority of the variation. I won't be going into the exact specifics of how factor analysis works. [00:34:16] I couldn't if I wanted to, to be honest. But this is basically how it is used. To quote Gould again, "Factor analysis is a mathematical technique for reducing a complex system of correlations into fewer dimensions."

So, you might be wondering what does all this have to do with intelligence? Well, factor analysis is how psychologist Charles Spearman came up with the concept of the *g* factor. Spearman looked at a big mass of data showing that people's scores on various intelligence tests were positively correlated, carried out a little factor analysis, and identified the most important underlying statistical factor. He then called this *g* or general intelligence. So this *g* is the underlying general mental ability that we are supposedly measuring with IQ tests. However, there are a few problems with this *g* factor.

One is, as *The Bell Curve* itself points out, that it's "based on statistical analysis rather than direct observation." We are inferring its existence from the data rather than measuring it directly, basically. It is the result of a particular statistical method. Secondly, simplifying the majority of the data down to a single factor can actually obscure a lot of useful information. What if the data shows that people who do well on tests of numerical ability tend to do well on other tests of numerical ability, and people who do well on tests of their language ability tend to do better on other tests of language ability. [00:35:46] We can imagine two people who are determined to be statistically as smart as each other, but who excel in completely different areas, right? And there are several different intelligence

theories identifying different clusters of mental abilities: verbal, logical, spatial, mathematical, whatever else. You can go and read about all of those if you're very bored.

But what can we take away from our little chat about correlation and factor analysis here? Well, first of all, factor analysis tells us nothing about causation. It deals with correlations. It can show that there might be common factors underlying different variables, but it does not identify for us why those variables... vary. As a comparison here, let's say you take a sample of 10,000 random members of the public and you test their athletic performance at various physical tests. Amount of weight lifted, length jumped, speed at running various distances, sit ups completed, whatever. And let's say that what you find is that people who perform well on one test relative to the group tend to perform well on the other tests relative to the group, and vice versa for those who perform poorly. Now you could, if you so fancied, subject this data to factor analysis. Identify numerically the most important underlying factor and name it *f* for general fitness or something. And you can probably further assign each person an FQ or fitness quotient. However, what you would not have done is explain why some people are fitter than others.

[00:37:20] You would have said nothing about the heritability of athletic performance, the degree to which genetics and environment contribute to athletic performance, you'd have said nothing about the causes of the data at all. It would be a leap of logic to assume that each person's FQ is innate and unchangeable. The data you have cannot tell you any such thing by itself. You may also find that your singular numerical fitness quotient obscures a lot of useful information. For instance, you might find people who are better at strength exercises tend to be better at other strength exercises, and so on.

So the mere existence of a general factor of cognitive ability would not explain why there are differences between people. In fact, the *g* factor is perfectly consistent with a 100% environmental approach to understanding intelligence. We could play devil's advocate here and say, *Yes, a general factor of intelligence exists and is important, but the variance in 'g' between people is explained entirely by environmental factors - childhood nutrition, socioeconomic status, school quality, and so on.* Absolutely nothing happens in the factor analysis process to tell us about what the causes are for people having different measurable levels of intelligence. And even if we accept a single general intelligence factor exists, that would not necessarily imply a genetic causation.

Heritability

And speaking of genetics, let's next talk about the word "heritability". When *The Bell Curve* says, "Cognitive ability is substantially heritable, apparently no less than 40 percent and no more than

80 percent," [00:38:57] what does that mean, exactly? If we average it for 60%, like they do, are we therefore to assume that each person's individual IQ is 60% determined by heritable genetics and 40% by the environment? Well, no.

Heritability is unfortunately one of those awkward words which has a common use understanding and the scientific understanding which differ in a few important ways. The common use understanding is something like the ability of a thing to be passed down genetically, right? You can inherit being tall or having red hair, but you can't inherit a scar or a finger lost in an accident, say. The technical, academic meaning of heritability is rather different. Heritability is a numerical concept used to estimate the contribution of genetic variance to overall variance of a trait within a group. So basically, heritability estimates the degree to which the variance of a trait within a group is due to genetics.

Height is thus a heritable trait; taller parents will generally have taller offspring, for example, and this is measurable against a population group. Having 2 arms, however, is not a heritable trait, because almost everyone has 2 arms; and for people who don't have 2 arms, that variance is usually environmental in nature. Having 2 arms is genetically determined but it is not a heritable trait, if you follow, because genes account for very little of the variance within the population group.

Something that is very highly heritable, we would say has a heritability of 1. Something that is not heritable at all, we would say has a heritability of 0. [00:40:43] If we say something has a heritability of 0.6, then what we mean there is that 60% of the variance of the trait in a population group will be due to genetic factors. What it does not mean is that 60% of the trait in one individual is due to their genes and 40% due to the environment. Heritability tells us about variance within a group, not the makeup of individuals - it is a population statistic. You cannot meaningfully ask what the heritability of *your* IQ is.

So where am I going with this? Well, there's a couple of points that I'd like to make. The first is that a trait can be determined by your genes and be very lowly heritable, such as the presence of arms. And also the inverse of that - a trait could be very highly heritable and not directly genetically determined. One common example used to illustrate this is earrings. What would we say accounts for the variance in whether people wear earrings within a particular group? Well, depending on the group, most of the variance could be due in one sense to a genetic factor, biological sex. Wearing earrings would therefore be a heritable trait, but this does not mean that there is an earring gene that is being passed down generationally. [00:42:03] The majority of people wearing earrings being women would be due to environmental factors (fashion and gender roles), which are subject to change over time. In more recent years, for example, men in the West have increasingly been

wearing earrings. The heritability of the trait of wearing earrings is thus decreasing, because less of the variance is being accounted for by genetics. But crucially here, nothing is actually happening genetically on the earring front. The change in heritability is down to changing environmental factors.

When we say something is due to genetics, we need to be very careful about exactly what we mean. A useful categorization here is direct vs. indirect genetic determination. We need to be sure to differentiate between things that are directly genetically determined, as in your genes are directly causing some biochemical process to happen within you. And things that are indirectly genetically determined, as a result of your genes interacting with your environment. Women being more likely to wear earrings, for instance, is a heritable trait, but it is not directly genetically determined. This is relevant to us because IQ could be such a trait, where differences in IQ across designated racial groups are caused not by a direct genetic process, but instead, by how our genetically determined characteristics interact with our environment so as to affect our results on IQ tests.

For example, let's imagine your genes cause you to have a particular skin color, and you live in a segregated society in which people with that skin color are discriminated against and do not have equal access to education. [00:43:47] Now that groups' lower results on IQ tests would be, in one sense, because of their genes, and scientists studying genetics might very well find a strong correlation between particular genes and lowered IQ test results. But if we don't take the environment into account, that by itself can't tell us anything. The point here is that a trait could be very highly heritable and correlated strongly with particular genes, and still have zero direct genetic determination.

Now, the idea that wearing earrings can be more of a heritable trait than having ears is admittedly a bit of a difficult concept to grasp at first sight. And I would understand if it took a little time for someone to wrap their head around all this. Right now, though, what I want you to take away from this section, if nothing else, is the idea that something being heritable does not necessarily mean it is actually being directly caused by genetics.

My next point is that heritability estimates the causes of variance *within* a group. It cannot tell us about reasons for differences *across* groups. And to illustrate this, we will paraphrase a thought experiment by geneticist Richard Lewontin. Let's say we take a packet of seeds and plant them in fertilized soil in a controlled laboratory environment, and we ensure that the growing plants have sufficient and equal amounts of water and light [00:45:08] (and doesn't that sound nice). Now, height in plants is a heritable trait just like in humans, and the plants would thus grow to a range of different heights. Height in this experiment would be very highly heritable, because the fact we're ensuring the plants have an equal environment means that the variance in heights in the group is solely down to

genetics. Next, let's say we do that experiment again, only this time we plant the seeds in bad soil and give them less (but equal within the group) amounts of water and light. The thing to understand here is that height in this second experiment would be exactly as heritable as in the previous experiment. All of the plants from the second group have the same group environment. Meaning that, again, the group variance in height would be solely down to genetics. The poor environment will produce smaller plants, but since they are all subject to that environment equally, heritability remains high.

The problems arise when we start trying to compare these two groups. Let's say the second group of plants has an average height that is 15% shorter than the first group, for instance. The heritability of height tells us nothing about why that is. Heritability was the same across both groups. If you're trying to figure out why one group of plants grew larger than the other, saying height is heritable tells us nothing useful. The difference between the groups was entirely down to environmental factors, and heritability, despite being high, played no part. [00:46:43] The two points we can take from this thought experiment are, firstly, the heritability of traits does not account for group differences, and secondly, a trait having a high heritability does not mean that trait is immutable or unaffected by the environment.

For another example of this, height in humans is a highly heritable trait, but the average human height increased substantially over the last century, and this was due to environmental changes such as better health care & nutrition. Or, for another example, North Koreans are, on average, a few inches shorter than South Koreans, and this is down to the different material conditions in those two countries, not some recent radical divergence in genetics. Height is heritable in both North and South Korea, but it's the environment that is the cause of the variance between the groups.

This is something that *The Bell Curve* crucially misunderstands when talking about the heritability of intelligence and IQ. On Page 109, they say, "even a heritability of 0.6 leaves room for considerable change if the changes in environment are commensurately large." The implication here being that higher heritability would be less affected by changes in the environment, and this is just not how it works. IQ could be 100% heritable and still massively affected by changes in the group environment. Professor Ned Block from New York University makes several of these points about heritability in an article entitled *How Heritability Misleads About Race* and then goes on to say,

> I hope these points remove the temptation (exhibited in *The Bell Curve*) to think of the heritability of IQ as a constant (like [00:48:22] the speed of light). Heritability is a population statistic just like birth rate or number of TVs and can be expected to change with changing

> circumstances. These issues are pathetically misunderstood by Charles Murray. In a CNN interview reported in *The New Republic* (January 2, 1995), Murray declared "When I - when we - say 60 percent heritability, it's not 60 percent of the variation. It is 60 percent of the IQ in any given person". Later, he repeated that for the average person, "60 percent of the intelligence comes from heredity," and added that this was true of the "human species," missing the point that heritability makes no sense for an individual and that heritability statistics are population-relative.

So if you don't quite understand all this stuff about heritability, don't feel too bad, because Charles Murray doesn't understand it either. Or at least he didn't 25 years ago. He may have done his homework since then, who knows.

Looking again at *The Bell Curve*'s list of claims about intelligence, the only one on here that could be said to be making a point about genetics is number 6 - "Cognitive ability is substantially heritable." However, as we've seen, a trait being heritable does not necessarily mean a direct genetic cause, it does not tell us anything about the heritability of a particular individual's intelligence, and it cannot tell us the reason for differences between groups of people. [00:49:46] Those differences between people could be caused by environmental factors because– twist–environments are heritable too. As *The Bell Curve* itself points out, "non-genetic characteristics can nonetheless run in families. For practical purposes, environments are heritable too."

General Intelligence/Heritability Summary

So to summarize this section, we have considered the method by which a general intelligence factor is determined and also claims about its heritability. But we can conclude from neither of these things that the variance in intelligence between groups of people has a direct genetic cause. The cause could simply be directly due to the environment, or indirectly by way of how genes are interacting with that environment.

So why am I listing off all the ways in which Herrnstein & Murray do not prove a genetic cause for cognitive ability, you might ask. The later comparisons of IQ and environmental factors assume that IQ is largely genetic in origin, so presumably they do prove it at some point, right? Well, to put it bluntly, no.

In their section *How Much is IQ a Matter of Genes?,* they estimate the heritability of IQ scores by talking about twin studies. We can use studies of identical twins, non identical twins, and regular siblings to estimate the extent of genetic effects upon IQ by noting the differences in correlations

between their scores on intelligence tests. However, there are a few problems with this. Most importantly for us here being that in attempting to learn about genetic cognitive ability via intelligence test scores, we have to make the assumption that intelligence tests are an accurate measure of cognitive ability (but more on that in a moment).

[00:51:30] Even if we assume that the tests do give an accurate representation of cognitive ability, attempts to use these correlations to construct a simple genetic model for IQ run into several issues. Firstly, the IQs of identical twins do not perfectly correlate as we would expect them to, given their nearly identical genetics. The correlation of siblings who are raised apart is weaker than the correlation of siblings who were raised together. And probably most troublesome for a purely genetic model here is that there is also some correlation between parents and adopted children. Their scores correlate to some degree despite there being no immediate genetic link (beyond being the same species, of course). So in our search for exactly how much genetics affects cognitive ability, these observations are only ever going to get us so far. It's very difficult to disentangle the genetic effects from the environmental ones.

What we really need here is genetics research to advance to the point where we understand exactly which genes influence intelligence and to which degree they influence intelligence. When *The Bell Curve* was published, the evidence was not there, as Herrnstein & Murray admit, "The state of knowledge does not permit a precise estimate." And in 2019, twenty five years later, the evidence is still not there. [00:52:50] If anything, with regards to the claims in *The Bell Curve*, particularly its claims about racial differences, the genetic story has only gotten more complicated.

The reason I say "designated racial groups" instead of "racial groups" during this video is because, on a genetic level, our skin-color folk understanding of racial groups can be unhelpful. There can be greater genetic differences within our socially constructed racial groups than between them. I doubt anyone would be so naive as to expect us to one day identify the singular gene that controls both skin color and intelligence. Someone having dark skin and thus being identified and identifying as black could have a whole range of genetic history. You can't read someone's genes by looking at their skin color. This is important for us because the authors of *The Bell Curve* use our socially constructed racial groups in their book. Talking about this, they say,

> What does it mean to be 'black' in America, in racial terms, when the word black (or African-American) can be used for people whose ancestry is more European than African? How are we to classify a person whose parents hail from Panama, but whose ancestry is

> predominantly African? Is he a Latino? A black? The rule we follow here is to classify people according to the way they classify themselves.

It would be a leap of logic to assume genetic explanations for characteristics of self-identified groups, given that those groups could have a wide range of genetic makeups.

[00:54:22] My point with all this is that *The Bell Curve*'s direct evidence of a genetic basis for IQ is missing. Charles Murray's attitude towards this problem in the years since the publication of the book has been to kick the can down the road assuming that he and Herrnstein were "prematurely right" - to borrow a phrase from his afterword to *The Bell Curve*, and that the accumulating genetic evidence will prove him right if everyone just waits a little longer. And it remains his tactic more than two decades later. In October of this year, Professor Ewan Birney, the director of the European Bioinformatics Institute, published a blog post titled *Race, genetics and pseudoscience: an explainer* which discusses, among other things, how our traditional racial categorizations are not reflected in actual patterns of genetic variation, how distinct groups within Africa can be as distinct from each other as they are with non-Africans, how race is not a useful or accurate term for geneticists, and it says that,

> It is often suggested that geneticists who emphasise the biological invalidity of race are under the thumb of political correctness, forced to suppress their real opinions in order to maintain their positions in the academy. Such accusations are unfounded and betray a lack of understanding of what motivates science.

Charles Murray responded to this post on Twitter a few days later, saying, "I can't understand why people are so eager to go public with positions for which the weight of the accumulating evidence is so unwelcome and that will be definitively settled within a few years." [00:55:58] So it seems the evidence, for Murray, is still just a few years away.

With regards to *The Bell Curve*, however, it is possible we are being a little unfair when we criticize it for basing much of its analysis on relatively crude estimations. After all, they do admit the evidence is not there, and they say "If the reader is now convinced that either the genetic or environmental explanation has won out to the exclusion of the other, we have not done a sufficiently good job of presenting one side or the other." We should not criticize scientists for saying the evidence isn't there yet, but here's a rough guess. Presenting such estimates and attempting to disprove them is a key part of the scientific process. Problems arise when we get to *Part IV* of *The*

Bell Curve, however. While it is fine to say *the evidence isn't there yet, but here's a rough guess*. It is not so fine to say *the evidence isn't there yet, here's a rough guess, and based upon this rough guess, you should immediately suspend welfare programs for underprivileged children*. But we'll talk more about this later when we discuss the politics of *The Bell Curve*.

For now, though, let's address the assumption I mentioned earlier when talking about twin studies. We have been in this section assuming that we can measure native intelligence accurately. [00:57:15] If we cannot measure native intelligence accurately, then much of what we've talked about thus far is irrelevant.

IQ TESTS [00:57:21]

So it's now time to talk about IQ tests. So I summarized *The Bell Curve*'s claims about IQ tests as "IQ tests measure *g* fairly and accurately." I wrote "fairly" because of their statement "Properly administered IQ tests are not demonstrably biased against social, economic, ethnic, or racial groups." And I wrote the word "accurately" because of their statement that "All standardized tests of academic aptitude or achievement measure this general factor to some degree, but IQ tests expressly designed for that purpose measure it most accurately."

So firstly here, we're going to discuss a few of the possible problems with IQ tests starting with the various ways in which they can deliver biased results. Now, direct cultural bias in IQ test items is discussed by Herrnstein & Murray in Chapter 13. They use an example of a question that includes the word "regatta", which is a word that might bias the results towards certain cultural and economic groups. And certain historical so-called intelligence test questions have actually been much worse than this. Some of them amounted to nothing more than general knowledge questions. The Army Alpha Test used in World War I asked army recruits to identify what particular celebrities were famous for, in which cities certain cars were manufactured, and the products produced by certain brands. Questions like these obviously have very little to do with any native intellectual ability, [00:58:47] they're just testing whether or not you happen to already know the answer. There's no opportunity to work it out, so any psychometricians constructing intelligence tests certainly need to be careful to not include biased test items like these ones.

Tests can also be biased for instruction. And what do we mean by 'instruction' here? Well simply, whether or not you've been taught the meaning of a word or the best method for solving a math problem is going to matter a lot on a test that requires you to draw upon your mathematical and language abilities. As an example here, I'm going to assume that we all agree it would be unfair to expect a random teenager to, by themselves during a test, invent trigonometry. If you include

trigonometry questions on your intelligence test, what you'll be testing for there will not solely be the intelligence of the respondents, but also whether or not they've been taught trigonometry before, how recently they were taught it, and how well they were taught it. This is relevant for us here because the Armed Forces Qualifying Test, which is the primary source of intelligence test data in *The Bell Curve*, had, as one of its four sections, a mathematics test, which included questions examining knowledge of classroom trigonometry and algebra. This is more of a test of scholastic aptitude than native intelligence, and is also testing - by proxy - the quality of the teaching at the different schools that the AFQT respondents went to. [01:00:12] We can't assume that to be equal across thousands of different people, can we? This is one of a few problems with the AFQT that has roots in the fact that it was not designed as an IQ test, but more on that in a second.

Another way that IQ tests can be biased is for speed. Think of the definitions of intelligence we've seen so far. A "capacity for complex mental work", "catching on", "making sense" of things, and "figuring out" what to do. And simply because of the way IQ tests are administered, we have to add the words "within the time constraints of an academic test" to all of those things. IQ tests are, by their nature, biased towards how fast you can think and away from other important qualities which contribute to overall cognitive ability, such as stamina, determination, and discipline. Similar to that point, IQ tests have a more general bias towards familiarity with an academic environment. People unfamiliar with taking tests are going to fare worse than people who are very used to it, simply due to being in an unfamiliar environment. Things like anxiety and stress come into play here. Those can affect intelligence test results despite having nothing directly to do with intelligence themselves.

Herrnstein & Murray are particularly aware of that last point, and we need to briefly discuss the Flynn effect here. So when IQ tests are constructed, they're standardized using a sample of test takers. [01:01:36] Now what that means, in practice, is the testers will test some people, work out the average score, and set that to correspond to 100. This is why we recognize an IQ of 100 as the average. When those IQ tests are later revised or when new IQ tests are designed, they're also standardized on new groups of people and their average is set again to 100. However, researchers noticed that when newer test subjects take the older versions of a test, their IQ scores are, on average, higher. So IQ scores have gone up over time, basically. Meaning if you believe that IQ tests measure intelligence, then people must be getting more intelligent, right? This is troublesome for Herrnstein & Murray, because they argue the opposite - that cognitive ability is deteriorating. And this brings us back to our point about bias towards an academic environment. Addressing the Flynn effect, Herrnstein & Murray write the following:

> There is a further question to answer. Does a 15-point IQ difference between grandparents and their grandchildren mean that the grandchildren are 15 points *smarter*? Some experts do not believe that the rise is wholly, perhaps not even partly, a rise in intelligence but in the narrower skills involved in intelligence test taking per se.

So this, if it were true, would mean that people are actually getting less intelligent, but at the same time, they are getting better at taking IQ tests.

Now, you might say, isn't that a huge contradiction? Aren't they basically admitting that IQ tests measure something other than inborn intelligence? After all, if IQ tests supposedly measure native cognitive ability accurately, how could scores be going up while cognitive ability is going down? However, to be fair to Herrnstein & Murray, it would be hasty to dismiss their dysgenics hypothesis outright. [01:03:25] There is another possibility here, and it's that people are getting genetically less intelligent, but the environmental factors affecting intelligence have undergone such large changes that their positive effects upon IQ are more than accounting for the downward genetic ability shift. So roughly, we would have lost a genetic IQ point thanks to dysgenics, but gained 2 back thanks to a better environment.

So what evidence does *The Bell Curve* produce in support of this downward trend in genetic cognitive ability? Well, unfortunately for Herrnstein & Murray, their main source of data, the National Longitudinal Survey of Youth is not much use here. Ideally, what we want to do is give IQ tests to the children of women who took part in the AFQT so we could directly compare child to parent and see if any downwards shift was happening. However, this would be a mistake, as since our data is coming from the National Longitudinal Survey of Youth, the respondents are appropriately young. People who wait longer to have children are typically wealthier and better educated, and thus tend to have children with higher IQs. Limiting ourselves to looking at only young mothers will skew the apparent IQ of the next generation downwards, so it would be an inaccurate thing to do.

[01:04:45] Herrnstein & Murray are, thankfully, well aware of this problem. Not that it stops them from trying, however. Herrnstein & Murray's dysgenics hypothesis is discussed in *Intelligence, Genes, and Success: Scientists Respond to The Bell Curve*, a 1997 book which responds to many of the points made in *The Bell Curve*. The authors of that book, for their part, find no direct empirical evidence either for or against a dysgenic effect acting upon cognitive ability, stating that, "... insofar as we are aware, there is nothing but anecdotal evidence for dysgenics."

Anyway, let's get back on track. Now to illustrate another way IQ tests can be biased, I think it would be a good exercise for us all to briefly take a very simple one question test together. So get

your pencil and paper ready, folks. Here it is. Easy, right? An incredibly simple number sequence question there. The sort you'd expect nearly anyone to be able to work out. It's also a fair and unbiased question, of course. I mean, everyone was given the exact same question and the exact same amount of time to answer it, right? What could be more fair and unbiased than that? Now, of course, this question is not fair. It is biased in favor of Japanese people (and anime fans, I guess). The point here is that this question would, in any language, be biased against people who don't speak that language. [01:06:12] A question in English is biased against people who don't speak English, isn't it? Now you might protest, this seems like a very obvious point. I mean, surely nobody is going to give an IQ test in English to a group of people who are not fluent in English and then try to pass off those results as legitimate, right? Well, stay tuned, folks.

One point not given due consideration by *The Bell Curve* during their discussion of testing bias is that even a completely unbiased test, were it possible to construct such a thing, would still deliver biased results if it were being carried out in a biased system. When Herrnstein & Murray say properly administered IQ tests are not demonstrably biased, they seemingly mean that the tests themselves do not contain words like "regatta," not that the tests necessarily deliver fair results. So that is another potential problem with IQ tests to watch out for. Even if we eliminate as much cultural bias as possible from the test, we could still–thanks to the wider environment the tests are taking place in–be receiving biased results. For instance, if you carried out an IQ test in a racially segregated white supremacist state, that environment is obviously going to affect the average IQ scores of different designated racial groups. Now you might protest, this also seems like a very obvious point. I mean, surely nobody is going to carry out an IQ test in a racially segregated white supremacist state and then try to pass off those results as legitimate, right? Again, stay tuned, folks.

[01:07:45] Now, keeping in mind all the various possible problems with IQ testing that we've just discussed, let's take a look at a few of the IQ tests that Herrnstein & Murray cite as evidence for claims in *The Bell Curve*. Surely they will be properly administered, right? After all, Herrnstein & Murray themselves discuss many of the same issues that we just have. It would follow that given their familiarity with these potential problems, they would, of course, endeavor to avoid them. So let's see how they do on that front. We'll take a look at a particular section of *The Bell Curve* now, see what the claims are, and then have a bit of a dig into the source's backing up those claims. And this is from a section titled *How Do African-Americans Compare with Blacks in Africa on Cognitive Tests?* And I quote,

> This question often arises in the context of black-white comparisons in America, the thought being that the African black population has not been subjected to the historical legacy of American black slavery and discrimination, and might therefore have higher scores.
>
> ... Richard Lynn was able to assemble eleven studies in his 1991 review of the literature. He estimated the median Black African IQ to be 75, approximately 1.7 standard deviations below the U.S. overall population average, about 10 points lower than the current figure for American blacks.
>
> [01:09:04] ... In summary: African blacks are, on average, substantially below African-Americans in intelligence test scores. Psychometrically, there is little reason to think that these results mean anything different about cognitive functioning than they mean in non-African populations. For our purposes, the main point is that the hypothesis about the special circumstances of American blacks depressing their test scores is not substantiated by the African data.

So this is how Herrnstein & Murray's answer to those who point to the legacy of slavery and discrimination in the United States as an explanation for the differences in IQ scores between its black and white populations. They point to black people in Africa and say, *Hey, well, they also got lower scores. Black African people haven't been subject to discrimination–in America–after all, so doesn't this prove that discrimination–in America–can't be depressing black IQ scores?* Well, not really. Herrnstein & Murray's decision to limit their concern here to *American* black slavery and discrimination is a huge oversight, because there could also be discrimination in whichever parts of Africa they are talking about, if you follow, that could be, in a similar way, depressing the scores there too. If that were the case, attempting to use the African data as some sort of control test for the American data would be fairly ridiculous, to say the least. America does not have a monopoly on discrimination and oppression, does it? And so we need to ask - which parts of Africa are they talking about?

They say that "Richard Lynn was able to assemble [01:10:37] eleven studies in his 1991 review of the literature." Now, Herrnstein & Murray claim, in the acknowledgments at the start of *The Bell Curve*, to have "benefited especially from the advice" of this Richard Lynn, who they elsewhere call "a leading scholar of racial and ethnic differences." And they cite his work several times throughout the book. So let's take a look at Richard Lynn's 1991 review of the literature entitled *Race differences in intelligence: A global perspective*, which was published in *Mankind Quarterly*. (And remember the name of that journal, folks, as we'll be talking more about that later on)

So the first thing we'll notice about this review is that it unfortunately designates people as either Caucasoids, Mongoloids, or Negroids, including quote "hybrids" of those groups, for instance, "Caucasoid-Negroid hybrids," and so on. I can only apologize for having to read out this rubbish. So let's look at the 11 studies included in this review and see which areas of Africa we are concerned with. Well, there's one from what was then known as the Belgian Congo, one from Ghana, two from Nigeria, one from Uganda, one from Zambia, and five from South Africa. And there is rather a lot to comment on here, but how about we start with sample sizes? Some of them are rather small, you may have noticed. 87 people for Nigeria, 50 people for Uganda, and so on. [01:12:01] By far, the most represented area here is South Africa. The number of people tested in South Africa was more than double the number of all the other subjects combined. And what's the significance of this? Well, this review was published in 1991. South African apartheid ended in 1994.

Now, I don't want to get too deep into this right now, but for those who don't know, apartheid was an explicitly white supremacist system of enforced racial segregation. Non-white South Africans were openly discriminated against, forced from their homes, forbidden to live in certain areas and hold certain jobs, and–most importantly for us here–had to attend segregated schools which were massively underfunded compared to the schools that the white South Africans went to. Many being without electricity or even running water. And just so we know the sort of education system we're dealing with here, I'll quickly quote some relevant passages from *South Africa: a country study* from the Library of Congress:

> The Bantu Education Act (No. 47) of 1953 widened the gaps in educational opportunities for different racial groups. Two of the architects of Bantu education, Dr. W.M. Eiselen and Dr. Hendrik F. Verwoerd, had studied in Germany and had adopted many elements of National Socialist (Nazi) philosophy. The concept of racial "purity," in particular, provided a rationalization for keeping black education inferior. Verwoerd, then minister of native affairs, said black Africans "should be educated for their opportunities in life," and that there was no place for them "above the level of certain forms of labour."
>
> [01:13:38] ... The Bantu Education Act (No. 47) of 1953 helped pave the way for labor strife in the 1980s and the 1990s by institutionalizing a plan to restrict black workers to low-paid jobs through deliberately inferior education. During the 1960s and 1970s, per capita spending on white pupils was about ten times greater than educational spending on black pupils. By the early 1990s, the gap had been reduced by half, but in general, standards for

teacher qualifications and facilities in black schools continued to be inferior to those in white schools.

... The discrepancies in education among racial groups were glaring. Teacher:pupil ratios in primary schools averaged 1:18 in white schools, 1:24 in Asian schools, 1:27 in coloured schools, and 1:39 in black schools. Moreover, whereas 96 percent of all teachers in white schools had teaching certificates, only 15 percent of teachers in black schools were certified. Secondary-school pass rates for black pupils in the nationwide, standardized high school graduation exams were less than one half the pass rate for whites.

You get the point, I think. So, what Herrnstein & Murray have done here in attempting to prove that a history of racial discrimination in America is not depressing black IQ scores is point to a study citing similar scores in a system of open racial discrimination. This is utterly ridiculous, obviously.

Anyway, we're now going to take a look at some of these studies compiled by Richard Lynn, and we'll start with this one, [01:15:05] Wober (1969), which apparently reported an IQ score of 86 from Nigeria. And here it is, *The Meaning and Stability of Raven's Matrices Test Among Africans*, and let's read a little of that:

This paper aims to clarify our understanding of factors affecting African scores on ability tests, Raven's Matrices in particular. Though the main burden is theoretical, some fresh data from Nigeria will be shown.

... During 1965, a testing program was carried out among factory workers in Nigeria. The results from 86 men will be reported here. They were tested individually in English, or pidgin, by the author with the aid of a trained Nigerian assistant. Among the test battery were Raven's progressive matrices and an adapted Embedded Figures Test (EFT), which with an index of educational attainment, are explained by Wober (1967a). Six months after the tests, each man was given the Matrices again. There was no intervening coaching, and the test was given as though it was to be a new experience, with full instructions repeated (and evidently equally necessary in most cases, as previously). Men were not overtly asked to pit their present against their previous efforts. Results were presented in Table 1.

... The relation between retested Matrices and EFT is significantly greater than between the initial Matrices Testing and EFT, even though in the former comparisons the tests were done six months apart. Table 1 shows that the overall differences in retesting were significant and suggests that improvements were found particularly among the lower initial scorers. Taken

with the improved EFT correlation in Table 2, [01:16:38] a strong case can be made that the second testing gave a distinctly more valid measure of whatever abilities the Matrices and EFT involve.

So to quickly summarize, in 1965, researchers gave 86 Nigerian factory workers the Raven's Progressive Matrices test and then gave it to them again six months later. The second time they took the test, they performed better overall and the results better correlated with another test they took called the EFT. And Table 1 here shows both mean results - 15.9 the first time increasing to 18.73 the second time. What is missing here, you may have noticed, is an IQ score. This study does not report an IQ score for anyone involved in the test, it reports their scores on the Matrices test. So why then does Lynn's review cite Wober (1969) as having reported an IQ score of 86? Well, looking at Table 1 - 86 men took the test, do you see? Now, most likely here, this is a simple typographical error, and Lynn, or whoever typed up his data, accidentally wrote the number of test subjects in the IQ field. Regardless, though, Lynn's review is not accurately reporting the IQ score from Wober (1969), because there wasn't one. Lynn cites Wober (1969) again in his later book, *IQ and the Wealth of Nations*, where he says, "In 1965, norms for the standard, progressive matrices were collected by Wober (1969) for a sample of 86 adult men. [01:18:07] Their mean score was 15.9." And then he later claims that this equates to an IQ of 64.

Now there are several lies by omission here. Firstly, Wober (1969) did not report a mean score of 15.9. It reported a mean score of 15.9 *and* a mean score of 18.73. It showed how scores go up with retesting, and additionally, it claims that "a strong case can be made that the second testing gave a distinctly more valid measure of whatever abilities the Matrices and EFT involve." Lynn intentionally chooses to only report the lowest score here. Another lie by omission here is that Lynn declines to mention that the sample of 86 adult men were not randomly drawn from the general Nigerian population. They were not an accurate representation of the society where they lived, and nor were they intended to be, they were all factory workers. Reporting the test results of only 86 men who are all employed in the same job as representative of a country which, at the time, had a population of 50 million people is rubbish. Just rubbish.

Next up, let's talk about this result, an IQ of 75 for people in Zambia cited from Pons (1974) and Crawford Nutt (1976). [01:19:27] So the 1976 paper from Crawford Nutt is titled *Are black scores on Raven's Standard Progressive Matrices an artifact of method of test presentation?,* and opens by saying that previous research

> ... have shown that when the method of test presentation ensures that testees understand adequately the requirements of the test situation, when the method also makes certain that the testees know how items of the test are to be responded to, and when the method reduces the anxiety of the subject's about being tested, then the results obtained from the administration of the test are remarkably different from those that result from administration in which the same test is presented in the same way to all testees regardless of their cultural origin.

It goes on to detail how a researcher named Pons gave the Raven's Standard Progressive Matrices test to a group of Zambian copper miners in 1962 using the standard method of delivery. Then later, Pons administered the test again to another group, only this time using a different method of test presentation. As Table 1 shows, the second group showed a rather dramatic difference in score. Now, the thinking behind all this might be that a group of Zambian copper miners aren't necessarily going to be all that familiar with taking academic tests (not to generalize). And if you want more accurate results, it might be worth taking the time to actually explain to them what it is that they're being expected to do. [01:20:51] Now, Crawford Nutt claims that the different method of presentation did not alter anything about the test itself and is based upon suggestions found in the 1960 *Guide to the standard progressive matrices* written by John C. Ravan, a.k.a. the guy who invented the Raven's Progressive Matrices test.

After reporting the findings of Pons, Crawford Nutt takes things one step further and tests a selection of pupils from a long established high school situated in the black residential area of Soweto near Johannesburg, a school that is described as having high standards and whose students would be used to being tested. Crawford Nutt tested two samples of these schoolchildren using the same presentation method as described by Pons, and the results received were actually slightly higher than the equivalent age range of the white group on whom the test was normalized. Now you might say, what has Crawford Nutt actually proved there? Test results go up the closer you get to a good school, I suppose. This shouldn't be surprising anyone. If you test a relatively uneducated group of copper miners, you get one result. Do that same test in a competitive academic institution, and you will get a higher result. By changing the method of test presentation and changing the group which you are testing, you can get a whole range of results. This is why researchers don't usually test people in just one area, one workplace, or one school, and then try to pass off that singular result as representative of the entire country that they live in. [01:22:21] That would be a remarkably ignorant thing to do.

Speaking of, back to Richard Lynn and his claimed IQ of 75 for Zambia, which cites both Pons and Crawford Nutt as the source of the data there. So how did that happen? Well, what Lynn does is

he cites the much lower results from the research carried out by Pons, which are presented in Crawford Nutt's paper, and then completely ignores Crawford Nutt's experiment in the school which reported results above the white norm. The entire point of Crawford Nutt's paper goes totally unmentioned by Lynn, who simply extracts the data that he wants and discards the rest. He had data showing a black African test score that was above the white norm, and he simply decided to ignore it. Also, like the previous paper we discussed, this study did not report IQ scores for the testees. Those are simply concocted by Lynn out of the Raven's Progressive Matrices data using a sophisticated statistical technique called guessing.

So to understand what Lynn has done here, we need to talk a little about IQ test construction and standardization. And let's start with the bell curve - not the book this time, but the statistical distribution. Now, IQ tests, as we know, return this bell curve or 'normal distribution'. This means that the majority of the scores are clustered around the middle and taper off towards the ends of the curve in a symmetrical way. [01:23:49] But why, you might ask, do they actually return this distribution? Well, it's because that's how they're designed. Psychometricians design IQ tests so that their results match the bell curve. If the test they design is too easy, then the bell curve will lean to the right as too many people will get high scores. If the test is too hard, it will lean to the left as too many people get low scores. And if the test doesn't differentiate between people to the right degree, then too many people could be at either end of the curve. So the test designers tinker with the difficulty of the test until the results match the bell curve. So why do psychometricians do this? Well, it's because that's how they assume intelligence is distributed throughout the human population. Emphasis on 'assume' here, because we do not actually know how intelligence is distributed throughout the human population. Unless you specifically design for it, tests do not necessarily return a bell curve distribution.

For example here, the Armed Forces Qualifying Test used in *The Bell Curve* did not return a bell curve distribution. It was, after all, designed to test readiness to join the armed forces, not IQ. As a result, it does not differentiate between people to a large enough degree. So Herrnstein & Murray, to make the results conform to a bell curve, recalculated the scores. Here is a graph of the raw AFQT scores overlaid with Herrnstein & Murray's recalculated bell curve scores from the book *Inequality by Design*. [01:25:20] And as we can see, too many people scored too highly on the test, and there isn't enough differentiation between people on the upper end of the scale in particular. So yes, that's right, in the book, *The Bell Curve*, the principal intelligence test the authors use as a source, did not return a bell curve distribution. To transform these results into a bell curve, Herrnstein & Murray exaggerated the slight differences at the end of the scale. They basically gave extra credit for being near the tails

of the bell curve and less for being in the middle. They did this as they explain in Appendix 2 to correct for skew. But remember, in relation to how intelligence is distributed throughout the human population, these results are only actually skewed if we assume that intelligence is distributed in a bell curve to begin with. This is circular logic. We are assuming the result that we are going to get beforehand and then designing the test or just manipulating the data in order to reach that conclusion.

Anyway, to get back on track here, what does all this have to do with Richard Lynn and the Raven's Progressive Matrices test? Well, that test also does not return a bell curve distribution. The results "are not symmetrically distributed around their mean," to quote an article by psychologist Leon Kamin. That article also notes that "The test's developer, John Raven, always insisted that the Progressive Matrices scores cannot be converted into IQs." [01:26:44] Here is an example of the distribution of matrix test scores from Raven's paper *Standardisation of Progressive Matrices* (1938), and, as you can see, those are some very wobbly bell curves right there. What the test does give is raw scores, which correspond to percentile scores, so you can know from your raw score how you compare percentile-wise to the group on which the test was normalized. But these percentiles will not be distributed evenly around their mean in a bell curve. To calculate IQ, Richard Lynn takes the average of these raw scores, converts them to a percentile score and then gives what the IQ of that percentile score *would* correspond to, if the results *were* in a bell curve distribution. Basically, Lynn is assuming a bell curve exists where they're demonstrably isn't one and is forcing the data to fit it.

Another issue here is that in the decades since the Second World War, scores on the Raven's Matrices Test, similar to IQ test scores, had been changing. Accordingly, the test had been standardized several times. So when we're comparing the African results with Western norms, we need to identify what norm group we're using, because comparisons with different groups from different times could give different results. Particularly sharp-eyed viewers would have noticed that Lynn does exactly this in the quote from his 2002 book *IQ and the Wealth of Nations*, which I showed earlier, where he discusses Nigerian IQ as "in terms of the British 1979 standardization." Identifying this standardization is important, as using a different one could lead to a different Nigerian IQ being calculated. In his 1991 review of the literature (cited in *The Bell Curve*), [01:28:29] however, Lynn does not identify what standardization he's using for the various tests he is comparing. What this means is that there is a gap in Lynn's calculations that can only be filled by faith in his academic honesty–which Herrnstein & Murray clearly have, but I must confess that I do not. Anyway, if you think what Lynn did to those last two studies was bad, strap in, because this next one is a real bastard.

South Africa - IQ of 69, attributed to Owen (1989), which Lynn calls, "The single best study of the Negroid Intelligence." So this is *Test and Item Bias: The Suitability of the Junior Aptitude Tests as a Common Test Battery for White, Indian and Black Pupils in Standard 7* (Owen is not one for catchy names, apparently). The abstract to this study starts out, "This study was undertaken to shed light on problems concerning the construction and use of a common test battery for various South African population groups." You see, this study is testing a test, the Junior Aptitude Test, or JAT, which was standardized for white pupils in South Africa, and determining whether it's also a good test to give to non-white groups. [01:29:41] The study selected various schools in South Africa for white, Indian and black students. Although, it should be mentioned, it was not able to use the majority of the selected black schools "owing to the unrest situation", and thus they had to test black schools in the KwaZulu region, one of the areas designated for black inhabitants of South Africa under apartheid. I mentioned the unrest situation here as a reminder that, yes, these tests are being carried out under apartheid, and protests and demonstrations against the segregated school system were ongoing. So anyway, the study examined pupils' performances on the various subtests comprising the JAT. And what were the findings? Well, the thing I think we should mention first here is that the tests were given to the black students in KwaZulu in English only, and several test sections of the JAT relied very heavily upon language ability. Now, Owen expected language ability not to matter in the tests because the black students in the KwaZulu region had ostensibly been learning English in their schools. Owen apparently either doesn't know or disregards that these schools often didn't have necessary teaching equipment, only a small amount of their teachers were certified, and that pupil teacher ratios were more than double that of the white schools. And to quote the study,

> ... language was not expected to play a significant role in test performance in this investigation. However, the results showed that this assumption was completely wrong. [01:31:03] In fact, language played such an important role, and the knowledge of English of the majority of black testees was so poor that certain tests, for example, the JAT 4 (Synonyms) and the JAT 8 (Memory: Paragraph) proved to be virtually unusable.

And let me just quote that again, "certain tests... proved to be virtually unusable." Owen also writes elsewhere, "the results of the current investigation clearly show that language played a prominent role in all the tests containing language items," which is a wonderful "multiple stab wounds shown to shorten life expectancy" bit of academic obviousness there. Language ability was not the only way in which the Junior Aptitude Test was biased, however. In a section entitled *Item Bias in the Tests of the*

JAT, Owen notes several ways in which the tests were culturally and economically biased. For example, he here lists several test items on the first test in the JAT and states, "A common element in most of these items was that they presuppose knowledge or a degree of knowledge on the part of the testee," and mentioned such things as "electrical appliances," "microscope[s]," and "Western type[s] of ladies' accessories." Going on to write, "Thus, in the case of both the Indian and black testees, it seems that the single largest cause of bias lay in the fact that the pupils were not familiar with the objects represented by the pictures. Cultural and SES [socioeconomic status] factors probably also played a role in this regard."

[01:32:31] So this test is biased, then. The study examining it *says* it is biased. But according to Richard Lynn, this is "the single best study of the Negroid intelligence." This is the best one. The one that tests segregated schoolchildren in a non-native language and calls its own results virtually unusable. In Lynn's review, this is the most important study for his estimates of black African IQ. Writing about it, he says, "The mean IQ of the sample in comparison with Caucasoid South African norms is 69. It is also around the median of the studies listed in Table 3. It is proposed therefore to round this figure up to 70 [why?] and take this as the approximate mean for pure Negroids." God damn. What Lynn has done here is ridiculous. He has taken 11 studies from a period between 1929 and 1991 with vastly different sample sizes, reporting data from different tests, most of which didn't even report IQ scores. Transform the data into what he *reckons* the equivalent IQ scores were using some unknown standardization. Picked one that was sort of near the middle, and said that's the average black African IQ. This is outrageous. It is a crime. It might actually be a crime, and if it's not, it should be.

Now I am far from the first person to criticize *The Bell Curve*'s reliance upon Richard Lynn as a source. Various academics were already well aware of Lynn and his dodgy data, so when Herrnstein & Murray cited him, they were immediately attacked with accusations of bias and racism. [01:34:12] Charles Murray responds to these attacks in the afterword to *The Bell Curve* and his defense is laughable. His first defense is to say that "The topic of African IQ is a tiny piece of *The Bell Curve*–three paragraphs on pp. 288-289." And in regards to this, two responses jump to mind immediately. The first is to say, Well, maybe you should have spent longer on it, then, Charles. *We were wrong very quickly* isn't a defense against being wrong, is it? Maybe if you put a little more effort in, you would have seen that Lynn's paper was a load of rubbish. Secondly, this part of *The Bell Curve* is far more important than Murray makes out. He uses Lynn's paper to dismiss the arguments that black-white differences in IQ are caused by environmental factors such as a history of oppression, which is the single most common counterargument to one of the principal claims in the

entire book. At no point does Murray actually address any specific criticisms of Lynn's work or any of its various errors. He mainly just seems outraged that anyone dares to have criticized him at all, to be honest. And it's exactly this sort of academic laziness that fed much of the angry response to *The Bell Curve*. Murray refuses to admit that citing Lynn was a mistake and simply throws out some newer studies that supposedly show he was right anyway. [01:35:28] So there.

This speaks to a couple of things. Firstly, it is a fatal underestimation of exactly how badly this damages the faith that a reader of *The Bell Curve* can have in its authors. After all, this is not the only time they cite Richard Lynn. He has more than 20 citations in their bibliography, and they thank him specifically in the acknowledgments. If this is the sort of data that Charles Murray is willing to accept as legitimate, how can we trust anything he says anywhere in the book? How can we trust the new studies he brings up to defend Richard Lynn? Personally, I think it will be a mistake to even look at these new studies. Murray's response to having his previous sources called into question is to simply throw out new sources. His response to having these called into question would no doubt be to throw out more. The responsibility for checking whether his sources are trustworthy or accurate has been moved from Murray to his critics. They're the ones doing the reading and the fact checking, whereas he never gets held to account. So long as we all understand that, however, I suppose we can take a brief peek.

So Murray says, "...let me turn to two studies postdating Richard Lynn's review that we cite on p. 289. One was a South African study led by Kenneth Owen published in the refereed British journal *Personality and Individual Differences*." [01:36:48] So this was *The suitability of Raven's standard progressive matrices for various groups in South Africa*. A paper that was published in *1992*, so we are *still* in apartheid South Africa, and this study tested black students from the KwaZulu region, the same as one of the studies from Richard Lynn's review. It even has the same author. So, this is not a great showing with the first study here. Murray introduces the other study by saying, "The second example of a recent, careful study was conducted by a black scholar, Fred Zindi, and published in the *Psychologist*. It matched 204 black Zimbabwean pupils and 202 white English students from London inner-city schools for age (12–14 years old), sex, and educational level, both samples being characterised as 'working class,'" and then goes on to say that the white students from London got higher test results than the black students from Zimbabwe.

However, Murray takes a cue from Richard Lynn and leaves out all the context. The main thing here being that Zimbabwe was a British colony known as Rhodesia until it gained independence in 1980 following a 15-year civil war. Rhodesia was a discriminatory, racially segregated state. 12–14 year olds in 1994 would have been born around the time of Zimbabwe's independence to parents

who were raised and educated in a segregated British colony, which makes the comparison to the children of Londoners all the more ridiculous here. [01:38:18] The children of the colonized country are being measured against the children of the colonizing country. Fred Zindi, the professor who authored the study, more recently spoke about his earlier work in the following way:

> For many years, African countries have depended upon the use of western designed psychometric instruments such as Raven's Progressive Matrices [and some others]... Such tests, standardized in Western cultures using western cultural values, have been found to be useful to a certain extent. In many cases, interpretation of results from Western designed tests have however been distorted to suit Western stereotypes about other nations (Zindi, 1994).

A very important point which Lynn and Murray would do well to take on board. Murray reveals a misunderstanding of the criticisms raised against *The Bell Curve* when he goes on to say that "The problem is not, as often alleged, that such studies are written by racists (in the two instances just cited, a charge belied by Owen's scholarly reputation and by Zindi's race) but that the African story is still so incomplete." What Murray gets wrong here, beyond the implication that a scholarly reputation could not also be accompanied by racism, is that the allegation is not that these studies are written by racists. It's that the studies are being deliberately misinterpreted and misrepresented by racists. Racists like Richard Lynn, who strip from the studies all context and analysis, and use them to push a racist worldview.

Murray fails to see that the problem is not that it is impossible to find other studies that have similar results to the ones cited in *The Bell Curve*. [01:39:58] It's that he's willing to treat data collected in a segregated white supremacist state as a legitimate source to inform us about inherent racial differences. That is the issue here. On a more general note, what Murray writes in the afterword and how he writes it shows us exactly how little respect he has for what should be treated as a sensitive topic. The subject of his writing is potential differences in native ability between racial groups and discussing that requires a level of tact and consideration that is totally absent here. You cannot half-ass the science with this stuff. Murray's refusal to respond directly to criticism of his sources here exposes him as a fraud.

We're going to move on now and consider how *The Bell Curve* measures intelligence against socioeconomic status in determining one's life outcomes. But I'd like you to keep in mind, if possible, several of the things we've talked about so far:

- The difficulty in defining intelligence;
- The difficulties in testing for intelligence;
- *The Bell Curve*'s missing genetic evidence for IQ;
- and of course, the incredibly shoddy sources that Herrnstein & Murray are apparently willing to accept.

When we see a graph measuring intelligence against environment, we should not be fooled into thinking that that intelligence was legitimately or accurately calculated.

IQ VS ENVIRONMENT [01:41:15]

Anyway to the claim - one's IQ is more important than one's social background in determining one's life outcomes. [01:41:28] To address this claim, we first need to define the terms. We know by now how Herrnstein & Murray have been determining the IQ of the people they're examining, by using their scores on the Armed Forces Qualifying Test. But in order to make comparisons to their IQ, how is *The Bell Curve* determining those people's socioeconomic status? Let's take as an example, poverty, from chapter five of *The Bell Curve*, titled *Poverty*. Herrnstein & Murray want to compare low intelligence with low socioeconomic status as causes for poverty to figure out which is more important. They use the survey respondents' AFQT scores as their data for intelligence, and they use socioeconomic information provided by the respondents to build what they call an "index of socioeconomic status (SES)". Both of these are then compared with the likelihood of the respondents being below the poverty line a decade later. And of course, Herrnstein & Murray find that intelligence is the better predictor of poverty. So I guess we'd better examine exactly how Herrnstein & Murray constructed their index of socioeconomic status. But before we get to that, I'd like to propose a question for us to answer - what environmental factors would you deem important with regards to the likelihood of a young person being in poverty? And let's discuss a few possibilities here:

- First up, parental socioeconomic status, which is usually defined as their level of education, occupation, and income. I think we'd all agree that is fairly important. [01:42:58] Families that have a larger income are less likely to be in poverty. Better educated parents are more likely to have better jobs and therefore less likely to have children in poverty. This is rather straightforward.
- Family composition is important. A family with a particular income and living space stretched to take care of six children, say, is going to have a harder time than a family with the same

income and living space but only one child to take care of. So number of siblings is important. As is whether or not the individual was raised in a two-parent family - two parents typically means more resources, and therefore less chance of being in poverty.

- The area where someone lives is very important. One family with a particular income might have a very different living experience to another family with the same income that lives in a different area. And this could be for a variety of reasons: Average living expenses like rent, food, and other costs that vary from place to place. The average crime rate. The unemployment rate - that can be very important for determining one's chance of being in poverty. It seems fairly obvious to mention, but you're going to have an easier time finding an income in an area with many jobs than an area with few jobs.
- Another reason the area someone lives is important to us here is school quality, which should be particularly noteworthy, given that we're measuring all of this against performance on an academic test. How long someone stays in school is also important and how many years of education they completed both before and after taking the Armed Forces Qualifying Test.
- [01:44:26] Familial wealth is important, and this is a separate issue to income. One person with a particular income whose rich parents bought them a house and a car and paid their way through college is going to have a different experience to a person on the same income, but who has to pay off debts related to all of those things.
- Overall economic trends can be very important. You are more likely to be in poverty during a recession. The reason that the poverty rate increases during recessions is not because everyone collectively loses a few IQ points, is it? And the effects of recession are felt unequally across economic classes and different geographical areas.
- One's gender is important. Women, for example, are more likely to be in poverty than men are. Now, whether you believe this is because women have lower genetic IQs than men do, or you're sensible and you believe it's because of environmental reasons, it is the case. (I should note here that I'm excluding race because this chapter of *The Bell Curve* concerns itself with only the white respondents to the AFQT.)
- Your health is important, of course. People with disabilities, for instance, are more likely to be in poverty. And particularly in the U.S., the cost of medical care and health insurance can massively affect someone's likelihood of being in poverty.

[01:45:41] And we could go on listing things, but we will arbitrarily stop here. I trust you get the point by now. There are lots of different things to consider when attempting to determine how someone's environment might contribute to them being in poverty.

Which brings us back to *The Bell Curve*. Which of the various factors on this list did Herrnstein & Murray think were important with regards to the likelihood of a young person being in poverty...? The first one. Yep, that's all. Herrnstein & Murray's consideration of environmental factors extends to parental education, income, and occupation, that's all. As far as they're concerned, with regards to determining predictors of poverty, all the other things on this list have no effect. Your family's wealth has no effect. Family composition, the area where you live, the quality of the school you went to, the crime rates. All irrelevant. What they have done here is substitute environmental factors for parental socioeconomic status, which is a much narrower category of variables. They simply add together parental education, income, and occupation, call that parental socioeconomic status, and plot it against IQ. And this is the graph they come up with - *The comparative roles of IQ and parental SES in determining whether young white adults are below the poverty line*.

It shows that people with low IQs are more likely to be in poverty than people whose parents had a low SES. And also the reverse - high IQ [01:47:06] people are less likely to be in poverty than people whose parents had a high SES. "Cognitive ability is more important than parental SES in determining poverty," they say. But of course, as we have seen, their consideration of environmental factors here is laughably narrow. They only want to consider as valid things that fall under their definition of parental SES, and they ignore all the other relevant environmental factors. What would happen to this graph if we also considered the various other things that Herrnstein & Murray leave out of their analysis? Now, I don't know how to do regression analysis, unfortunately, but the book *Inequality by Design* was written by some people who do know how to do regression analysis, and they do exactly what we're looking for here.

Firstly, they recreate Herrnstein & Murray's calculations using their data. They then use the National Longitudinal Survey of Youth responses to add more environmental data to the analysis. Their first updated graph changes 'parental SES' to 'parental home environment', adding for consideration things like the number of siblings and whether the household has two parents. As we can see, AFQT score is still more important than parental home environment, but now the two are much closer together. Next up, they add 'community environment' to 'home environment', considering the region where the respondent lived when they took the test and the school that they attended. Doing this, we see that AFQT score and social environment are now equal. [01:48:38] Next, they add

for consideration the number of years of education of the respondents to the survey, and by now, the AFQT score has slipped below the combined environmental factors in importance.

Using the same statistical methods and data set as *The Bell Curve*, *Inequality by Design*'s analysis shows that environmental factors are more important than AFQT score in determining the probability of being in poverty. And this is shown using only the limited data available in the National Longitudinal Survey of Youth, remember. *Inequality by Design* adds to the analysis only a few of the conceivable socioeconomic factors that are ignored by Herrnstein & Murray. If we were to continue adding in available factors to consider, the effect of IQ would get weaker and weaker. And lest you think *Inequality by Design*'s analysis was a one off, the authors of *Intelligence, Genes, and Success* also reanalyze the NLSY data and with regards to how much cognitive ability accounts for differences in wages between people, say the following,

> However, our results conflict with the predictions of H&M. Ability factors other than *g* are economically useful. Compared with education, family, background, and region of residence, *g* explains little of the variance in wages; if there exists some "X factor" factor that can explain the large residuals common in wage regressions, it is not measured cognitive ability.
>
> ... In summary, our reanalyses of the NLSY data originally analyzed by H&M show measured cognitive ability is correlated with wages [01:50:11] but explains little of the variance in wages across individuals and time.

Later in this chapter, Herrnstein & Murray used this same narrowly defined parental SES to consider which young people will drop out of school, get a college degree, be unemployed, have children out of wedlock, be on welfare, and so on. To be fair, sometimes they do add other factors to consider, but again, only when they personally, *subjectively,* decide those factors are important. All their comparisons between IQ and SES that inform their later policy proposals are based upon this calculated decision to not consider the full range of relevant environmental factors.

And there's two other important points that we have to keep in mind here. The first is that we have been assuming that AFQT score is a legitimate stand-in for cognitive ability, which, given all the potential problems with intelligence testing we've already discussed, is a bit of a stretch. The second thing we need to remember is that Herrnstein & Murray's estimation of IQ is that it is only 60% genetically heritable. That would mean, according to their flawed understanding of heritability anyway, that 40% of the IQ score in their calculations originated from environmental factors. Considering all these things together, the case for IQ here is looking incredibly flimsy.

So as we've seen, once you add more factors to consider, environment trumps IQ. So we now have to ask, is this a legitimate thing to do statistically speaking? *The Bell Curve* anticipates being criticized in this manner. in a section titled *But What About Other Explanations?*, they write,

> We can already hear critics saying, 'If only they had added this other variable to the analysis, they would have seen that intelligence has nothing to do with X.
>
> [01:51:59] ... At this point, however, statistical analysis can become a bottomless pit. It is not uncommon in technical journals to read articles built around the estimated effects of a dozen or more independent variables. Sometimes the entire set of variables is loaded into a single regression equation. Sometimes sets of equations are used—modeling even more complex relationships, in which all the variables can exert mutual effects on one another.
>
> Why should we not press forward? Why not also ask if religious background has an effect on the decision to go on welfare, for example? It's an interesting question, as are 50 others that might come to mind.

This is the first of two defenses by Herrnstein & Murray, where they argue that it would just be too complicated to consider all the factors. *Why there could be 50 environmental variables affecting someone's likelihood of being in poverty. That's just too many, it will be too complex, our graph wouldn't make any sense if we did that. So instead of 50, we're just going to consider, I don't know, 2.* This is a result of treating the method of investigation as more important than getting accurate results. [01:53:04] If you can't use regression analysis to fairly compare IQ to all the relevant environmental factors – Don't. You know, you don't actually have to do this? Herrnstein & Murray's second defense is even more telling than the first:

> Our principle was to explore additional dynamics when there was another factor that was not only conceivably important but for clear logical reasons might be important *because of dynamics having little or nothing to do with IQ.* This last proviso is crucial, for one of the most common misuses of regression analysis is to introduce an additional variable that in reality is mostly another expression of variables that are already in the equation.

So what Herrnstein & Murray are saying is that they dismissed variables if they deemed them to merely be mostly expressions of IQ which is already in the equation. They only considered additional factors when they had little or nothing to do with IQ and were quote "conceivably

important." Which should lead us to ask a question, how are Herrnstein & Murray deciding which variables are "conceivably important" and how are they deciding how much they have to do with IQ? And the answer, of course, is *subjectively*. They're only considering things that they reckon are important. You see the problem with Herrnstein & Murray dismissing variables that they have subjectively decided are merely expressions of cognitive ability here is that they think that socioeconomic status itself is an expression of cognitive ability. Later in the book, when criticizing the practice of controlling for SES between racial groups, they write,

> [01:54:42] The difficulty comes in interpreting what it means to control for socioeconomic status. Matching the status of the groups is usually justified on the grounds that the scores people earn are caused to some extent by their socioeconomic status. So if we want to see the "real" or "authentic" difference between them, the contribution of status must be excluded. The trouble is that socioeconomic status is also a result of cognitive ability, as people of high and low cognitive ability move to correspondingly high and low places in the socioeconomic continuum.

Now this is circular logic. Herrnstein & Murray claim to be limiting which factors they're considering to avoid including those which are merely expressions of other factors. But their main comparison here is between cognitive ability and socioeconomic status, which they elsewhere argue is a result of cognitive ability. Using this framework, where cognitive ability determines both IQ and socioeconomic status, the whole series of comparisons from this chapter of *The Bell Curve* seems cynical and unnecessary. Herrnstein & Murray have already decided what conclusion they're going to come to, that cognitive ability is more important than all the other variables, and all their statistical comparisons read as them just going through the motions to get that result. In simply declaring socioeconomic status the result of cognitive ability, *The Bell Curve* brings to mind the 'chicken and egg' problem here.

You see a lot of disagreements over IQ stem from different interpretations of the same data. [01:56:14] Let's say you do a study which proves a strong, positive correlation between the amount of time someone has spent in education and their IQ, and you present those findings to two groups of people - one group that favors environmental explanations and one that favors genetic explanations. Now, of course, the environmentalists will say this result makes perfect sense, the longer you are in education, the more things you learn, the better you get at answering the sorts of questions that show up on IQ tests, the more familiar you are with taking academic tests in the first place - IQ clearly

stems from environment. The genetic-minded folks, on the other hand, will say, of course, this result makes perfect sense; people with higher IQs favor an academic environment, and they're more likely to stay in school longer because that's the smarter thing to do; since they have higher IQs to begin with, they will naturally make better choices - environment clearly stems from IQ.

So which came first, the chicken or the egg? Environment or cognitive ability? We can phrase this two ways:

- A parent's higher cognitive ability leads to a better environment, which again leads to a higher cognitive ability in their children.
- Or we can say that a better environment leads to a parent's higher cognitive ability, which then produces a better environment for their children.

But both of these ways of phrasing are merely presenting a segment of the overall [01:57:41] environment-cognitive ability logic chain. *The Bell Curve* solves the conundrum of whether cognitive ability or environment should come first by saying... cognitive ability - that's first, we like that one the most, so that's the one that comes first. But of course, this is completely arbitrary, and also ultimately incorrect.

To understand this, we need to talk about another of the main problems with the scientific arguments of *The Bell Curve*, which is that Herrnstein & Murray are conspicuously uninterested in the causes of the things that they're talking about. Much of *The Bell Curve*, for instance, is concerned with proving that there are substantial differences in cognitive ability between different designated racial groups. But what Herrnstein & Murray never seriously concern themselves with is why this supposed divergence happened. Population groups don't evolve to be different for no reason, do they? If one group developed better cognitive skills than another group, there would have to be some mechanism there that was leading to higher cognitive ability in that group, or, I suppose, leading to lower cognitive ability in the other group. Now this could simply be direct evolutionary pressure, as in different levels of cognitive ability in different groups are being directly selected for. Or it could be an indirect, unintended effect of a different trait being selected for. Or some sort of genetic drift, as generations of different population groups are isolated enough from each other to develop in significantly different ways. Whatever the reason, though, there would have to be a reason, and we should expect a scientist attempting to argue for a substantial difference in ability between different groups to therefore maybe be interested in exactly why this difference came about, right?

One of the only times that Herrnstein & Murray show any interest in this question is in Appendix 5, where they discuss the work of Canadian psychologist [01:59:36] J. Philippe Rushton, who wrote the book *Race, Evolution, and Behavior* in 1995. Rushton alleges that brain and genital size are inversely related, and that larger genitals correlates with an increased fertility. So at some point, different designated racial groups diverged from one another and developed different traits according to some sort of trade off system. So it's like a computer game where you have limited points to put into your starting stats, only here the starting stats are INT and genital size.

In 1988, Rushton was reprimanded by the University of Western Ontario for carrying out two particular studies. He surveyed first year psychology students and then male customers at a Toronto shopping mall, asking them questions about their sex lives, the size of their penises, and the exact distance that they ejaculate. Now I can only speak for myself here, but I can't say I've ever measured. One therefore wonders how reliable this self-reported data could be. Or, who knows, maybe I'm the anomaly here, maybe all you penis-havers out there are keeping detailed daily statistics, I don't know. [02:00:51] One also wonders about exactly how distance is supposed to come into play here (for want of a better phrase). What does this Rushton guy think is going on in the bedroom? Does he think you have to hit a moving target or something? I don't know.

Rushton's work also uses the same Caucasoid-Mongoloid-Negroid categorization that Richard Lynn uses, and to quote a response to Rushton's theories by Canadian psychologist Zack Cernovsky, "... some of Rustan's references to scientific literature with respects to racial differences in *sexual characteristics* turned out to be references to a nonscientific semipornographic book and to an article in the *Penthouse* Forum." I am mentioning Rushton and his weird genital theories here, not just because they're funny to relate, which they certainly are, but because he and his research are defended in *The Bell Curve*. Herrnstein & Murray relay his ideas before stating, "We cannot at present say who is more nearly right as a matter of science. Rushton or his critics. However, Rushton's work is not that of a crackpot or a bigot, as many of his critics are given to charging." But they're wrong there, of course. He is a crackpot and a bigot. Or he was anyway. He's dead now.

As for why Herrnstein & Murray seem so disinterested in examining causes for the things that they're discussing, I can only speculate here, but I suspect it's because, at least with regards to *The Bell Curve* anyway, Bernstein and Murray are not scientists. [02:02:25] They didn't even submit *The Bell Curve* for peer review prior to its publication. They are here to advance a conservative social and political agenda and all the "science" is just window dressing for that agenda, and that's what we're going to talk about next.

POLITICS [02:02:34]

So then, the politics of *The Bell Curve*, and I'd like to first talk a bit more about why *The Bell Curve* was so controversial. And there's one main reason comprised of two sub-reasons. The first is that Herrnstein & Murray spend a large part of their book asserting differences in intelligence between designated racial groups. And we have to wonder why they even did this, because it isn't important at all for their overall point. Their main argument is that IQ is the most important factor determining success or failure in life, and they seemingly don't need the racial elements at all to make this point. Or do they?

In a section titled *How Ethnic Differences Fit into the Story*, they write the following, "In Part I, we described the formation of a cognitive elite. Given the cognitive differences among ethnic and racial groups, the cognitive elite cannot represent all groups equally, a statement with implications that we will develop in Part IV." Part 4 being the section of the book comprised of their policy proposals. And it is these policy proposals that are the second part of the reason for *The Bell Curve* being such a controversial book.

[02:03:54] More than either of these things individually being controversial, it's how they interact that really produces the controversy. You see, for all Herrnstein & Murray's posturing about how brave they're being, speaking out, and breaking taboos and all that, it is not actually controversial in the scientific community to simply acknowledge group differences in IQ. Let's imagine that instead of *The Bell Curve*, Herrnstein & Murray had simply published a list of IQ test results showing differences in IQ in different countries. Nobody would have cared. Researchers from across the political spectrum worked with intelligence test data all the time, some environment-minded researchers, because they acknowledge that the group differences exist, but they want to prove that environmental factors are the key to understanding them. Nor is it controversial to assert that differences in cognitive ability, in general, are partially due to genetics. There are a whole host of genetic conditions that can affect someone's cognitive ability. Right-wingers who characterize lefties as die-hard 100% environmentalists miss the point here, as we'd actually be hasty to point out the ableism in denying the effects of those genetic conditions. So it's not simply that Herrnstein & Murray are breaking the supposed taboo of discussing IQ differences that sparked the backlash. It's that they explicitly link those differences to a set of policy proposals. This is why *The Bell Curve* is controversial. Because of its political ideas. So let's talk about those.

First off, the enormous glaring problem with the vast majority of Herrnstein & Murray's policy proposals is that they absolutely do not logically [02:05:37] follow from any of their previous claims in *The Bell Curve*. And if it sounds like I'm exaggerating there, trust me, I am not. Take, for instance,

their account of programs like Head Start that are designed to help disadvantaged kids. Herrnstein & Murray acknowledged that these programs can have temporary positive effects, but they argue that these positive effects fade over time and become statistically insignificant by the time those children leave school. This is taken by Herrnstein & Murray as proof that there is ultimately nothing to be done to help these kids. Any temporary positive effects will simply fade away due to their inferior genetics, so we should stop wasting money on them and instead give it to the naturally gifted children.

This does not follow, however. There is an alternative interpretation of this situation, which is perfectly consistent with a majority environmental understanding of childhood development. We can argue that these programs produce a positive effect because they are changing the children's environment. Any diminished effects after the programs stop are because the programs stopped, thus changing the environment back to the norm. So instead of abandoning these programs, we should instead take them as proof that environmental changes can produce positive effects and then expand them, increase their funding, have equivalent programs for every stage of school life. Any later diminished effects are proof that we aren't trying hard enough, [02:07:08] not that what we're trying to do is impossible.

Nearly every policy proposal in *The Bell Curve* has this sort of alternative explanation. One of their proposals for dissuading low IQ mothers from having children is to stop the welfare programs that support them. But as we know, richer people tend to have fewer children, and birth rates are lower in countries with comprehensive welfare programs. Making these women poorer will not make them have fewer children. And besides, Herrnstein & Murray are arguing that these women are resolutely unintelligent. So if that were true, why would we be expecting them to be able to plan ahead and reason logically that having fewer children is a good idea. That they're not supposed to be able to plan well for the future is kind of the whole point, right?

What Herrnstein & Murray could have done here is some very basic comparisons between the United States and other countries. They scaremonger about the possible effects of welfare programs, which exist in Europe in abundance, for instance. But since those European welfare programs have not led to the sort of utter catastrophe that Herrnstein & Murray prophesized, they instead choose to focus only on the United States. Even if Herrnstein & Murray had proven that some groups were genetically less intelligent than others, cutting welfare would not follow from that. Rather, one could make the argument that those groups would deserve more welfare, because they would have an unfair disadvantage in school and in work [02:08:37] that would not be their fault.

And even worse than Herrnstein & Murray's logic simply not following, their proposals sometimes actually directly contradict with their previous analysis. For example, let's talk about

affirmative action. As mentioned earlier, Herrnstein & Murray really don't like affirmative action, and as we've also seen, they are very worried about the supposed cognitive stratification of society. And let's briefly quote them talking about that,

> In this penultimate chapter, we speculate about the impact of cognitive stratification on American life and government. Predicting the course of society is chancy, but certain tendencies seem strong enough to worry about:
>
> - An increasingly isolated cognitive elite.
> - A merging of the cognitive elite with the affluent.
> - A deteriorating quality of life for people at the bottom end of the cognitive ability distribution.
>
> ... Unchecked, these trends will lead the U.S. towards something resembling a caste society, with the underclass mired ever more firmly at the bottom and the cognitive elite ever more firmly anchored at the top, restructuring the rules of society so that it becomes harder and harder for them to lose. Among the other casualties of this process would be American civil society as we have known it. Like other apocalyptic visions, this one is pessimistic, perhaps too much so. On the other hand, there is much to be pessimistic about.

Now, what Herrnstein & Murray fail to spot here is that a policy of aggressive affirmative action would directly work to check the cognitive partitioning that they call frightening and apocalyptic. [02:10:14] If Harvard or some other fancy school decided they were going to admit a certain percentage of applicants based upon some characteristic other than test scores, then there would be that same number of applicants with higher test scores who would therefore not get into Harvard and have to go to their next choice of college. And the next smartest people who would have gone to *that* college will now not get in and have to go to *their* next choice, and so on down the line. And if this ruthless affirmative action policy was adopted by the group of colleges as a whole, the cognitive elites would be forced to spread out throughout the whole college pool, which would have the added effect of spreading them out geographically too.

Herrnstein & Murray really should have spotted this since, earlier in the book, they talk fondly about Harvard's policy of admitting legacy applicants - those usually being people whose fathers had graduated from Harvard. They also mention applicants being considered for things like "his potential as a quarterback or stroke for the eight-man shell, and other non-academic qualities." Curiously, Herrnstein & Murray do not criticize Harvard's practice of admitting people for non-academic reasons.

When it comes to affirmative action, however, Herrnstein & Murray are very clear about that being unfair, and I quote, "To what extent is a society fair when people of similar ability and background are treated as differently as they are now? In 1964, the answer would have been unambiguous. [02:11:42] Such a society is manifestly unfair. The logic was right then, and right now."

So colleges admitting applicants for non-academic reasons, such as their father having gone there, that's okay, it's counteracting the dreaded cognitive partitioning of society after all. But colleges admitting applicants because of affirmative action, well, that is rather dramatically "leaking a poison into the American soul." So how do we account for this apparent contradiction on behalf of Herrnstein & Murray? Well, what would you imagine to be the most likely difference between a legacy Harvard applicant and an affirmative action applicant? I will leave it to you to ponder that one.

Instead of the unfair and poisonous racial affirmative action. Herrnstein & Murray argue instead for a race-blind version of affirmative action based, bizarrely, on test scores. And I say bizarrely here, because this idea would actually accelerate the supposedly apocalyptic cognitive partitioning. They say that "In the case of two candidates who are fairly closely matched otherwise, universities should give the nod to the applicant from the disadvantaged background." Now, I agree with this in isolation here; I do think that if you have two similar candidates, you should admit the less privileged one. But with regards to Herrnstein & Murray's figures of cognitive partitioning, though, this is exactly what they were worried about. Colleges becoming better at collecting all of society's high IQ people together and funneling them into high IQ jobs in high IQ areas. [02:13:19] They've basically said here's an apocalyptic problem, and now here's how to make it happen faster.

And actually, regarding the concept of affirmative action, their logic is all wrong there. At the start of the chapter titled *Affirmative Action in Higher Education*, Herrnstein & Murray recount an affirmative action controversy from 1991, where a law student at Georgetown University "surreptitiously compiled the entrance statistics for a sample of applicants to Georgetown's law school and then published the results of his research in the law school's student newspaper. He revealed that the mean on the Law School Aptitude Test (LSAT) differed by a large margin for accepted black and white students." Herrnstein & Murray dubbed this difference the ethnic "premium" or "edge" that minority applicants are supposedly being afforded in the admissions process, and go on to detail how they've looked at the college admissions data from 26 colleges and found that in the classes entering those in 1991 and 1992, the average SAT scores of the black students were below the average SAT scores of the white students. Herrnstein & Murray take this as proof that black students have an unfair edge in the college admissions process, "The summary statement about affirmative action in

undergraduate institutions is that being either a black or a Latino is worth a great deal in the admissions process at every undergraduate school for which we have data."

[02:14:48] However, this method of measuring the supposed results of affirmative action is entirely incorrect. There is a crucial flaw in the logic here, and it begins with Herrnstein & Murray's decision to begin their analysis by looking at the college entrance data, instead of earlier, by thinking about the wider pool of college applicants. So black people have historically had lower SAT scores than white people. Now, whether you believe this is due to some fixed genetically originated lower IQ. or you're sensible and you believe it's down to environmental reasons, it is the case. So in any random group of students applying to a college in the United States, we would expect the scores of the black students to be on average lower than the white students, if you follow. So what happens next is the college takes a look at this group of applicants and decides to admit some of them using certain criteria - so test scores, but usually various other things like extracurricular activities and whatever else. So all the accepted students get in and all the denied students go off to apply somewhere else, right? Then, Herrnstein & Murray come along to the college, and they notice that the scores of the black students are on average below the white students and thus start decrying the terrible unfairness of affirmative action. But what they've missed here is that this discrepancy between the average black and white scores would still exist, even if the college admissions process only considered test scores and nothing else.

[02:16:19] And let's think about this. Imagine an American college in 1991 with a certain amount of positions to fill, and they get a larger group of students applying for those positions, right? So they have to let some in and not others. In that group of applicants, there will be a range of test scores, and the black applicants will have, on average, lower scores than the white applicants. And let's say this college only admits people via test scores. So if they have 1000 positions to fill, they only accept the top 1000 SAT scores and they send everyone else packing. Now, in this group of 1000 successful applicants, there will still be both black and white people, but of those black people who scored high enough to get in, they will be, on average, towards the lower end of the range. Meaning the black group average will still be lower than the white group average, even though they all scored high enough to get in. Even in a world without affirmative action, and even with a totally racially blind admissions policy, and accepting Herrnstein & Murray's positions regarding racial IQ scores; a disparity between black and white SAT scores in college intake groups would still exist. The only way we could fairly expect the two averages to be the same is if the black and white students in that 1991 applicant pool also had, on average, the same scores. And since Herrnstein & Murray have just spent

a huge section of their book arguing for black people's lower cognitive ability, I don't know why they'd be expecting that.

[02:17:52] Moving on from affirmative action, I'd like to ask a question. Can the politics of *The Bell Curve* be described as eugenics? And I mean, yes, right? They're arguing for policies with the agenda of changing birth rates for particular groups of people. They want lower IQ mothers to have fewer children. Herrnstein & Murray stop short of openly embracing eugenics, however. They pull a rhetorical trick by saying they're simply worried about *dysgenics*. Dysgenics being the opposite of eugenics there. *So we're not necessarily for it, but we are anti the opposite of it*, you know, it's very clever. One telling quote here is when Herrnstein & Murray talking about the Nazis say the following, "followed by the terrors of nazism and its perversion of eugenics that effectively wiped the idea from public discourse in the West." Now, the phrase "perversion of eugenics" should set off some alarm bells there, implying apparently that there is a good sort of eugenics and the Nazis just did it wrong or took it too far or something. Or, maybe, there was just something uniquely evil about Nazi eugenics that wasn't present in the supposedly good eugenics. Is that true? Well, let's find out.

The footage you're seeing here is from a movie called *Erbkrank* (in English, "the hereditary defective"). This is a 1936 propaganda film produced by the Nazi Party's Racial Policy Office. [02:19:22] It features video shot at German psychiatric hospitals of people with various types of disabilities, interspersed with text informing the audience, among other things, of the expense of caring for these people, going on to argue that the prevention of hereditarily sick offspring is a moral duty. Now, I'm not actually showing the images of the people in the video here, as they almost certainly did not consent to be in a film which was used to propagandize in favor of their sterilization, and I would feel uncomfortable including that footage in my video. *Erbkrank* is available online though, if you prefer to watch it unedited. The film ends with the quote, "The farmer who prevents the overgrowth of the weed promotes the valuable." The purpose of this film was obviously to increase public support for the involuntary sterilization of people with disabilities, a Nazi program that would escalate into outright mass murder just a few years later. Adolf Hitler was reportedly a fan of Erbkrank and encouraged the production of a sequel titled *Victims of the Past: The Sin Against Blood and Race*, which was shown in cinemas throughout Nazi Germany in 1937.

So why am I talking about Erbkrank here? Is this simply a slippery slope argument perhaps? Look where all this eugenics rubbish leads - to the Nazis and the Holocaust. Now, although I think that would be a fair point to make actually - No, this particular movie has a much more direct link to what we're talking about today.

[02:20:52] Now something that might come as a shock to you, and it certainly did to me in the process of researching this video is the extent of the international eugenics movement prior to World War II. Nazi eugenicists were not operating in a bubble, and most importantly for us here is that they had a reciprocal relationship with American eugenicists. You see, *Erbkrank* had another big fan, in addition to Hitler. So this guy is Harry H. Laughlin, an American eugenicist, director of the Eugenics Record Office, and founding member of the American Eugenics Society (he likes eugenics, if you didn't pick up on that). Now in 1922, Harry Laughlin published a book titled *Eugenical Sterilization in the United States*, which included a chapter titled *Model Eugenical Sterilization Law*. This 'model law' begins, "An Act to prevent the procreation of persons socially inadequate from defective inheritance, by authorizing and providing for the eugenical sterilization of certain potential parents carrying degenerate hereditary qualities." This law designates "A socially inadequate person" as someone who "fails chronically in comparison with normal persons to maintain himself or herself as a useful member of the organized social life of the state." These socially inadequate people were not just the ill, but also, for example, the "Criminalistic", the "Inebriate[d]" and the "Dependent (including orphans ne'er-do-wells, the homeless, tramps and paupers)." 18 US states passed laws based upon Laughlin's model, and between them sterilized tens of thousands of people.

[02:22:34] And in 1933, somewhere else passed a law which was based upon Laughlin's model, *The Law for the Prevention of Hereditarily Diseased Offspring*, which actually was slightly more moderate than what the 'model law' proposed, if you can believe it. This was, of course, Nazi Germany. Laughlin was later awarded an honorary degree by the University of Heidelberg for his work on behalf of the "science of racial cleansing". Laughlin was also an open Nazi Party supporter, writing enthusiastically about Nazi Germany's eugenics laws in a publication titled *Eugenic News*. And why shouldn't he be excited about them? I mean, he wrote them. In addition to inspiring Nazi Party policy, Laughlin also helped to disseminate their propaganda. In 1936, he purchased an English translation of *Erbkrank* and raised funds to have it shown in American high schools, which it was. That's right, just a couple of years before the Nazis started systematically murdering people with disabilities, this Nazi eugenics movie was actually shown in American schools, and this event was reported on favorably in the Nazi press. Laughlin raised the funds to distribute the film by writing to Wickliffe Draper, who was another American eugenicist and racist, and importantly for Laughlin, a millionaire. Together, in 1937, Laughlin and Draper founded the Pioneer Fund, the purpose of which was to promote the genetic stock of people "deemed to be descended predominantly from white persons who settled in the original 13 states prior to the adoption of the Constitution."

[02:24:16] Now, besides subjecting schoolchildren to Nazi propaganda, the Pioneer Fund set about supporting massive "research into race betterment", giving enormous grants to any researcher willing to push a pro-eugenics agenda. And here, dear video watchers, is where we rejoin *The Bell Curve*. Richard Lynn, you remember, the guy who thinks the single best study of the "Negroid intelligence" was carried out under apartheid. He's received over $600,000 from the Pioneer Fund and currently (as in now, currently, today) is the head of the Pioneer Fund, because it is still going and he is still alive. *Mankind Quarterly*, the journal which published Lynn's work that is cited in *The Bell Curve*, is funded by the Pioneer Fund. *Mankind Quarterly* includes among its founders

- **Henry Garrett**, an American psychologist who testified in favor of segregated schools during Brown v. Board of Education;
- **Corrado Genie**, who was president of the *Italian Genetics and Eugenics Society* in fascist Italy;
- and **Otmar Freiherr von Verschuer**, who was director of the *Kaiser Wilhelm Institute of Anthropology, Human Heredity, and Eugenics* in Nazi Germany, was a member of the Nazi Party, and, believe it or not, the mentor of Josef Mengele. Josef Mengele, of course, being the physician at the Auschwitz concentration camp infamous for performing human experimentation on the prisoners. During World War II, Mengele provided Verschuer with human remains from Auschwitz to use in his research into eugenics.

That is who founded *Mankind Quarterly*.

[02:25:59] Editor of the New Republic, Charles Lane, writing about *The Bell Curve* in 1994, noted that five articles from the journal–that's *Mankind Quarterly*–are actually cited in *The Bell Curve*'s bibliography. But the influence on the book from scholars linked to *Mankind Quarterly* is more significant. No fewer than 17 researchers cited in the bibliography of *The Bell Curve* have contributed to *Mankind Quarterly*. 10 are present or former editors or members of its editorial advisory board. J. Philippe Rushton–the guy wandering around asking people how far they can ejaculate–he was president of the Pioneer Fund from 2002 to 2012, received hundreds of thousands of dollars from it, and he used Pioneer funds to mail 40,000 copies of his book *Race, Evolution and Behavior* to various social scientists. Another Pioneer Fund recipient was American anthropologist Donald Swan. Now in 1966, Donald Swan was arrested on charges of mail fraud. When the police investigated Swan's apartment, they found an assortment of illegal weapons, a stash of racist literature, Nazi memorabilia including flags and a helmet, and photographs of Swan with members of the American Nazi Party. Oops.

Do you remember Linda Gottfredson, the author of the public statement defending *The Bell Curve*'s claims about intelligence that I mentioned way back at the start of the video. Well, as of 1994, she'd received $267,000 from the Pioneer Fund. And speaking of that public statement, actually, the Southern Poverty Law Center notes that more than 20 of the 52 signatories were themselves Pioneer Fund recipients. [02:27:40] And crucially for us here, the Pioneer Fund wanted to fund Richard Havenstein. The head of the fund prior to J. Philippe Rushton was a lawyer called Harry F. Weyher. And in 1994 (the year that *The Bell Curve* came out), he told a journalist interviewing him that regarding Herrnstein, "we'd have funded him at the drop of a hat, but he never asked."

Now, the fact that *The Bell Curve* includes among its sources a bunch of people who receive money from the Nazi fund and publish papers in the Nazi journal was understandably cause for concern for many when it was published. And this was used frequently to dismiss the book's arguments. So Murray includes a very short defense of the Pioneer Fund in his afterword to *The Bell Curve*, which reads as follows, "... the relationship between the founder of the Pioneer Fund and today's Pioneer Fund is roughly analogous to that between Henry Ford and today's Ford Foundation." So he's saying, you know, it may have been founded by pro-Nazi eugenicists, but today it's completely different. The trouble is, Murray includes absolutely no evidence to back this statement up. He treats it as a given, but actually, the Pioneer Fund has been unwavering in its support for eugenics over the years. Richard Lynn, the current head of the fund, works with the explicitly white supremacist publication American Renaissance and speaks at their conferences. [02:29:02] The white supremacist editor of American Renaissance, Jared Taylor, (who viewers of my other videos will remember) is funded by the Pioneer Fund. So I don't buy Charles Murray just saying it has changed. He doesn't give evidence for why he thinks that, and there is ample evidence against it.

SUMMARY/WRAP-UP

Anyway, it's about time to wrap this video up with a few final thoughts, I think. But let's first briefly summarize our main counterarguments to *The Bell Curve*:

- Firstly, *The Bell Curve* does not prove that genetics are the primary reason for differences in intelligence. The authors are not geneticists, they're a psychologist and a social scientist. Their estimates of the importance of genes are based on suppositions and guesses.
- After failing to make the case that IQ is genetic in origin, they compare that IQ not to one's "social background" as the back cover of the book promises, but a much more narrowly

defined index of parental socioeconomic status, which includes only a few of the relevant variables.

- The main source of their data is more a test of academic achievement than intelligence, and since it did not return a normal bell curve distribution, Herrnstein & Murray manipulated the data to exaggerate what were previously much smaller differences.
- After a completely unnecessary section making the case for racial IQ differences, they include a set of policy proposals, most of which do not follow logically from their previous analysis, and some of which contradict it.
- [02:30:33] And of course, Herrnstein & Murray's willingness to quote highly questionable data from even more questionable sources should be very worrisome, even if you happen to agree with them otherwise.

Having now read a lot of criticism of *The Bell Curve*, I think I've identified a particular difficulty that people have in arguing against it. And it's a tendency to argue with not the opinions that Herrnstein & Murray *claim to hold*, but the opinions that they would *have to hold* in order to support the policy proposals which they do. For example, it makes no sense to claim that IQ explains only a tiny amount of the variance between people and that you cannot know what someone will do from their IQ, as Herrnstein & Murray do, and then move on to claim that IQ is one of the best ways of determining an employee's individual productivity and employers should pick applicants with the highest IQ. A passing critic of *The Bell Curve*, who hears this latter claim might then respond, *"But that makes no sense. IQ explains only a tiny amount of the variance between people. You can't know what someone will do from their IQ."* To which, defenders of *The Bell Curve* respond, *"Aha, you didn't read the book because they say that in there."* Now, this gotcha tactic, as satisfying as it might be, does not actually explain the contradiction, however.

This is the main rhetorical trick of *The Bell Curve*. [02:31:56] They pretend to concede to mainstream scientific opinion, but then propose a set of conservative and eugenicist political policies as if they hadn't. Anyone who genuinely believed all the moderate hedging quotes that Herrnstein & Murray put in *The Bell Curve* would not be able to propose the policies that they do. So the critics of *The Bell Curve* see these policies and start arguing against the opinions that they assume Herrnstein & Murray would therefore have to hold. Thus, the repeated defense of *The Bell Curve* is that *the authors can't be racist or biased or bigoted as their critics claim, because in their book, they say that they're not; the critics must, therefore, have not read the book*. This is not the airtight defense they

think it is. We care about their political proposals, not how moderate they pretended to be in order to camouflage their approach to those political proposals.

One could, if one wanted, go through my video and find corresponding quotes in *The Bell Curve* for pretty much all of my counterarguments. *See, they also worry about the dangers of social engineering; they also paraphrase Lewontin's thought experiment with the plants; they also talk about the various problems with IQ testing; they also call the existence of 'g' arguable; they say all this in the book, so therefore they've addressed it and your counter arguments are nullified.* Right? The problem is putting all that in the book didn't stop them from advocating for the political policies that they do. [02:33:32] And it should have. If with regards to how much genes influence intelligence, you spend a whole book saying things like "The state of knowledge does not permit a precise estimate," but then you go on to propose a set of policies that only make sense if intelligence is definitely primarily genetic in origin, you are contradicting yourself. You don't actually care that the state of knowledge does not permit a precise estimate, that apparently isn't going to stop you from acting as if it does.

I'm guilty myself of several times arguing against the point that Herrnstein & Murray should have made instead of the one that they did make. Only a minute ago, I said *The Bell Curve* does not prove that genetics are the primary reason for differences in intelligence. To which, the defense is, of course, that they never set out to do such a thing. But they should have. If you don't prove that, then the rest of the argument doesn't work. Now, they couldn't have proved that if they wanted to, of course, because the data is inconclusive. Herrnstein & Murray acknowledged the data is inconclusive, but then just keep on trucking, assuming firstly that later genetics research will prove them correct, which it hasn't - the data is still inconclusive 25 years later. And secondly, assuming that any data which trends against their position is due to strictly temporary effects. Rising IQ scores are thus explained away as being due to an increase in test-taking ability, or elsewhere, as due to the data being distorted by the baby boom. [02:35:00] Rising standards of living can raise a country's average IQ, but only to a point, it is assumed. Black and white IQ scores are converging, but they "may be expected to stop, and the gap could even begin to widen again." So "predicting the future on this issue is little more than guesswork at this point."

All the trends that contradict what the authors of *The Bell Curve* would quite clearly like to be true are assumed to be time-limited. You get the sense that Herrnstein & Murray are implying that once we get to the end of history, *once things stop happening to make the data look like we are wrong, then you'll see, you'll all see, in just a few more years, you'll see that we were right all along*. Of course, to a reader in 2019, all this, as with much of the rest of the book, comes off as rather

quaint. A relic of the 90s, maybe, like Pogs. You see today, of course, we have social media and daily get to see just how cognitively elite these supposed cognitive elites are. Herrnstein and Muray's theory of intellectual inequality is, of course, just economic inequality with the license plates changed.

And I can think of no better illustration of this than the college admissions bribery scandal from earlier this year. This was a criminal conspiracy organized by William Rick Singer to doctor [02:36:23] exam results and bribe college officials in order to ensure children of rich parents get into several top universities. Singer testified that he'd helped more than 750 families get children into college this way, and he furthermore claimed that some of the tactics he used to inflate test scores were widespread outside of his particular scheme. The problem, of course, is not that the rich are getting smarter, it's that the rich are getting richer and can increasingly rig the system to their own benefit. The fact that the rich definitely aren't cognitively elite is increasingly becoming a problem thanks to our imbalanced economies. In 2008, this cognitive elite caused an economic crash and had to be bailed out by all the middle bell curve average people.

Lastly here, I'd like to say that *The Bell Curve* proves, if anything, that any apprehension the scientific community might have about discussing possible differences in racial cognitive ability would be very well justified. Because what you shouldn't want to happen, as a scientist presenting inconclusive evidence for such, is for someone hearing that inconclusive evidence to then start using it as a justification to propose eugenicist political policies. *The Bell Curve* is all this in one package - inconclusive evidence *and* eugenicist politics. *The Bell Curve* has stuck around, not because it breaks new ground or presents new ideas, but because it is a useful pseudoscientific justification for conservatives looking to cut welfare programs and racists looking to feel justified in their racism. [02:38:03] It *is* a "scabrous piece of racial pornography."

OUTRO

Thanks for watching, folks. This one took a bit of time to put together, I'm sure you've noticed. 26,000 words this is. Thank you, as always, to my patrons for supporting me so that I can keep making ridiculous videos like this one. If you'd like to join this list of lovely people, I will put a link in the video description below that you can check out if you like. And I'd like to give an extra thank you to my patrons this time for fact checking a previous draft of this video for me, and making some very useful suggestions. This video would not be half as good as it is without all of your excellent feedback, so I am very grateful for that. I'd also like to thank the people who were able to source a few difficult to find studies for me. Some folks were even kind enough to physically go and photograph or scan things that were not available online, so thank you so much for helping me out there. Thank you also to the

editors who helped me out with this video. Your contributions and suggestions were fantastic. Now, with any project of this length, you inevitably end up with a lot of unused material at the end. And there is so much that I left out here, usually for time reasons, because it would just take too long to explain. Or because it was too complicated and beyond my ability to present the information in a way that made sense. If you'd like to look into the various subjects mentioned today in more depth than I do in the video, I would recommend checking out the sources and reading list below. Righteo, that's all for me today, folks, I'll see you next time.