Controversy of Intelligence: Crash Course Psychology #23

Crash Course: Psychology
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Smarty pants, egg head, brainiac. You've heard terms like these before, maybe you've even been on the receiving end of one of them. But actually, defining intelligence is a lot trickier than just coming up with new names for smart people. I mean, intelligence isn't like height or weight; you can't just toss them on a scale and give it an exact measurement. It has different meanings for different cultures and ages and skill sets. So what is intelligence? It's a question that doesn't give us a lot of answers, but it does open a bunch of other equally important and interesting questions. Like, what influences it? And how can it be assessed? Is it a single, general ability, or does it cover a range of aptitudes and skills and talents? How do things like creativity and innovation factor in? Or genetics or environment, or education? And what about emotional intelligence? Most agree that it's best to think of intelligence not of a concrete thing so much as a concept, the ability to learn from experience, solve problems, and use knowledge to adapt to new experiences. We've often used intelligence tests, to assess and compare mental aptitude, but these tests have a long, complex and dark history. I mean there are Nazis involved so, yeah. So as you'll see, there are reasons that intelligence is one of the most hotly debated subjects in psychology. It's complicated and controversial. [Intro] What if I'm the world's greatest Rubik's cube solver but a terrible speller? Or a truly gifted artist who's barely mastered long division? Could anyone say I was intelligent or not based on those different aptitudes, or would it be more accurate to measure my brainpower on several different scales? Around the turn of the twentieth century, British psychologist Charles Spearman suggested that yes, we do have one comprehensive general intelligence that underlies all of specific mental abilities. He called it the G-Factor. Spearman conceded that while people may have special talents like basket weaving or saxophone solos or doing crossword puzzles, those things still fell under "G". And he helped develop a statistical procedure called factor analysis to try to determine how certain clusters of skills might correlate with another one. Like, say someone who tests well in spatial skills might be good with numbers. We might then refer to that cluster of skills, that factor, as spatial-numeric reasoning. But to Spearman, the G-factor was something of an uber-factor connected to all intelligent behavior from architecture to healing to survival skills, and it's why people who do well on one kind of cognitive test tend to do well on others. But as you can imagine, reducing intelligence to a single numerical test score was and is problematic. L.L. Thurstone, an American pioneer of psychometrics and one of Spearman's first challengers, was not into ranking people on a single scale. Thurstone administered 56 different tests to his subjects then used them to identify seven clusters of mental abilities. By this system, you might turn out to be great at like verbal comprehension but less stellar at something like numerical ability. Sounds fair. But when researchers followed up on his findings, they actually did see that high scores in one aptitude usually meant good scores in the others, essentially backing up some evidence for some kind of G-factor. Even though their ideas did not often align, Spearman and Thurstone together paved the way for more contemporary theories on intelligence. For example, American psychologist Howard Gardner views intelligence as multiple abilities that come in different forms. He references instances of brain damage where one ability may be destroyed while others stay perfectly intact. Savants usually have some limited metal abilities but one exceptional ability when it comes to like, computing figures or memorizing the complete works of Shakespeare. To Gardner, this suggests that we have multiple intelligences beyond the G-factor. In fact, he believes that we have eight intelligences, ranging from our skills with numbers and words to our ability to understand physical space and the natural world. American psychologist Robert Sternberg tends to agree with Gardner, though he boils them down into three intelligences: analytical, or problem-solving intelligence, creative intelligence, or the ability to adapt to new situations, and practical intelligence for everyday tasks. Both of these models seem reasonable, too, and Gardner and Sternberg's work has helped teachers appreciate students' variety of talents. But research has suggested that even these different ways to be smart are also linked by some underlying general intelligence factor. So what about other less tangible forms of intelligence, like creativity, our ability to produce ideas that are both novel and valuable? How can a test that demands one correct answer account for more creative solutions, so-called "divergent thinking". Well, traditional intelligence tests can't, and so far, while we do have some tests that look at creative potential, we don't have a standardized system for quantifying creativity. But Sternberg and his colleagues have identified five main components of creativity, which are useful for framing our understanding of what creative intelligence is and how it works. If you go through the list, you know who I think is really great at almost all of them? Sherlock Holmes. Hear me out. First we've got expertise, or a well-developed base of knowledge. This just means knowing a lot about a lot. Whether it's arcane poisons, jellyfish behavior, or how to recognize a secret passage behind a book shelf, expertise provides the mind with all sorts of data to work with and combine in new ways. Obviously Sherlock has incredible imaginative thinking skills, too, which provide him with the ability to see things in new ways, recognize patterns and make connections. He loves nothing more than rehashing these breadcrumb trails for the dopey constables at the end of the case. Sternberg also thought a venturesome personality contributes to creativity. By hanging around opium dens and chasing thugs and generally courting danger, Sherlock routinely seeks new experiences, tolerates risk, and perseveres in overcoming obstacles. And everyone knows he's driven by intrinsic motivation. I mean, he wants to help the widow discover the thief and everything, but really, Sherlock is driven by his own interest and sense of challenge. He gets pleasure from the work itself. And finally, Sherlock benefits from a creative environment which sparks, supports, and refines his ideas. For so affectionately maintaining this environment on Sherlock's behalf, we largely have Dr. Watson to thank. Sherlock was obviously an academic and creative genius, but he was pretty weak in another form of intelligence: the emotional kind. Emotional intelligence, defined in 1997 by psychologist Peter Salovey and John Mayer -- no, not, not that one-- is the ability to perceive, understand, manage, and use emotions. I don't know about you, but I know plenty of smart people who have a hard time processing social information. The most brilliant mathematician may struggle to communicate with colleagues, neighbors, or staff at the local deli. Likewise, Sherlock often annoys, offends, or even baffles those around him. Perceiving emotions means being able to recognize them in faces, and even in music, film, and stories. Understanding emotions relates to being able to predict them and how they might change. And managing emotions comes down to knowing how to appropriately express yourself in various situations. And finally, emotional intelligence also means using emotions to enable adaptive or creative thinking; like knowing how to manage conflict or comfort a grieving friend or work well with others. Much like creative intelligence, emotional intelligence can be measured to some degree through testing, but there's no standardized way to, like, assign a numerical value. So if we can't perfectly quantify things like creativity or emotional smarts, how did we come up with a way to measure intelligence? Well, as I mentioned earlier, it's a sordid story. The first attempts to do it in the western world began with English scientist Francis Galton in the 1800s. Taking a page from his famous cousin Charles Darwin's theories on natural selection, Galton wondered how that premise might extend to humans' natural ability when it came to intelligence. He suggested that our smarts have a lot to do with heredity, so if we encouraged smart people to breed with each other, we could essentially create a master race of geniuses. If that sounds a little sketchy, it's because it was, like, really, really sketchy!! This study of how to selectively and supposedly improve the human population, especially by encouraging breeding in some people and discouraging it in others, is called "eugenics". A term Galton himself coined, and I'll get back to, in a minute. But around the turn of the

twentieth century when eugenics was taking off, the French government mandated that all children must attend school. Many of these kids had never been in a classroom and teachers wanted to figure out how they could identify kids who needed extra help. Enter Alfred Binet and Theodore Simon, two French psychologists who were commissioned to develop a test to measure a child's so-called mental age. The concept of a kid's mental age is essentially the level of performance associated with a certain chronological age. So if six year old Bruno tests as well as the average six year old, he'd have a mental age of six. Binet believed that his tests could measure a child's current mental abilities, but that intelligence wasn't a fixed, inborn thing. He believed a person's capabilities could be raised with proper attention, self-discipline and practice. In other words, he was no eugenicist. He was hoping that his tests would improve children's education by identifying those who needed extra attention. But Binet also feared that these tests would, in the wrong hands, be used to do just the opposite: labeling children as "lost causes", limiting their opportunities. And wow, was he on to something because that is pretty much exactly what happened. German psychologist William Stern used revisions of Binet and Simon's work to create the famous intelligence quotient, or IQ measurement. At the time, your IQ was simply your mental age, divided by your chronological age, multiplied by a hundred. So for example Bruno is six, and so is his mental age, so his IQ ranks at a hundred, but his little sister Betty is a four year-old with a mental age of five, so her IQ would be 125. That formula works pretty well for measuring kids, but it falls apart when it comes to adults who don't hit measurable developmental steps like kids do. I mean there's no real difference between a mental age of 34 and 35. But Stanford professor Lewis Terman started promoting the widespread use of intelligence tests in the early 1900s, and with his help the US government began the world's first massive ministration of intelligence tests, when it assessed World War I army recruits and immigrants fresh off the boat. Unlike Binet, Terman did use these numerical findings as a kind of label, and he thought his tests could, as he put it: "ultimately result in curtailing the reproduction of feeble-mindedness". This kind of testing played right into eugenicists' sensibilities, and soon the eugenics movement in the US had a pretty good fan-club, raising money from the Carnegie's and Rockafeller's and with proponents working at Harvard and Columbia and Cornell. In the first half of the 21st century, intelligence tests were used to enforce the sterilization of about 60,000 people, around a third of whom were in California. Most were poor white women, often unwed mothers or prostitutes. Other eugenics efforts persisted later into the century, and there is evidence of poor African American, Native American, or Latina women being forcibly or covertly sterilized in large numbers as recently as the 1970s. But do you know who really loved their eugenics? The Nazis. Hitler and his cronies took the idea of intelligence testing to even darker conclusions. The Nazis were all about selecting against so-called "feeble-mindedness" and other undesirable traits as they sought to strengthen what they saw as their Aryan nation. They sterilized or simply executed hundreds of thousands of victims based of their answers to IQ test questions that were really more abut adhering to social norms than measuring actual intelligence. Questions like: "Who was Bismarck?" and "What does Christmas signify?" So you can see how this terrifying history still makes some people leery of how such tests are administered, interpreted, and weighted. Today we understand that intelligence, as defined by all the people we've talked about here, does appear to be a real and measurable phenomenon. But no one can say that they've disentangled all of the would-be genetic, environmental, educational, and socio-economic components of it. In the end, it's best to think of intelligence as something about which we've still got a lot to learn. And next week, we'll talk about how we test intelligence today and the problems we still face in doing it. Today, your intelligent mind learned about the history of how we think about and define different types of intelligence, what the G-factor is, and how Sherlock Holmes is incredibly intelligent but emotionally unintelligent. You also learned about the history and methods of intelligence testing, IQ scores, and how eugenics turned to the dark side, and has since made even talking about intelligence kind of controversial. Thank you for watching, especially to our Subbable subscribers who make Crash Course possible. To find out how you can become a supporter, just go to Subbable.com/crashcourse. This episode was written by Kathleen Yale, edited by Blake de Pastino, and our consultant is Dr. Ranjit Bhagwat. Our director and editor is Nicholas Jenkins, the script supervisor is Michael Aranda, who is also our sound designer, and the graphics team is Thought Cafe.