

[Announcer:](#) Bulletproof Radio, a state of high performance.

[Dave:](#) You're listening to Bulletproof Radio with Dave Asprey.

[Dave:](#) Today's cool fact of the day is that MRI scans show that your brain region connectivity correlates to your intelligence. There's a new and relatively simple technique for mapping the wiring of your brain and they've basically shown how the individual regions of your brain talk to each other can correlate very well with intelligence. This comes from University of Cambridge and the NIH in the US and they're using FMRI, or actually, I apologize, they're using conventional MRI which is much more affordable than FMRI, in order to look at what your brain is doing. Normally an MRI gives a single image of your brain and then they can use that to calculate multiple structural features and that means that every region of the brain can be described with 10 different characteristics. And what these people figured out, which is kind of cool because it's a simple tech, is that if two regions of the brain have similar profiles then they're in a connected network. They invented the idea of something called morphometric similarity networks and can say how well connected are the hubs looking at the very basic physiology of the brain, and they said if there's connectivity in the MSNS in brain regions, links to higher order functions like problem solving a language, that your intelligence would be higher.

[Dave:](#) This is particularly interesting because it's a very easy test to do and it correlates very well with some of the stuff that we're doing at 40 Years of Zen where we're mapping connectivity of different areas of the brain across different wave links of EEG in order to make the brain work better, or faster, or have neurons fire at different signal amplitudes or at different parts of the brain. What's going on here is the brain is way more hackable and way more visualizable than we thought, but there's still a heck of a lot we don't know about what intelligence actually is or what you can do about it.

[Dave:](#) Intelligence is really interesting because if you look at game changers, which is my statistical analysis and book about the last almost 500 episodes of Bulletproof Radio, what I found was that the people who are game changers, that is they've done something noteworthy enough to get on the show, Nobel Prize winners, Navy Seals and all sorts of cool people, one of the big three buckets was smarter. These are people that are doing things to be smarter, they're doing things to be faster and most importantly, they're doing things to be happier.

[Dave:](#) So happier people tend to be more successful and do big things, but they are also conscious of doing things just more intelligently, which is why on today's episode we are going to talk about intelligence and that's because in today's episode I'm going to interview Dean Simonton, a distinguished professor of psychology at UC Davis who has had a career of almost half a century as a social psychologist focusing on genius creativity, aesthetics and leadership, and he's looking at eminence, giftedness and talent in science, philosophy, literature, art, cinema, politics, even in war. He's received three Mensa awards for excellence in research and has authored more than 500 publications, including a dozen books. And his newest book, which is what we're going to talk about on the show today is called The Genius Checklist, Nine Paradoxical Tips on How You Can Become a Creative Genius. This is from a guy who's studied it probably more than anyone else alive, at least according to what my trolling of the internet and just looking

around and saying who could I interview about this, this is the man himself. So, Dr. Dean, welcome to the show.

[Dean:](#) I'm glad to be here.

[Dave:](#) Why did you spend 50 years looking at intelligence?

[Dean:](#) Well, to me it's a fascinating group of people. Here you have all these individuals who have made lasting, enduring contributions to human civilization in some area or another, arts, science, philosophy, politics, war, whatever, so these are people who are intrinsically valued by our culture, by our history, and they also stand out. Not everybody can do this. Not everything is Napoleon, not everybody is a Beethoven or a Michelangelo, so what makes these people able to do what they were able to achieve in the same lifespan that we have too but they achieve so much more.

[Dean:](#) And it was actually a group I first encountered when I looked at it in an encyclopedia when I was a little kid and where how do you get into an encyclopedia in the first place? And I find all these strange people had to do something to get there. They had to make a name for themselves. They had to make history. So to me it's an intrinsically interesting thing and I was just fortunate to find out that I could make a career out of studying these folks.

[Dave:](#) How do you study someone who's dead like Napoleon?

[Dean:](#) That's a good question. Fortunately, by the very fact that they attain distinction in their own life there's a huge amount of records that are ... Well, that's what we call the historical record and this has information about their biography, the context in which they lived, various kind of psychological characteristics you can actually make inferences about their intelligence based on biographical records of how quickly they developed ... You have someone like John Stuart Mill for example who's writing the history of Rome at six and a half and you ask, okay, what's the normal age in which people would write their first history of Rome? And it's a lot older than six and a half. So these people attract very early because they usually tend to be very precocious, they attract very early a lot of biographical information. People save their first notes that they wrote, their first letters, their first projects, of course nowadays we'll have photographs of them, and so basically use the historical record, the biographical record, and then from that you try to extract various kinds of psychological variables like intelligence, or personality, or motivation, or whatever. It's not easy. It's much easier to do it in a laboratory. But on the other hand, it's very hard to get Napoleon to the laboratory.

[Dave:](#) They say that history is written by the victors, so if you were to look at Napoleon from say Admiral Nelson's perspective, Napoleon was this evil man who needed to be defeated, and if you looked at it from a Napoleonic perspective it would have been very different. Are you sure when you're going back hundreds of years and looking at these figures that we're not getting the equivalent of Instagram posts for today where people make themselves look like [inaudible 00:07:01]?

[Dean:](#) Well, you have to focus on what are verifiable facts and also remove value judgments. Whether or not Napoleon lost the battle of Waterloo is not dependent on your perspective. So there are facts that are questionable, things you have to take with a grain of salt, and then there is other facts that ... So, for example, when I looked at military genius I focused on whether or not you won or lose a battle, and there's very few battles where's it's controversial about who won it or lost it because usually the army that lost ends up retreating, and that tells you something.

[Dave:](#) Okay, so part of what you're using to define genius, at least genius in the art of war as we're talking about right now, although you look at genius across almost every discipline-

[Dean:](#) In fact, that's actually a minor area. I tend to focus on scientific and artistic intelligence.

[Dave:](#) Okay. Those are the areas I wanted to talk about more but it's just easier because I once heard of Napoleon. When you're looking at this stuff you can, okay, somebody won and therefore they were probably better and you look at it statistically overtime ... How do you boil that down into something like genius which seems very ephemeral and hard? I'd love to say the history of genius, but what's even the core definition of that?

[Dean:](#) Okay, first of all, there's two main definitions of genius that you see in a standard dictionary and I use both of them, one is one that's very, very popular and that is the IQ definition. In one dictionary for example, the American Heritage Dictionary, it says that if you have an IQ of 140 or above you're a genius, which rules out a lot of Mensa folks by the way because they only have to have IQs of 130, but that's one definition, an IQ of 140 puts you in the top 1% of the population.

[Dave:](#) You're probably also way more likely to be crazy, right?

[Dean:](#) Not necessarily.

[Dave:](#) [crosstalk 00:09:12] statistics, the smarter you are the more likely you are to be crazy?

[Dean:](#) High intelligence people tend to be fairly sane. In fact, there's a positive correlation between IQ and both physical and mental health. It's not a huge correlation but it's a positive correlation. But anyway that's one definition.

[Dean:](#) The other definition, which I use in most of my research, is outstanding and unique achievement, you've gone down in history for doing something where you really, really stand out. This is what separates, for example, a creative genius from someone who is a champion weightlifter. It doesn't take genius to be a champion weightlifter you just have to lift more weight than anybody else, lifts, and that means lots of training and it may take some talent, but it doesn't take genius to lift weights. It's not a unique achievement. But in a case of like Beethoven, his fifth symphony is a unique achievement. No one else did something like that, no one else besides Michelangelo did the Sistine chapel, no one besides Newton developed his celestial mechanics, and so on down the list. It's unique, it requires a great deal of intelligence to do it, and so it links

into the other definition of genius, and it has staying power. We're still talking about these people centuries later.

[Dean:](#) And there's actually been studies showing that if you look at, for example, Renaissance artists in Renaissance Italy, the people who were most acclaimed in their own time are the same people we're still acclaiming today. Michelangelo was considered to be the greatest artist of his time and he's considered to be the greatest artist of the time, Renaissance, today.

[Dave:](#) You've actually said though that very intelligent people do not necessarily accomplish great things, so you're looking at people who have accomplished great things, seeing they're intelligent, but that the ... I guess I'm not sure what the logic loop there looks like.

[Dean:](#) Well, the thing is when we're talking about intelligence we're talking about general intelligence as measured by an IQ test, and those people who are high achievers tend to have general intelligence than the average person on the street-

[Dave:](#) But they have something else besides intelligence?

[Dean:](#) They had something else. For example, this one classic study that looked at, it wasn't done by me, it was done by someone at Stanford, looked at 301 geniuses and they found that motivation, determination, stick-to-itiveness, or what now researchers will often call grit, is far more important than intelligence per say. In other words, the intelligence provides a minimum. You have to have a certain intelligence in order to master your domain, in order to learn how to do equations, or how to do painting, or how to compose music, whatever. You have to have a certain minimum intelligence to do that and that's higher than the average. But beyond that, you have to come up with something that you're going to devote your whole life to and stick to it no matter what kind of frustrations you experience, what kind of obstacles you may face. Even Beethoven would have concerts where they were failures, they were not successful. Michelangelo was working on a Pieta towards the end and he realized it was a piece of crap and smashed it with a sledge hammer. So there's going to be a lot of frustrations and a lot of failures, and so you have to have that ability, that motivation, to keep on going even in the face of failure and that is something that turns out much more important than intelligence per say.

[Dean:](#) Another factor is you got to have creativity or imagination in most of these fields. You have to have something to say, something that, I guess back to what I said before, something that's unique, something that's distinctive. There are people who are very, very intelligent, they have very, very high IQs, they may even have some motivation and drive and determination, but they don't really have anything to say. Perhaps the best example I can think of, and I hope she's not listening to this because she'll be offended, but the person who used to be in the Guinness Book of Records for the highest recorded IQ, and that's Marilyn vos Savant, and she has a regular column every Sunday in Parade Magazine where she answers questions from people who think that you have to have an IQ to answer these question. You don't really, but it doesn't make any difference whether you need a high IQ or not. The point is there's nothing really distinctive about

what's she's offering the world. Almost every single thing she says you can get by doing a Google search. So there's nothing that sets her apart that makes her a Beethoven, or a Napoleon, or a Michelangelo.

[Dave:](#) So then what you've found from your 50 years of looking at this and really quantitatively digging in on 500 plus people is they had resilience, they had some kind of imagination or creativity, and they had above average intelligence?

[Dean:](#) Right. If you put it into that shell that works.

[Dave:](#) All right. Now, for people listening to this, can you raise your intelligence to be above average if you're just average?

[Dean:](#) To some extent, you can. A lot of people don't do anything intellectual during their life, and watching TV is not an intellectual experience ... Maybe listening to your podcast might be intelligence.

[Dave:](#) Maybe a little bit. I'll give you that. Feed my ego. Come on.

[Dean:](#) Just binging out on Netflix or whatever series is not an intellectually stimulating thing. Reading extensively, actually doing problems ... One of the things I used to love doing is I used to belong to Mensa, I don't anymore because it's kind of dumb, you can get a Mensa calendar-

[Dave:](#) Did you just say Mensa was kind of dumb?

[Dean:](#) Yeah.

[Dave:](#) That's my favorite quote ever.

[Dean:](#) Well, there's nothing to do there. All you do is you attend these conferences where everybody is acting intelligent, but there's nothing really interesting about it.

[Dave:](#) Hey, eat olives or something. I hear you.

[Dean:](#) But the point is that you can get a Mensa calendar and every day you get a problem to solve, and there are different kinds of problems-

[Dave:](#) I thought I was getting the least attractive set of centerfolds ever but that's not what's in a Mensa calendar?

[Dean:](#) Probably that, too.

[Dave:](#) Just kidding.

[Dean:](#) But the thing is you have to do things to stimulate yourself, learn a language, attend cultural events, do problem sets-

[Dave:](#) Does that raise your IQ though? Does that really do that?

[Dean:](#) That's a good question because a lot of the research suggests that a lot of it tends to be very specific to the particular problem that you're working on and it doesn't generalize very well to other tasks and it also takes too long. If you want a quick fix, we're talking about devoting decades to trying to stimulate yourself and then maybe raising your IQ by half a standard deviation, are you willing to do that?

[Dave:](#) I'm not willing to do that, but there's some other shortcuts. In *Game Changers* I wrote about some of the software for increasing food intelligence, doubling the working memory, which it's really painful in that you feel like a complete failure for a while, but you can do it in about a month. My IQ test on different ones rose by 12 points from doing that.

[Dean:](#) That's good. That's a standard deviation.

[Dave:](#) That was pretty amazing. I just smothered neuro-feedback related stuff that has some good science behind it to we're increasing the charge, the charge of firing of neurons, which is a trainable effect. So there's some weird stuff that may help. And Daniel Amen came on the show and said if you're dealing with toxins, or dealing with low blood flow in the brain, I believe you can actually ... You can regain 15 points of IQ of IQ points that you've lost just because your brain wasn't well taken care of. So I'm looking for those things and you're saying that even without even any tech it's possible to get five or six IQ points just by working and doing your crossword puzzles, your other-

[Dean:](#) Yeah, [crosstalk 00:18:28] to keep yourself stimulated. I mean, this is not my research area because I don't do experiments. I take world-famous geniuses and put them in a room and try to raise their IQs.

[Dave:](#) That'd be a lot of fun. It's the sort of stuff that I like to do.

[Dean:](#) Most of the stuff I do on intelligence is postmortem assessments.

[Dave:](#) Yeah, yeah, but you've also done 50 years of reading and you've written 500 publications, so you think about intelligence more than most intelligent people do. So that's one of the three. So maybe it's possible to raise your IQ by working really hard, what about this creativity, imagination thing? I mean, there's the famous Albert Einstein quote, how do people go about becoming someone who you might want to write about after they die? In terms of increasing that ability have you found ways that these successful people became intelligent or were they just born that ... Not intelligent, became imaginative or were they just born that way?

[Dean:](#) Well, one of the major personality predictors of outstanding achievement in both creativity and leadership is a personal characteristic called openness to experience. People who are high in openness to experience are people who just like to try various things out, they're very explorative, they're very curious, they'll try different kinds of meals, they'll read different things, they're open to different kinds of values and so

forth. This is something that is a very good predictor of, like I said, both creativity and leadership because a lot of times in order to come up with new ideas ... You've heard this term as a cliché, think outside the box. You've got to think outside the box. So you got to be really, really curious. And a lot of times a solution to a problem that you're trying to solve comes totally out of the blue.

[Dean:](#) So one good example, someone who is a historical figure who had a very high openness to experience is Galileo, the great Italian scientist. A lot of people don't know this, but he was very interested in a lot of things besides science. He was very interested in literature, he was very interested in the visual arts, he actually had training in the visual arts, and it turned out that his interests in the visual arts allowed him to solve a problem in astronomy that stumped everybody else.

[Dean:](#) When the new telescope came out, a lot of people thought let's point it at the moon and see if we see anything, so all these people pointed to the moon and all they saw was the same moon they normally saw but bigger. They saw a smooth surface with some discoloration on it like a marble, but nothing particularly outstanding. He pointed his telescope at that moon and he saw mountains and he not only saw those mountains, but he drew the mountains because he had learned chiaroscuro, which was an artistic technique in Italian art of depicting lights and dark shades, shadows and highlights. He learned that technique and he drew these beautiful, beautiful drawings showing that the moon had mountains and then all of a sudden people looked at the moon through the telescope and my gosh, he's right, the moon has mountains. But they never saw that before, partly because Aristotle said that the moon had a perfectly flat surface so they just saw what they were supposed to see, but also because they didn't have any artistic training.

[Dean:](#) By the way, it's kind of interesting, Galileo's drawing of the moon was good enough that one of his artistic friends actually included a painting of the Madonna while he has the Madonna standing on the moon with the moon having mountains instead of its normal, smooth surface as in traditional paintings. So as an illustration of his breath of interest, his interest in the arts and literature gave him a perspective that allowed him to become a great astronomer. Now, how do you get that?

[Dave:](#) Well, it sounds like cross domain stuff as part of ... Naveen Jain who started seven companies, ranging from a company mining the moon for minerals to another one looking at the human bacteria or the bacteria in the human gut, just all these different things, who says to be really great in the field you have to come from outside the field. So is that part of this, just being curious about all kinds of stuff?

[Dean:](#) Curious about all sorts of things and recognizing that there's not necessarily any boundaries between these various things, that your interest in this may end up having consequences for that.

[Dean:](#) So, you're interested in Buddhism and you end up working in high-energy physics and you decide to come up with ... I'm talking about Murray Gell-Mann, got a Nobel Prize, and he comes up with eight-fold path, which is actually inspired by Buddhism. Where does that come from? Or the cork, that the word cork comes from James Joyce's

Finnegan's Wake. So having a curiosity ... In fact, one of the things that's interesting was a study done where this person looked at great scientists, he stratified these scientists, the highest level of scientists were the people who were Nobel laureates, and then the next level were people who were elected to the national academy of sciences, and then there's your normal run of the mill scientists, they have jobs at good research universities but they're not in the national academy of sciences and they certainly haven't got a Nobel Prize, and you look at their avocations, did they have any hobbies? And it turns out that the greater the scientist was the more likely they were interested in literature, or the visual arts, maybe they did photography, did painting, they played an instrument. A lot of people know that Albert Einstein every once in a while would take a break and play Mozart sonatas on his violin. He also likes [inaudible 00:24:48]. That was an interesting thing.

[Dave:](#) It's kind of funny that from the CTO of Microsoft during their big growth years, Nathan Myhrvold, no ado it was him but he was one of the guys who did sous vide cooking, this technique of using very precise temperature control and ended up writing a huge set of books about that, which is completely orthogonal to software development and all that stuff but we see that.

[Dave:](#) So someone's listening to the show and they're saying, all right I want to turn on more of this, does that mean they just need to go do something that they have no interest in or how do you put this into action if you actually want to be more like one of these great geniuses throughout history?

[Dean:](#) Well, first of all, a lot of us have curiosities that we don't pursue because we say well that's going to take time away from something more important on my list-

[Dave:](#) Like Facebook. Yeah.

[Dean:](#) Yeah. Right. That's the interesting thing, and by the way I haven't figured it out because there's been major changes in technology and I don't know if it's a net gain or a net loss because one thing Facebook does do is there's all this stuff that you're exposed to out of the blue-

[Dave:](#) That you could be curious about.

[Dean:](#) That you could be curious about and you could follow and you may end up having another interest or surfing the Internet, it's so easy just to click on a link and you're someplace else and you click on another link you're someplace else, and next thing you know you're studying ancient Somalian language or something totally random. But the point is you got to pursue those and just follow your curiosity. Don't say, well, I don't have time to do that. A lot of people have these things they've always wanted to do by they never got around ... Say, I've always wanted to play an instrument, well, why not? Why not take lessons? I've always wanted to paint. Why not?

[Dave:](#) I would say that writing a book is a great way to do it about something that you don't know anything about, which is ... I've written a few books now, at this point you've

written about a hundred time more than I have, at least published things, and that is one of the ways. But I've also said this was going back 15, almost 18 years or something, I said I'm going to learn how to play the guitar so I bought a guitar, I still haven't learned how to play it because the investment in time go get even half way decent seemed really high. So then I bought a Rocksmith, which lets you learn much more quickly by playing a video game with a real guitar and then I realized I don't have an hour a day to do that. And to this day I haven't done it although I follow a lot of other interests. Is there some sort of way of figuring out which interests have the highest return on investment for that time that you put into them that are more likely-

Dean: I don't know about that. I think one thing is that when you pick up something new ... Like you've already said, in your own experience, you do find yourself getting to a point in some areas where it's the law of diminishing returns. I had that happen to me ... I learned guitar and I played in rock and jazz groups for a while, but I reached a point where I realized that no matter how much I practice I was never going to be really good. It was just not worth it anymore so that was something that I was willing to give up. And there was other things I realized I'm never going to be really good at it, but there's still some benefit off of it. So for example, I had this hobby of learning Spanish and I listened to tapes and I drew readings and all this kind of stuff, and I finally realized that I plateaued at intermediate Spanish. It's just where I'm going to be forever, which means if I go to a Spanish speaking city I can get around and I can go to the store and things like that, I can get to the airport, but I'm never going to come in in a conversation in any fluency at all. But I'm still learning about Spanish culture, Mexican culture and all that.

Dave: So the benefit to your creativity of being an adequate guitar player and an adequate Spanish conversationalist isn't that you're the world's best in those things and that they contributed to your genius in your core field, which is-

Dean: You open up your mind, yeah.

Dave: Okay. What do you think when people confuse IQ and genius? Does it make you mad? Does it make you sad? What happens there? Why is the difference so important?

Dean: Well, I think the main thing is there's too much emphasis put on IQ and intelligence test performance. There's no doubt that general intelligence is an important thing to have, no one wants to have low intelligence ... It even becomes a political issue recently, who's intelligent and who's not, who's got the highest IQ in politics? I won't name any names but I'm sure your listeners can guess who I'm talking about. And the thing is that it is one component of what is necessary. And too often people say, well, I'm not really bright enough to really do anything ... Heck, you probably are.

Dean: There was this study that was done at Stanford where they tested over 1,500 young kids and they picked those that had IQs of 140 or above, they sunk in a few that had IQs below 140 because they were a relative to some of the people and they didn't want to offend anybody. But any case they were very, very high IQ kids and then they followed them all the way into adulthood to see if they became geniuses, adult geniuses, and what was interesting is there was not one single Nobel Prize among them, which was kind of a disappointment. You would think with 1,500 plus kids with IQs top 1% you get

a Nobel prize or two, and they didn't get any. However, there were two kids who took the test and didn't satisfy the criteria, they were too dumb to make it into the sample, and they both got Nobel Prizes in physics. One for inventing the transistor. At first particularly in one of those kids, they were really kind of disappointed because they thought, God I'm not smart enough to be in this group, but they didn't let it get them down. They went ahead and got PhDs at top-flight graduate schools, they ended up getting Nobel Prizes, and so I think the problem is that when people think that they don't have a genius level IQ they may think they're doomed, they're not going to be able to achieve much-

[Dave:](#) So, a learned helplessness there.

[Dean:](#) Yes, it's like a learned helplessness thing. [Richard] Feynman, everybody knows how great of a mind he has, what great imagination he had, and his IQ was 125. Watson, his IQ was about 125 and he discovered DNA, co-discovered DNA. So you can't let the IQ score determine who you are, and that's what bothers me. If I don't make Mensa that means I'm doomed, no, not necessarily.

[Dave:](#) Well, I hope that's an inspiration for people who have inadequacy thoughts about their IQ because there's ample evidence that that's not what's going to get you there, although it helps. It's sort of like being tall.

[Dean:](#) Right.

[Dave:](#) I mean, you look at your odds of being paid they go up a thousand dollars a year for every inch over six feet you are. That's just how it is, but there are plenty of people who are a lot shorter than me who make a lot more than I do so you're not bound by those laws.

[Dave:](#) In 1999 you said something else that was really interesting, you talked about how the more intelligent a president is the harder it is for them to get elected, why is that?

[Dean:](#) That's an interesting result. I mean, that was an old study and it hasn't been replicated so I don't ... It hasn't been disproven, but I haven't updated the data because I stopped doing research on presidents after a while.

[Dean:](#) But anyway, I think what it is, is that if you are too intelligent then you have problems effectively communicating with the people who are going to be voting for you. And it's interesting to me, there's some evidence for example, that British Prime Ministers on average have higher IQs than presidents of the United States, and that's because in order to be a Prime Minister you have to be supported by your fellow MPs, your fellow parliamentarians. So they are already above average in intelligence and so you have to be more intelligent than them. But in our system you have to appeal to the American voter and so that means that you can be too bright to be elected president in the United States.

[Dean:](#) And partial support for this, even though I haven't replicated this for our more recent presidents, I had a study come out in Journal Applied Psychology in 2018 where we actually look at managers and looked at their rated effectiveness on the part of the people they manage, these are standard businesses, and what we found was that the managers could be too smart to be effective leaders. In fact, they fit perfectly this mathematical model I published way back in the 1980s where their intelligence had to be a little bit more than one standard deviation above everybody else's. But if it was much more than a standard deviation then their leadership effectiveness decreased. So we'd like to have leaders that we can understand, basically.

[Dave:](#) It reminds me of a great friend of mine from when I was going to business school who I think was the smartest person in the class and I had to work really, really hard to just follow a conversation with her. There was not too many people talking to her because ... I mean, it was work, it was intellectually stimulating, and to her she was probably dumbing it down ... Sorry, to understand it, but I felt that. I think all of us has someone who's so smart that they can't communicate with us and you're saying that that in fact can be more subtle but even at a presidential level if you can't communicate well.

[Dean:](#) And the problem is the catch-22. If they try to lower their level of intelligence so that they're communicating, then they often sound like they're talking down to you.

[Dave:](#) Right. Right. And that's even worse than sounding too smart. No one wants to do that.

[Dean:](#) There's a very interesting study that was done, it was a classic study of highly intelligent kids in New York, in the New York city school system, and she found this kid who was considered to be the class nerd. Everybody looked down on him, he talked over all their heads, he was using words like capitulation and ennui in elementary school, and it turned out that there was a special opportunity class for gifted children that had been set up in the New York City school system ... His IQ, by the way, was 180.

[Dave:](#) Okay, that's a really smart guy.

[Dean:](#) That's a really smart guy. They put him into a special class where the average IQ was in the 160s and he was immediately elected the class leader because now he had a followership who could understand what the heck he was saying.

[Dave:](#) And because he was then one or two standard deviations [crosstalk 00:37:18] than one.

[Dean:](#) Yeah.

[Dave:](#) Okay. Now, in your book, which is fascinating, so it takes a long time to fully just boil down and understand all of this amorphous data about intelligence, you talk about intellect and drive and how those are important to everything, but then you also boil down to creators do one set of things and leaders do another set of things with their intelligence. Can you walk me through the difference between creators and leaders and how they apply intelligence and genius?

[Dean:](#)

First of all, they are very similar in a lot of ways, they both tend to be higher in intelligence like you said, they tend to be higher in motivation, they tend to be higher in openness to experience, but there's one fundamental contrast between them and that is that the leaders are far more extroverted and the creators tend to be far more introverted. I'm using extroversion in the very broad sense that's used in the big five personality inventory where it's not just being sociable, it's interest in exerting dominance over people, influencing people, it's associated with a high need for power, and leaders have that and most creators are not that interested. Some are, but those creators who are they're more likely to become lab directors and then move up into administration and then become president of the university or something like that. But most creators, they just want to go to their studio and do their painting, sit down at their desk and do their mathematical derivations. They're really not that interested in influencing people. To be a leader, you have to spend all the time just thinking, okay, what can I do next to get more people to follow me or to win the next battle and one way or another, asserting dominance, win another election? That's a really major difference between them.

[Dave:](#)

I remember this interview with, this was years ago, someone who has worked closely with Michael Jackson, who certainly has a cloud over him right now, but as a creative genius I think everyone would acknowledge that he was a creative genius, and in the interview, I think it was one of his producers or something, who's saying Michael is always pushing, just pushing, pushing, pushing, and the producer had asked him why do we have to do this and why do we have to do it so fast? And Michael's answer was because if I don't do it, Prince will. So I guess the artist formerly known as Prince-

[Dean:](#)

Right.

[Dave:](#)

So that's an example of someone who clearly was a creator, a creative genius, but also had that desire for power and leader ... Have you studied people who scored high on both where they had to have that power in leadership and have high creativity at the same time? Is that super unusual and what do people like that turn out to be?

[Dean:](#)

Well, one of the things that a lot of creators face is they have a lot of investment in being outstanding in their field, they want to be outstanding in their field, and it's sometimes hard for them to recognize that they actually do have competition. And it's particularly true when you consider that they're not being weighed on the same scale ... I mean, you could say there's something like how many records sold or whatever, but Prince is not doing the exact same thing as Michael Jackson is doing. They're doing something distinctive and unique. You can tell when you listen to them who you're listening to. And yet you want to feel that you stand out higher than anybody else.

[Dean:](#)

So you see this all the time, you see certain rivalries that come up like ... There was a big rivalry between Michelangelo and Leonard de Vinci, they were competitors, and they actually had this one competition where they depicted the exact same scene in the form of drawings and then the question was who did the best version of it. And so, I think part of it is that they have a huge investment of their self-esteem in being the best, they want to be the best at what they do, and sometimes it's hard for them to accept that they do have competition. This is one problem that all creators have to face is that

creativity, whether you're a scientist or an artist, is never guaranteed. You may have a really great song and maybe this really great mathematical equation, and then you have a flub, you have a failure, something that doesn't work and then meanwhile you have these other people around, these other people in your same field, who they're having successes when you're having failures.

[Dean:](#) Even someone like Albert Einstein, a lot of people don't know that Albert Einstein wasted three decades of his life working on a unified field theory that just completely failed. It just didn't work. And meanwhile he had these younger colleagues who were being much more successful and they're being much more successful because they were using quantum theory and he refused to use it. So you invest a tremendous amount in being great in your field and it's not always easy to accept the fact that you have competitors.

[Dean:](#) Now, I don't know if they want to control people, I don't think it's matter of a leader trying to exert influence, they just want to be the best in what they do.

[Dave:](#) So if this is one of the things that sets apart the geniuses, just the desire to be the best, there are a lot of people I've met who say I have no interest in being the best, does that mean that they're-

[Dean:](#) Good for them because we need them.

[Dave:](#) They want to be the best at being average.

[Dean:](#) We need someone who's not interested in being the best, who just does the job that they're supposed to do, that meet the job specifications, that's perfectly fine. I don't know if it's arrogant or not but we don't need everybody trying to be the best.

[Dave:](#) It's a tough call. I believe there's a core intrinsic pleasure in doing something well, even if it's brushing your teeth. I did a crappy job brushing my teeth or I brushed my teeth and my teeth were clean they feel good, just trivial things, it feels good as a human to do things well, at least it does for me. But I can tell you when I was getting an MBA I intentionally didn't even want to be at the top of the class because I realized they'd give me an MBA even if I was at the bottom of the class. ROI. I had some really smart classmates, I tell you. So that mindset maybe is a little bit different, but in order to be one of these, what I would call game changers, what you're calling creative geniuses or geniuses throughout history, they all shared that desire to be the best. Are there creative geniuses out there who just don't care about being the best, they just want to tinker yet they create-

[Dean:](#) One of the things we do see is the one-hit wonders, the one-shots, they come up with a great idea and it's great enough that they become famous for it, like they have one hit song ... You can actually Google this, one-hit wonders, and you'll get a huge list of all these pop artists who had one hit and that was it, and the thing is, is they were ... Some of them were not happy with that and they kept on trying to record more, but other

ones, they were perfectly fine with that, they would every once in a while do a concert and sing their one hit and they were content with that.

Dean: Truman Capote, the novelist, had one great novel and he was working on another one when he died ... Well, it wasn't really a novel, it was a ... What would you call it, a fictionalized nonfiction or something like that, but he had one great book and then spent most of his time doing the celebrity circuit, maybe talking about the next book, but he didn't seem to have the need to be a Dickens or a Jane Austen that keeps on going, producing one book after another after another. So there's some people who are willing to say, okay, I had one really good thing and I'm really able to rest on my laurels now.

Dave: So that may be just a personality thing or maybe it's upbringing.

Dave: Okay, so I'm going to go out on a limb and say that the majority of people who listen to Bulletproof Radio are interested in the sort of things I talk about, do one thing every day to make yourself better, not necessarily the best but at least to improve your condition, your happiness, whatever you're wanting to improve, just because being better at whatever the core things are probably reduces struggle in your life. Avoidance of pain, if not, pursuit of pleasure through excellence. Now, if you have that lens on and you had something to say to them, especially for younger people, how do you know if you're a creator or a leader? Because if you'd asked me when I was 24, 25, I'd have to do both with excellent and I wouldn't have necessarily known how to slice and dice those two sides to what I like to do. I mean, you're 71 I think, after all of your life experiences, how would you tell a young person to know which one of those they are?

Dean: Well, first of all, you have to do a lot of exploration when you're younger and try out different things and you're probably going to find yourself naturally channeled into those things that are really you. We're all born with a certain potential, we're also born with a lot more non-potential in various things ... Like I mentioned earlier I learned I could never be a musician, I just never had it in me, I also learned that about sports, I tried, I tried, I tried but I could never be a really good athlete, but how do you know that? You have to try. You have to go out for the team and not make it. I went out for the school choir and didn't make it when they took almost everybody. So you have to be willing to fail, spend a lot of time trying things out, until you find that thing that is really you.

Dean: Now, the problem is, is sometimes it takes a long time for this discovery process to work out, so a lot of times people have talents that they don't realize they have until they're adults, even old age. The best example I can think of is Grandma Moses. Here's somebody who she just did embroidery and she was perfectly willing to spend the rest of her life doing embroidery, she did one painting once using normal house paint, but didn't go anywhere with that. And then it wasn't until she was in her 70s that all of sudden she realized she couldn't embroider anymore because she got terrible arthritis and she started getting very depressed and a sister of hers said, well you tried painting once before you probably still can hold brushes because you don't have to be as adept at holding a brush as you do an embroidery needle.

[Dean:](#) So she took up painting and all of a sudden she became famous. There's a painting by her in the White House. One of her paintings is on a postage stamp. Her first painting sold for \$5 and pretty soon they're being sold for tens of thousands of dollars. She found out she had a talent for producing, we call it outsider art. I think it's good art. It's an art that fills a particular niche, Americana, Fourth of July, that kind of stuff, but she didn't discover she had that talent until what she thought was her talent ... She was no longer able to do it. And of course, if she had died when she was 69 years old ... No, she was my age, 71, she never would have discovered this talent that she had.

[Dave:](#) You talk about BVSR, blind variation and selective retention, when it comes to creativity, what in the heck is that?

[Dean:](#) It's actually a term that we have other terms for, trial and error, generation and test. Those are basically synonyms. But the basic idea behind BVSR, or trial and error, or generation test, is that the only way you can make major discoveries ... And when I mean major discoveries, I don't mean just scientific discoveries, I mean major artistic discoveries like discovering new styles like cubism is a discovery, analytical and aesthetic cubes was a discovery that Picasso and Braque made. In order to make discoveries, in order to invent new things, you have to be willing to try things out and fail. So what BVSR basically involves is taking risks. You probably know this literature better than I do given your background, but entrepreneurs who are most likely to be really successful are the ones who have the most failures as well.

[Dave:](#) So BVSR is an elegant and academic way of saying willing to fail and then get up again and do it anyway?

[Dean:](#) Do it over and over and over again, because the thing is, is that if you know ahead of time that it's going to work then you're not venturing too far beyond your comfort zone in terms of knowledge and expertise. So you have to be willing to fail, you have to be willing to take risks.

[Dean:](#) One of my favorite illustrations is Thomas Edison, a lot of people don't realize how many failures he had before he had successes. He tried over a thousand different kinds of filaments for the incandescent lamp until he finally settled on one that no one could even imagine would even work, he carbonized bamboo fibers, and that's what was the first electric lamp.

[Dean:](#) There was one time he was working on a battery with an assistant and they tried 900 different configurations to see if they could get a workable battery that was an improvement on a storage battery that they already had, and none of them worked. All of them were worse. And his assistant complained we've got nothing but failures, and he says, no, we have 900 successes, we know 900 things that don't work so we've moved forward, because he took very detailed lab notes. He had lots successes, obviously that commercially viable incandescent lamp because there's other people who invented incandescent lamps beforehand, and the phonograph and so forth, but he had horrible failures as well. And a lot of people don't realize he worked a long time on a process for extracting iron from low grade ore, he lost a huge amount of money on it, the process never worked, and one time he asked his accountant, okay, how much did

this cost me, he finally gave up, and he says you're not going to like this boss but you basically lost all the money you earned from the electric light bulb.

[Dave:](#) Oops.

[Dean:](#) Oops. One of the things he worked on that was a total failure was an electric automobile, no one has ever heard of an Edison automobile, the problem is that it only ran so far before it ran out of electricity. Not surprisingly, he worked a long time on the fuel cell, which is a cell that generates electricity directly from the fuel by passing dynamos and steam generators and stuff, never worked. The closest he got to it working is he blew out the windows of his laboratory one day, but he never ... We have fuel cells now, but he never succeeded.

[Dave:](#) So definitely the people who are doing the biggest things fail the most.

[Dean:](#) Yeah.

[Dave:](#) All right. I think it's really inspirational to say that and certainly for people early in their career ... You see the Zuckerberg of the world, who 25 started Facebook and never looked back and all that stuff, but that's highly unusual. Most entrepreneurs, like you said, including me, have failed more than a few times.

[Dean:](#) Well, somebody's founded MySpace, and that's a failure.

[Dave:](#) Well, I think the guy who founded MySpace walked away with hundreds of millions of dollars.

[Dean:](#) He sold it?

[Dave:](#) He did all right, but eventually ... Yeah, MySpace as a company didn't ultimately succeed.

[Dean:](#) Right.

[Dave:](#) Now, you wrote something, this is about 22 years ago, you wrote a book called *Psychologists Defying the Crowd: Stories of Those Who Battled the Establishment and Won*.

[Dean:](#) That was an edited volume.

[Dave:](#) That was an edited volume? Okay.

[Dean:](#) And I just contributed one chapter.

[Dave:](#) Got it. Got it. So I guess it was your chapter, it was called "It's Absolutely Impossible? A Longitudinal Study of One Psychologist's Response to Conventional Naysayers," so

when people flout conventions what did you learn from studying people who win against the grain?

[Dean:](#) Well, first of all, it's sort of like what you said at the very beginning of this interview, history is written by the winners, and this is one fundamental bias in the research that I do is that I tend to study the ones who are successful to some degree. So there are a lot of people who failed in the initial part of their careers, who just ... I guess back to the determination, persistence, and energy and drive and all that, and then they finally have their big success. They can have more failures later too, and who knows given what's going on Facebook may end up failing, it's possible but because of that determination they have a success.

[Dean:](#) What I don't study is all those people who failed and failed and failed and finally gave up.

[Dave:](#) Or just became excellent at failing and never stopped.

[Dean:](#) Because the thing is it just seemed to me is if you just do on the back of a napkin a calculation, the number of creative geniuses out there ... And I focus on creative geniuses rather than leaders because leaders are restricted in a number of positions they can occupy, there can only be one president at any one time. But one thing that's nice about creativity and creative genius is you can invent your own domain. It's done all the time. There's all of sudden something like the smartphone or whatever, that didn't exist before.

[Dean:](#) If you look at creative geniuses, a lot of them ... Well, back to the napkin calculation, there should be probably about 10 times more than we actually know roughly. In other words, there's probably a huge percentage of people out there who didn't make it and they're now Uber drivers or whatever and they're not successful. You might want to say, well, there's something in them that they're not smart enough, they don't have enough drive, whatever, but I'm not buying that because I think a lot of them ... It's just luck of the draw. They had some ideas, sometimes they have really good ideas and then all of a sudden they're scooped by somebody else ... I had a graduate student who did this really, really great dissertation, and she's getting all ready to write it up for publication in a major journal and then she saw that an article had already been published on the exact same topic and so she was scooped.

[Dave:](#) Yeah, that can be frustrating.

[Dean:](#) Fortunately, she got a postdoc and retooled herself and did something else, but the point is, is that there's a lot of people even with good ideas that find themselves preempted.

[Dean:](#) Have you heard of Gray? Have you heard of Gray's telephone?

[Dave:](#) Exactly.

[Dean:](#) You've heard of Bell Telephone I'm sure, but you haven't heard of Gray telephone. Well, Gray's patent application was delivered the same day as Bell's patent application, but it was processed second.

[Dave:](#) It's really interesting, there's a paper written by a Stanford law professor I used to do yoga with in Mountain View and it's called *The Myth of the Lone Wolf Inventor*, or the lone inventor maybe, and he goes through all these major inventions like that where at least two or three people seemed to have the same idea about the same time and it was a race to the patent office. So you're saying that it's rare that there's just one person who's working on a problem and no one can explain why that is but it seems to hold true.

[Dean:](#) Actually I've done research on that.

[Dave:](#) Cool! Do tell me what you've learned. That's what we're here for.

[Dean:](#) There's a phenomenon called the multiples phenomenon where two more people come up with the same idea, an invention or discovery, roughly the same time, but completely independently of each other. It turns out that you can fit a probably model to that. It turns out primarily a chance phenomenon, and this is how it works, you have a bunch of people who all basically learned the same thing, they develop a similar expertise, they all go to graduate school and study psychics, or study engineering, or whatever it happens to be, and so they have a pool of things in their head and then they start generating combinations and just by chance you're going to have two or more people come up with the same idea at the same time. In fact, they almost have to come up with the same idea at the same time because the second one guy, or gal, communicates that idea that preempts anybody else. For example, right now I can guarantee you that absolutely no one in the world is working on inventing the wheel because that idea has already been disseminated, everybody's knows it's been invented already, so everybody is working on combinations of ideas that haven't been produced yet and as soon as it's communicated then that terminates any further work on that particular problem.

[Dean:](#) What's interesting, for example, is as you look at the history of these multiples, because scientific communication has become more and more efficient, the time lag between the first and last duplicate has gotten smaller and smaller and smaller. In fact, now it's almost instantaneous because people can post it online. They made a major discovery, they can post it online. And so it turns out it's a totally probabilistic phenomenon.

[Dave:](#) That is so fascinating, but it makes sense and it's something that would be invisible unless you studied it.

[Dave:](#) When you went through and you looked at people who defied convention you asked them four different questions and I want to finish our interview by asking you those same four questions, and one of the questions that you asked is what, if anything, would you do differently now? So if I could ask you that, what are the things now, as you had this career studying these things, what would you have done differently given the value of hindsight?

[Dean:](#) In the value of hindsight?

[Dave:](#) Yeah.

[Dean:](#) I guess the main thing I would have done differently is when you defy the crowd, when you try to do something non-conventional, it's kind of hard to stay cool, to suffer fools gladly. So there's a number of times that I would get really upset and really angry, I have had a number of in-class fights with teachers and things like that because I'm told you can't do that-

[Dave:](#) Watch me.

[Dean:](#) I'm like, why can't I do that? In retrospect of course, having the advantage of hindsight, I could say I know exactly where I'm going and I know it's going to work so just leave me alone, just leave me alone, we don't have to fight about this. So that's one thing I would do differently.

[Dave:](#) One thing. Another thing, and you wrote this paper when you asked all these people these questions about 16 years ago, so one of the things you asked them are what are the costs to you professionally of defying the establishment? So I've got to ask you, even over the last 16 years since you wrote the paper, have you continued to defy the establishment knowing what the costs are? Have you mellowed with age and experience?

[Dean:](#) It's not so much that I've mellowed with age. It's that establishment has moved closer to where I am. When I was a graduate student I was told point blank that you're not going to be able to publish any research in good journals. Well, I started publishing my stuff in good journals and I still publish my stuff in good journals it just takes me a few revisions before I finally get an acceptance. My critics are more willing to give me the benefit of the doubt instead of having me labor uphill. I'm a distinguished professor at a research university and so I've finally got to the point where I don't have to buck ... Now, you could say, yeah that's a safe thing for you to say, you've actually become more conventional, you've actually become more conservative and you don't really have any good ideas anymore, and there may be some truth to that, I mean it's hard to know.

[Dean:](#) There was a survey of imminent scientists where they were asked, and these were all very established people, famous scientists, and they were asked what's the best work that you've done during your career. And most of them said, well that's an arrogant thing to ask me, the best work I've done in my career is the thing I'm working on right now. Well, I'll bet you that most of them, that's not true. Just like Einstein, he would say the best that I'm working on is unified field theory, but he was wrong. It was the general theory of relativity.

[Dave:](#) In fact, there is a stuff of preeminent physicists that I came across and most of them did their best work in their mid-20s.

[Dean:](#) Yeah, or early 30s.

[Dave:](#) Yeah, and that's when their big breakthroughs happened and after that they're still doing fantastic work but the thing that won them the prize was something that happened early on even though maybe one realized how important it was for a while. So there is something going on with that.

[Dave:](#) Well, Dr. Dean, thank you for sharing your knowledge and wisdom from these multiple decades from looking at creative geniuses and leaders do. I appreciate that you've put so much time and energy into these things that are really hard to study and are ephemeral because I think it sheds some light on who we are as human beings and how people get to be fantastic at what they do. I appreciate you and I really appreciate your new book on the topic.

[Dean:](#) Thank you very much, Dave. I really appreciate it.

[Dave:](#) The title of your new book is *The Genius Checklist: Nine Paradoxical Tips on How You Can Become a Creative Genius*. And a word of warning for you if you read this, Dr. Dean has packaged some cognitive dissonance into a book because one of the examples in there is score really highly on an IQ test ... By the way, skip the test because it doesn't matter that much, I love that kind of thinking, but really if you want to look at becoming a creative genius let's look at what the best creative geniuses throughout history did and what we can learn from them in a rigorous study from them. It's very much the same kind of mindset that's in *Game Changers*, how do we go through all of this data, how do we boil it down, and in this case, nine tips on creative geniuses. It's worth your time to read the book. I would highly encourage you to check it out. Dr. Dean, thank you for being on the show.

[Dean:](#) Okay. And thank you for putting the plug in for the book.

[Dave:](#) Of course. Of course.