Transcript for Daniel Levitin | Weaponized Lies (Episode 641)
Full show notes found here: https://theartofcharm.com/641/

DANIEL: Year by year, the number of Nicolas Cage movies correlates with the number of people who drown in swimming pools.

JORDAN: Welcome to The Art of Charm. I'm Jordan Harbinger and I'm here with producer Jason DeFillippo. On this episode we'll be talking with Daniel Levitin. He's the author of *Weaponized Lies* -- great title. We're living in an age of information overload. We're constantly bombarded by information, it's getting harder and harder to tell what's true and what's not. Misinformation, disinformation, irresponsible information -- we're going to try to help everyone make better decisions and to think more effectively about the information that you encounter in your day to life.

Today we'll explore critical thinking techniques involving experts, pseudo experts, data, charts, words, and numbers, and we'll learn some techniques to think more critically and dismantle arguments on the fly, and last but not least, we'll find out why the average person only has one testicle and what that means for you. So, enjoy this episode with Daniel Levitin.

A lot of folks, when they think about these topics, they think, "Yeah, you know what? Other people sure are dumb and they get mislead a lot but I looked at this newspaper article the other day and it said that half of all humans only have one testicle. That was shocking. We need to do something about that." That actually, of course, is almost true, given that half the population has no testicles. These kinds of things are not always so simple but I think that even people who are educated, smart, and think that they think critically, sometimes are the ones that fall victim to this stuff even more.

DANIEL: I think the most important quality to have if you want to be an evidence based thinker -- a critical thinker -- is humility. If you realize that you don't know everything and you're open minded enough to take in new information, you can save yourself a lot

of trouble. The most dangerous thing is somebody who is so sure they know something but they're wrong and then they go off headstrong into the abyss, thinking that they're absolutely right and disaster can result.

You hear stories every once in awhile about somebody who puts jet engines on their car because they think it'll make it go fast. And they're so sure it's going to work but they haven't thought ahead to what will happen once the car has lifted up off the ground, how are they going to steer the thing? And a number of famous disaster -- the Challenger explosion, the Exxon Valdez, the Fukushima power plant -- can be chalked up in part to overconfidence, to not realizing that we don't know everything we think we do.

JORDAN: And that's a little scary, especially in an age where information is constantly bombarding us. We haven't necessarily evolved the tools to try to think critically at high speed about everything that's coming at us and requires a quick decision and things like that. And this is true from social media, when we're looking at our Facebook feed all the way to discussions we're having with people who are maybe deceiving us by accident, simply because they're repeating something they heard from somebody else and it doesn't have to be false facts.

The problem is sometimes the facts themselves can be true but they're just skewed. They're skewed deliberately or by accident using statistics or math or anecdotal evidence instead of empirical evidence and that's a big problem. I noticed in *Weaponized Lies*, your book, that critical thinking, when it comes to what we're hearing and reading -- it's really all around us and it has been since I was a kid. I mean, even those commercials -- "Four out of five dentists approve this toothbrush." Even that stuff is just kind of ubiquitous and now it's maybe a little bit more nefarious, not just used to sell toothbrushes but to sell political ideas.

DANIEL: The problem is that critical thinking is hard. We didn't evolve brains to think about the kinds of data that we are encountering

these days -- statistical data, big data -- we evolved to deal with things like rocks rolling down hills and warring tribes coming at us. I think the first step to making good decisions in any domain that you make decisions in -- whether it's your finances or relationships or try to choose a job. All of those things -- the first step is to realize that thinking about this stuff is hard and we have to take some time to do it and we have to practice doing it and recognizing our failings can help us to avoid the pitfalls. You mentioned skewed data and it got me to thinking, one of the tools I try to provide in the book and I'd like to share with people who are listening today is that often you'll find, if you go and look into it, they data are true but they're completely irrelevant to the point that's trying to be made.

One of my favorite examples of this is the finding that was published after my book came out that studies show that the number of books read by American school children falls every year after second grade. The number of books read per year declines for every year after second grade. What you're led to believe is that either students are slothful and lazy or that -- what's going on in the schools that they're not teaching our students discipline and good study habits? It's the collapse of the modern education system.

All these things might be implications and unless you stop and you think, "Wait a minute. Maybe the number of books read per year is not really relevant to any of these issues." In second grade you're reading short little books. You know, they might be 10 or 15 pages long. By the time you're in junior high school, you're reading Lord of the Flies, 295 pages. By the time you're a freshman in college, you might be reading War and Peace, 1200 pages. Number of books is not the relevant metric if you want to figure out how scholarly students are.

JORDAN: That's interesting for me because I essentially didn't read until my thirties -- other than school books -- but I went to law school. So if you ask me how much I read before age 30, I would say, "Almost nothing," but the truth is I read probably more than

any normal person ever would. I just read legal cases and other stuff like that.

So, it really does matter the data that you're looking at. And of course, you're not necessarily withholding data on purpose, we're just not necessarily asking the right questions. And in *Weaponized Lies*, you do talk about some of those questions. And I'm specifically going to leave out the math and probability notes on this I would say, because we don't need to prove everything today here on the show. And people can get the same info in Weaponized Lies if they need it. I want to focus on the ideas and the examples. So, are there five or six maybe major categories we see as humans with media manipulation? We see companies manipulating us, for example. Why don't we just start there? I feel like marketing and having companies manipulate us has been par for the course for so long. What are some of the most common examples you see of that, that most people maybe don't see or notice?

DANIEL: I think in general, yeah, there are some big categories of ways that we can be manipulated by companies, by the government -- one of them is the lack of a control group. And this is a concept borrowed from science but you might read claims for echinacea that it helps to fend off a cold. You feel a cold coming on, you take echinacea and then maybe four or five days later, you're completely better. There's no evidence at all that echinacea can help fend off a cold. What you need is a controlled study. You need people who are all coming down with colds and you give half of them echinacea and you give half of them a pill that looks exactly like it. That's what's called the control group. And you don't tell anybody which is which so their expectations don't factor into it. And if you do that, it turns out echinacea has no effect.

But there are a lot of claims made where there's a missing control group and it's not just medicines, it's things like, "Oh, if your parents read to you as a child, you're likely to do better." But we don't know how well or poorly you would have done if your parents didn't read to you as a child. It's not controlled, you

see. A second category is the relevant data that were just talking about with the books read example. A third category is claims that are asking you to believe one thing but if you look carefully at the language it might raise your suspicions. A lot of claims are vague or misleading and they're intended to be that way. Other times the people telling you these things just don't know the difference themselves. You mentioned four out of five dentists. Maybe we can dig into that a little bit.

JORDAN: Sure, yeah. Exactly.

DANIEL: So there was a claim that four out of five dentists recommend Colgate. This was a big ad campaign. Now, if you're a critical thinker, I mean there are a number of questions you'd want to ask here like, "Who are these dentists? Do they still have their medical licenses? Are they getting money from Colgate?" Another question is, "How many dentists did they ask? Did they literally ask just five or did they ask 500 and 400 recommended Colgate?" This matters. More to the point, you might want to know, "What question would a dentist be able to answer given a dentist's expertise?"

I've been going to a dentist all my life. My dentist has never asked me what toothpaste I use. He doesn't keep track. In order to know what toothpaste is best, you need to do one of these controlled studies we were talking about with echinacea, where you give a bunch of people Colgate and you give other people Crest and other people Arm and Hammer and Gleam and Aim, and Aquafresh and all the different toothpastes, and then you wait and see who develops the most cavities or you measure gingivitis or bad breath or whatever you're interested in. That's a controlled study. Without that, you don't really know. You'd need a medical researcher to do that. But dentists aren't running these kinds of studies, that I know of. So, I would actually add this as a separate category -- a case of failed expertise or pseudo expertise.

JORDAN: Sure, right.

DANIEL: Somebody is pretending to be an expert and they're not.

JORDAN: Five out of ten of my dad's friends don't recommend using smart phones, but I'm not going to listen to them because they don't know anything about technology or people who are my age and how we live and work, right? So, failed expertise and definitely -- I've got to just say, side note, I'm very impressed by your ability to rifle off so many different brands of toothpaste without even pausing. I don't think I could do that.

DANIEL: You should try me with breakfast cereals.

JORDAN: Pseudo expertise. Great topic. I'm really glad that you mentioned that. That's something that I feel like we fight a lot, both when we're watching the news here and just on the show here at The Art of Charm. Pseudo expertise is something that is -- first of all -- kind of a cancerous in society in general, certainly on in the Internet and in business especially -- in the business niche. I field questions about this all the time. "So and so is worth $600 million." Well, no and no, and also no. And they told you that to sell you this product. And also, that person has nothing to do with the field that they're selling you the product." I mean, there's so many things wrong with this. I would love for you to rip this one open.

DANIEL: Well you're absolutely right. The fact is expertise has become increasingly narrow in the last 30 or 40 years. There's so much information that we've created as a society. By Google's own estimate, we've created as much information in the last five years as in all of human history before it. And so, if you're a biologist or a cancer doctor or a specialist on Chinese art or a political pundit and economist -- if you want to maintain a foothold of expertise in your area, it's going to tend to be narrow. You'd be hard pressed to find somebody who is expert in the law. They're going to be expert in constitutional law or torts or criminal law, and even within criminal law they might be expert in murder but not in robbery. Expertise tends to be narrow.

So, I find this most often irritating with scientists who start talking outside of their domain. This isn't just an intellectual problem. It can have very real, practical consequences. I'm thinking of the story of Sallyanne Clarke, who was a young woman in England whose first baby died of what they called Sudden Infant Death Syndrome -- SIDS. And then a few years later, she managed to become pregnant again. She gave birth to a second child and within a few months that child had died.

Well, a prosecutor tried her for double murder, claiming that the odds of two infants dying of that syndrome in the same household from the same mother, were astronomically low. She must have murdered one or both of them. And they trotted out a pediatrician who testified for the Crown in England and said, you know, "The statistics are unbelievably low. She must have murdered one of the kids." Well let's take a step back now and think of this through the lens of expertise, getting back to that conversation we had a moment ago about dentists -- which toothpaste is the best for you to use because they're generally -- most of them aren't keeping track. Ask yourself, "Is a pediatrician an expert on infant death?"

JORDAN: That's a good point. Not necessarily. They're experts in infant health. It sounds like they should be experts in infant death but really a coroner would be an expert.

DANIEL: There you go. You want to talk to somebody who has seen hundreds of infant deaths in his or her career. And if you're a competent pediatrician, you might only see one or two, hopefully. Infant death is relatively rare, fortunately. So, the pediatrician messed up his statistics because he's not trained to think about infant death. And that put this woman in prison.

JORDAN: That's very tragic and it seems like the pediatrician should have known but I would imagine he's thinking, "No I've read several articles about this. I am an expert and I'm also a doctor."

DANIEL: Well and there's a conflict of interest like with the dentists who are recommending toothpaste. They don't actually benefit

financially if you have good oral health. They make their money if you don't. And I'm not accusing dentists of having an ulterior motive but you do have to worry about this kind of bias, at least subconsciously, and of course there are a few bad apples. And in the pediatrician's case, he makes more money if he's an expert witness than if he's not. So, there's an intrinsic bias there. As you say, you need a coroner or a medical examiner. Ultimately Sallyanne Clarke was exonerated and freed from prison, but she ended up serving three years first. And the whole experience was so horrible that she ended up committing suicide.

JORDAN: Oh, my God, that is terrible. Of course, because she lost two of her babies and then I would assume her marriage fell apart while she was in prison for murder.

DANIEL: I don't know about that. I do know that her husband stood by her and he believed her innocence.

JORDAN: What a great guy. That would be really tough. Geez, what a tragic story that is. My goodness.

(COMMERCIAL BREAK)

JORDAN: One thing that seems to be in the media lately that drives me bananas is this anti-vax crowd of not vaccinating your kids and of course now we end up with problems where healthy kids with parents who aren't knuckleheads are dying or getting measles because they have to go to school with somebody whose parents decided to read something on Infowars and now everybody is getting diseases that were eradicated when they got rid of pirates. Well I guess we still have pirates so it's fitting that we still have measles, never mind. What's going on with these folks?

DANIEL: This is a hornet's nest. You and I both live near ground zero for the anti-vaxxers which is Marin County, California. And I've been traveling around the country and I've run into these pockets of anti-vaxxers. And the interesting thing is they tend

to be better educated than the average person, they tend to be affluent, and they've somehow got it in their heads that vaccine cause autism -- the measles, mumps, and rubella vaccine in particular -- MMR. It began with an article in a medical journal by Andrew Wakefield, not an expert on autism but a physician in England who presented evidence that vaccines caused autism.

Well it turned out he admitted to fabricating data, his paper was retracted, and he's been discredited and lost his medical license. But, the story about this fake connection persists and one of the things I can tell you as a neuroscientist, is that once you come to hold a belief, it's very, very difficult to get you to give it up. Your brain clings tenaciously to beliefs that it's held, even when the evidence has been found to be bogus or untrue.

The additional problem is that we do see a correlation. In other words, parents who have kids with autism, in a large number cases, did vaccinate their kids and then the autism showed up sometime after. But, it turns out that's explainable. You can't give vaccines too early in a toddler's life. Their immune system isn't ready for them. We give vaccines at a very precise point in the development of a child when they're ready.

The other problem is that autism by definition, is a developmental delay. It's not hitting your regular developmental milestones, and it takes until a certain age before you notice that. You don't notice that your child isn't talking normally until after the age when he or she would be talking at all. So, the problem is that the vaccines are almost always given before the autism, just because time course of when the vaccine should be given is at a younger age than when you can even notice the autism. It doesn't mean that the one caused the other.

JORDAN: Right, of course and correlation and causation is another area. A great accidental or possibly deliberate segue I'd love to hear about. And I've seen this on television and I feel bad for these people. They say, "Look I vaccinated my son and you know, he

got autism and I met another person with an autistic son and he had his kids vaccinated. So, I'm not going to have the rest of my kids vaccinated. It's not totally illogical when you look at it like that, given the emotions in play and the consequences in play. But, it's kind of like saying, "Well be careful. Don't get your kid a driver's license because 99 percent of the people that drink and drive are people who have driver's licenses and are over -- of driving age."

It's like, well yeah. They do because those are the people who are old enough to drive and are able to drive and know how to drive and are at the age where their friends and them are drinking. They don't do it when they're 11. They don't do either of those things generally, when they're 11. So, that doesn't necessarily mean that one causes the other. But, can you give us some more concrete ways to think about this and to look at these problems critically? Because I want to give people some tools here. I think these are very important to look at not only these claims and evaluate them differently but any claim and evaluate them differently.

DANIEL: If you're not careful, your law school training is going to show through here.

JORDAN: I know, whoops. I thought I'd buried tat.

DANIEL: So, before we go to the correlation causation in general, let's circle back to the autism vaccine connection for a moment and invoke that principle of one of the earlier principles we were talking about of the control group. So it turns out that the way you would really know if vaccines cause autism is you take a bunch of kids at random and you give them vaccines, and another bunch of kids at random and you'd give them a sham vaccine. You know, you'd poke them with a needle but not really give them anything, and you wait and see if they develop autism in equal numbers.

JORDAN: I'm guessing that's not going to be allowed anywhere, any time soon.

DANIEL: It's unethical to do that but as you pointed out, the experiment was in fact done in communities such as Marin County and some pockets in rural England, where people just stopped vaccinating their kids. In those communities we tended to see measles outbreaks, of course, because the kids don't have the measles vaccine. They're not immune to it anymore and that can have terrible consequences. But more to the point, across a 10 year span in which vaccines were eliminated, autism rates remained the same.

JORDAN: Ugh.

DANIEL: So it couldn't have been the vaccines causing the autism, right? You've got the same incidence of autism even without the vaccines. But the anti-vaxxers still aren't buying it and, you know, I have to tip my hat to them because the instinct to question authority and to worry that maybe Big Pharma and the government have some profit motive. That's a cornerstone of critical thinking, of course. That very kind of questioning is what I'm proposing we need more of. The problem is with the follow through. It's not enough to ask the questions. You have to then seek out evidence that will help support an answer to the question.

JORDAN: I want to clarify one point that you make early on in *Weaponized Lies*, which is that not knowing this stuff does not make us dumb. Can you expand on that?

DANIEL: Well, what I'm trying to say is that these things are very very hard and they mess up a lot of smart people. I worked for a decision making scientist names Amos Tversky, who collaborated with Danny Kahneman. As you may know, Kahneman won the Nobel Prize. Tversky probably would have shared it with him but Tversky passed away and they don't award Nobels posthumously. But, Kahneman and Tversky are responsible for a lot of this literature and what they showed is that even people with PhDs in statistics and medical doctors mess up on these kinds of thought problems and real world

problems all the time because it is so hard. So, not being able to think this way doesn't make you dumb, it's just that our brains weren't configured like this and the silver lining is that if we work at and we recognize our weaknesses, we can train ourselves to be better.

JORDAN: I'm no Daniel Kahneman. I'm never going to get a Nobel Prize for anything, I would imagine, but I do have a decent professional education and I often have a very hard time with things like statistics, statistical thinking, wrapping my head around this stuff, and bear in mind, I was trained to think critically at a law school about topics just like this. It just doesn't mean that I can do it all the time, especially when it comes to numbers and data and doing it in real time while having a conversation. And, it seems like our brains are actually evolved to use specific types of data and maybe not others. I mean, looking at visualizations and things like that, you mention in *Weaponized Lies* that's easier, but even graphs and things like that can be used to manipulate data when people really want to do it.

DANIEL: They sure can. In some cases, as with verbal descriptions of things, the person drawing the graph is trying to put one over on you and in other cases they just don't know better themselves. And I'm grateful to Fox news for supplying so many wonderful examples of misleading graphs. I reproduce some in the book, like a pie chart where the different slices add up to more than 100 percent, which is completely nonsensical, right? You're dividing the pie into pieces or graphs that give you a visual impression that's very different than the numbers in order to make you think that an effect is larger or smaller than it really is.

If you see a graph or a cart or a diagram in the newspaper or on Facebook or what have you, if the bar graph or the line graph has axes that aren't labeled, or if there no numbers next to the tick marks, just ignore it. Because you could draw anything there if there are no numbers there and it could be accurate but you don't really know what the truth is.

JORDAN: That is a little scary, right? Because I could imagine it's -- for example, when I look at SEC filings -- which I do as rarely as I have to -- I look at things like these documents and we have to be really careful. I used to work on Wall Street with financial stuff and if you think disclaimers are huge in insurance and things like that, you haven't seen nothing yet. Looking at an SEC filing, they can't even use visuals in many cases because they're so accidentally misleading.

So if I say something like, "I really think this is a good investment," and I show a random chart with, like you said, no axes labeled and there's just a line going up and it looks kind of like a graph -- can't do it. The idea is, I want you to sort of maybe -- I'm lying by omission, letting you think that this is a graph of this stock or this security or this company's revenue, and it's going up. You can't do it. People have even gotten in hot water for things like company logos that look like graphs that go up. You just can't do it. We don't take care of ourselves in most other areas. The SEC is particularly cautious -- well, in certain cases, and reckless in others, if you ask me. But, these types of things are so accidentally misleading that we have rules against it.

DANIEL: But the rules don't seem to apply to television advertising. Certainly not to Internet advertising. And just to make it a concrete example, say you're trying to sell something to somebody, it could be stock, it could be investors in your company, whatever, you want to show that your profitability has gone up and you want a steep a line as possible, right? Well, suppose that in a million dollars of sales last year and then this year you have a million dollars and one cent.

Well, if you make a graph and you don't label the axes, you can have a very steep looking curve for that one cent if the little tick marks each represent a hundredth of a cent. Oh, my goodness, look how high up it went, right? You just start the graph at a million dollars and you end the graph at a million dollars and one cent and you don't label anything, you could even lose

money and have the graph appear to be going up, if you have the negative numbers going upward and the positive numbers going downward. I've seen that too.

JORDAN: Yeah, that's of course, very scary because again, if we're not thinking actively about this, people are trying to reach our emotional brain using these visuals, and we're evolved to look for patterns. Patternicity is something that Michael Shermer talked about and I think Sam Harris talked about here on the show as well.

We're really bad as humans at seeing patterns in text but it easier to get tricked by graphs and visuals -- unlabeled axes like you mentioned. I like the idea that if you don't see labeled axes, take everything with a grain of salt and or just ignore it, because they are trying to trick you. Going back to the education level of people that quote, unquote fall for this stuff, where and what role does the Dunning-Kruger effect play? Can you take us through, first of all what that is? It's one of my favorite rules -- as long as we're making lists of rules, it's one of my top go-tos.

Some people are so dumb they think they're smart because they're like, "I don't see why we don't just build a wall because, if there's a wall then they can't run over the border." And it's like, the reason we haven't built a wall is because people who have more than three brain cells realize that immigrants aren't just walking across the Rio Grande, they're flying in on airplanes and then they never go home, you know? So it's like that kind of thing.

DANIEL: Yeah I know this because there was a science article about it in the journal Science. The problem with people who are ignorant is two fold. I mean, the first problem is that ignorance can lead to problems but the second part is that they're ignorant, typically, of their own areas of ignorance. So they're so sure that they're right that they end up making either big mistakes or nonsensical pronouncements, which really makes a nice full circle with where we began our conversation. One of my

favorite examples of this is actually it happened to me. I saw the movie The Big Short, as I imagine many of our listeners did, and I was struck by a quote in it on one of the panels, you know, between scenes. “It ain’t what you think you know that gets you into trouble, it’s what you know for sure that ain’t so.”

JORDAN: Right.

DANIEL: Tributed to Mark Twain. I remember also seeing it in Al Gore’s film, An Inconvenient Truth -- the identical quote. And so I thought, well that’s interesting. “It ain’t what you think you know, it’s what you know for sure that just ain’t so.” And so, I put it in my book as an opening epigraph. Then, after I submitted the book to the publisher, I had a month or so to track down all of the quotes and all of the articles and just make sure that everything was shipshape.

And I could not find that quote in any of Mark Twain’s writings at all. And so, I went to the library and I looked in books of quotations, I did Internet searches, I finally called up a librarian -- the English Librarian at Vassar, Gretchen Lieb -- because, you know, librarians are really smart about this stuff and they’ve got special training. You may not know this but at universities librarians hold a rank equivalent to professors. It’s a very serious job with serious training.

And I asked her for her help and using all of the resources that she had, she found no evidence that Twain ever said this, which is so deliciously ironic because what it means is that both Al Gore’s filmmakers and The Big Short film makers, succumbed to the very illusion that they’re warning against. They were so sure that the quote came from Mark Twain, they didn’t bother to check it out. It’s what they knew for sure that just wasn’t so.

In fact, the librarian couldn’t find the quote anywhere, and I think the reason that we all buy it is that it kind of sounds like something Mark Twain might say. It’s got the word ain’t in it, you know, ain’t so has the kind of ring to the way he would write, but if you look at the literature of that period, there was

something close to the idea floated by Bret Harte and H.L. Mencken, two other American Humorists. Also sounds like something Will Rogers might have said, but none of them actually said it. The first documented appearance of it is in the Al Gore film.

(COMMERCIAL BREAK)

JORDAN: An exercise that I like to do when I look at things like correlation versus causation or when I see examples of something that is a so called rule, I try to think of ridiculous examples of that and see if it holds up. And one you gave in *Weaponized Lies* is really good -- Nicolas Cage movies versus drownings, can you take us through that scenario?

DANIEL: Yeah, so we're talking about things that correlate but that doesn't necessarily mean one caused the other. Just to take an example, I made myself a cup of green tea about an hour ago and then not long after, the phone rang and there you were. I don't think that my making the cup of green tea caused you to call and I don't think that one could make an argument that it did but, if in fact every time you and I talk I had a cup of green tea before, I still don't want to conclude that one caused the other. And a guy named Tyler Vigen -- a Harvard Law School student -- has a bunch of ridiculous examples to sort of put a finer point on it.

And the idea is that the world is so complicated and there's so many things going on that if you look hard enough, you'll find things that covary. By that I mean this one increases and another thing increases with it and they both decrease according to the same pattern. And what he found is that year by year, the number of Nicolas Cage movies made correlates with the number of people who drown in swimming pools.

My favorite example is that the number of people who die from getting entangled in their bed sheets is correlated with the per capita consumption of cheese. So, I suppose you could spin a story that people who want to die by strangulation in their bed

sheets decide to have one last rich meal of cheese and so they go out and buy a whole lot of it. Or maybe people eat a whole bunch of cheese and they get into a dairy induced stupor and end up strangling themselves. But more like these two things are unrelated.

JORDAN: To be fair, on the other side of the coin, I can see that there's plenty of people that might hear about another Nicolas Cage movie and just decide to end it. I can see that correlation.

DANIEL: Yes, or you know, Nick sees all these people drowning in pools and thinks, "I'm going to just back off making movies for a while."

JORDAN: Yeah, exactly. Yeah. Nicolas, do us a favor, man. People are drowning themselves all over America. Give it a rest. The reason I brought that back up despite having already covered causation and correlation is because I like to give practicals here for the show and frankly I think that looking at ridiculous examples of so called rules to see if they still hold up works quite well.

Another thing that I use all the time, wherever possible, especially when debating, is to argue against your own point. And this comes from a book called *The Five Elements of Effective Thinking*. I'm not sure if you've seen it but arguing against your own point, in your own head or with someone else, or during a discussion, is a great way to find the holes in your argument and to see whether or not you're right, and to see whether or not there is another perspective that could be equally valid.

Because generally when we're arguing something, we've already made up our mind. But when we argue against our point, often enough we can find possibly that we're wrong or at least find another angle on these things. And it looks like this holds true with your work as well, as in *Weaponized Lies*, you did mention that even sometimes statistics as presented can't be interpreted at all. They're just there.

DANIEL: Yeah I think what you're talking about is very important and of course, some members of society get this training in looking at the other side -- lawyers, notably, scientists -- but we don't all get the training and we would all benefit from it. It doesn't do you any good to try to talk yourself into something if you're only looking at half of the story or half of the evidence. That is if you want to make evidence based decisions. And if I could put in a plug for evidence based decisions, they are correlated with -- we don't know that they cause it, but they're correlated with a host of better life outcomes.

People who make evidence based decision making tend to make better decisions about their financial future, about their medical care, and so they tend to live longer and live happier lives. The difficulty here is that we tend to make decisions from an emotional place and I'm the last person to deny the importance of emotions. I think they're very important but we have to keep them at bay long enough to evaluate the evidence rationally and objectively and see where it goes. So yes, argue with yourself. What evidence would you need to contradict yourself and is that evidence as solid? Is it as credible? Is it as powerful?

JORDAN: Because it's not just people who say, have low IQ and the Dunning-Kruger sort of effect here, that are more easily manipulated, it's also people who can't control their emotions. And one of the reasons to control your emotions is not just to avoid embarrassing yourself but to avoid convincing yourself that something is right or wrong because of the way that you feel about it before, anyway, that you've actually been able to evaluate the facts -- before you've had a chance to ask yourself, "Can we really know that? How can we know that? Is the person telling me this somebody who might know that or are they a pseudo expert? Or are they an expert in something that is not this particular area?" And these are all questions we need to ask yourselves and that becomes very difficult if we're too busy being angry or worked up about whatever we're discussing at the time.

DANIEL: Yeah, one of the funniest illustrations of the Dunning-Kruger effect is the Jonah Ryan character in VEEP is over confident and doesn't know all kinds of things that he should know. So, he doesn't know what regulations are. He just has these gut ideas about things. Like you were saying, build a wall doesn't solve the immigration problem because people are crossing over in other ways. The solution here, again, comes back to humility. Just because you think you can figure something out in your head, doesn't mean you're thinking of all the angles and so a lot of what lawyers and business people and scientists do, is sit around a table and brainstorm and try to generate alternative scenarios. "What might I be missing? Who could I call that's an expert who could tell me what I might be missing?" because just generating stuff out of your own head can lead to a very biased, one-sided view.

JORDAN: So how do people use these types of concepts and these types of informational techniques for positive intent and negative intent? Because both are manipulative, right? But usually we focus on negative intent. It seems like there have to be examples of this being used for good. Can you think of any?

DANIEL: Yeah. The government and businesses may deceive us for our own good in some cases. One example that comes to mind is that if you've got a fire in a building with restricted exits and a lot of people in the building, you may tell people to leave but not tell them how bad the fire is because you don't want to cause a panic. You might be misleading them, right -- about the danger because it's in everybody's best interest for them to leave in an orderly fashion.

I think for national security reasons, our government and military don't always reveal to us everything that's going on. The police don't always tell you when they're about to close in on a subject. They don't announce on the radio, "Well we're a block away from the house where we think the suspect is," because that would give the suspect notice to leave. And even if you were to interview a policeman approaching the house and

say, “Where are you going? What are you going to do?” the policeman might lie because public safety is improved by being able to catch this person. But I’m sure there are other examples where we’re being lied to and someone thinks it’s for our own good, but it really isn’t. It’s just their conception of what our own good is.

JORDAN: Sure, so are you of the opinion that manipulation, no matter what, is bad, even if it’s for your own health?

DANIEL: Well, no. I’m not. I don’t know how to sort this out other than that it’s something that we should be aware of and talk about. In medical schools they teach classes in medical ethics and this creates a poignant example. If you know that a person has only a 10 percent chance to live but that the particular disease they have is affected by mood and emotion and brain chemistry, as many diseases are, is it ethical to tell them, “You’re probably going to die,” which could actually cause them to die because you put them into a depression? Or is it better to try and give them hope and kind of fudge the statistics because they really have a much better chance of pulling through if they’ve got that hope? These are ethical issues and there are no easy answers.

You know, what if somebody says to their doctor, “Whatever happens, don’t tell me if I’m going to die. I don’t want to know. No matter what I say to you, don’t tell me. And here’s a signed affidavit.” And then a week later they’re on their deathbed and they say to the doctor, “Forget what I said in that letter. I really do want to know.” You could imagine cases where it’s not so clear cut.

JORDAN: Sure.

DANIEL: This is a very real case playing out in Hospice Care and old people’s homes and hospitals. This comes up a lot of the time.

JORDAN: Oh, I didn’t realize that. I guess it does make sense. It’s just something I never think about.

DANIEL: Certainly the water supply might be contaminated in a way that doesn't really have any practical health benefits and if you look at the water codes for many major American cities, they are not required to disclose certain violations of they don't have practical implications. So you might figure, "Well no news is good news. If I don't hear otherwise, my water is fine," but in fact, you know, they're allowed a certain number of contaminants and certain background levels of bad things and they're not required to reveal them to you. Maybe because it would set off panic.

JORDAN: That's pretty scary. That's really, actually not good at all, especially coming from Michigan where we had the Flint issue that was actually quite disgusting and covered up and was harmful.

DANIEL: Yeah, and speaking of disgusting, take a look at what the FDA regulations are for how many insect parts and how much rats' feces is allowed in strawberry jam.

JORDAN: I'm really disturbed by the fact that they actually have regulations for that specifically, because that alone illustrates the problem enough for me. Ugh, wow. I mean, insect parts, whatever. That doesn't get to me. But the rest of it, yeah I could take it or leave it. So many people out there in the media and corporations are indeed trying to trick us in one way or another and I'm a firm believer that the way to counteract this isn't to simply trick people in the other direction, instead I'm thankful for the opportunity here today to begin the process of starting to teach people how to read data so that they can educate themselves properly, make their own conclusions based on accurate facts and data, and accurate interpretations of raw data. It really is the enemy of propaganda and deception in many ways. Would you agree with that?

DANIEL: Absolutely. I think each of us has to take responsibility for doing a little bit of thinking on our own. It's just because the people who are trying to deceive us have become so facile in what they do that the news media and the traditional

gatekeepers of information can't keep up with all the lies and distortions. So, it takes a little bit of work on our part but it's worth it.

JORDAN: Thank you so much. There's a lot of good practicals in here. The book of course, *Weaponized Lies*, has many, many, many more. Look at the data, look at what people are giving you. More importantly, look at what they're not giving you and ask yourself questions about what you're being presented. Those little tiny tips alone will start to open up a whole hidden world that is frankly a little uncomfortable, but very, very useful. And for those of you who are getting used to this type of critical thinking, I think you'll start to view things completely differently. Thank you so much, Daniel.

DANIEL: Thank you, Jordan.

JORDAN: Jason, what do you think? I know you're a statistics nerd, kind of, when it comes to this sort of critical thinking stuff.

JASON: I'm definitely a statistics nerd. But the one testicle thing I hadn't heard before. That is pretty good, I have to give him that.

JORDAN: Yeah.

JASON: This was a fun show. I know it's a nerd thing but I nerded out on this. Not our normal fare but I liked the palate cleanser.

JORDAN: Yeah, I hear you. Great big thank you to Daniel Levitin. The book title is *Weaponized Lies*. Of course that'll be linked up in the show notes for this episode and if you like this one, don't forget to thank Daniel on Twitter. We'll have that linked in the show notes as well. And of course I'm on Twitter here. I'd love for you to tweet at me your number one takeaway from Daniel. I'm @theartofcharm on Twitter. As usual, we'll be replying to your questions and feedback for Daniel Levitin on Fan Mail Friday. And if you're looking for the show notes, tap your phone screen, they should pop up in your podcast player. That's where all those links are.

Speaking of links, join us in the AoC challenge if you want to improve your critical thinking, your emotional reasoning -- theartofcharm.com/challenge or at a red light, text AOC, that's A-O-C to 38470 -- 38470 is that number. The challenge is about improving your networking and connection skills. It's about inspiring those around you to develop a personal and professional relationship with you. It is free, a lot of people don't know that. That's the idea. It's a fun way to get the ball rolling, get some forward momentum, it's for both guys and gals -- we really love to see the people when they're moving forward.

We're going to email you our fundamentals Toolbox that I mentioned earlier on the show. That includes some great practical stuff, ready to apply, right out of the old box, on reading body language, having charismatic nonverbal communication, the science of attraction, negotiation techniques, networking and influence strategies, persuasion tactics, and everything else we teach here at The Art of Charm. It'll make you a better networker, a better connector, and a better thinker. Four out of five dentists agree that it will make you a better networker and a better thinker. That's theartofcharm.com/challenge or text AoC to 38470. For full show notes for this and all previous episodes, head on over to theartofcharm.com/podcast.

This episode of AoC was produced by Jason DeFillippo. Jason Sanderson is our audio engineer and editor, show notes on the website are by Robert Fogarty, theme music by Little People, transcription by TranscriptionOutsourcing.net, I'm your host Jordan Harbinger -- go ahead, tell your friends because the greatest compliment you can give us is a referral to someone else, either in person or shared on the Web. Word of mouth is everything. So share the show with your friends and your enemies, and if you let children listen to it, 99 times out of a 100, they get taller over the years that follow. True story. So, stay charming, and leave everything and everyone better than you found them.