Annie Duke – How to Decide (Ep.22)

Jim: Well, hello everyone. It's Jim O'Shaughnessy with my colleague, Jamie Catherwood. And one of my favorite people, Annie Duke, who I was just telling has a movie star name, which is fantastic. And you are a triple threat, right Annie? The trifecta, academic background in cognitive sciences, that's pretty cool. World-class poker player. I mean, come on and now consultant to people on all of the ways we make mistakes through all of our biases. Welcome.

Annie: Well, thanks for having me. I'm so excited to be talking to you virtually. I'm sad we're not in person.

Jim: As am I. It's amazing how we can just move around a little bit and get everything still going, but this not in person is not so much fun.

Annie: Yeah.

Jim: Okay. We want to talk about your new book, How to Decide, which I have a collector's copy of because I've got the one that had a couple of booboos in it.

Annie: It's pretty big booboos but, yeah.

Jim: Yeah, it's all right. I've read Thinking in Bets, which I think was a fantastic book. Let's dive in. So basically I was telling you, before we started to record, I've been telling people, talking about cognitive biases for 30 years, and yet you seem to have found a method, especially with this book to really get people tie their hands a bit. And really make them understand what they're thinking they might need to be mad at and think about their thinking. So what made you to decide how to decide, how to write the book?

Annie: It's a good question. So with Thinking in Bets, I was really thinking about this problem of uncertainty. And that when we're making decisions, they're really subjective judgements. Because you don't have all the information you need in order to make a perfect judgment and then even, so you don't have control over the outcome. And so this just kind of causes a lot of ruckus. And I was just trying to really get people to understand that there's a real looseness to that relationship between the quality of the outcome that you get and the quality of the decision that you get. And then we need to really recognize this as we're trying to become better learners and better decision makers. But in doing so, I had a little bit of how sprinkled in there at the end with lots and lots of why. That was kind of number one.

Annie: And then number two, because I was specifically exploring this dis-correlation, basically between sort of outcome quality and decision quality. I was really diving into this luck problem, right. That you can make a great decision and get a bad outcome or a good one. You can make a terrible decision, get a bad outcome or a good one. And what did that really mean for your decision-making? So I put that on to the world. People liked it. I was very lucky to have people like it. And what I discovered from talking to people was

that they wanted the how of it. I had a couple of hints sort of toward the end of Thinking in Bets about how you might make great decisions, how you would deal with the uncertainty of the environment. But it wasn't something that I really dove head long into, which is of course more what I do in my consulting.

Annie: And I just found people saying like, "I get it." There's uncertainty, I understand but how? And so I said, well, I guess maybe I should write a "how" book. And then what I think was really interesting in writing the "how" book was that it ended up becoming much more of an exploration about the imperfect information problem and much less about the luck problem, simply because you can't do anything about luck. So there isn't a lot of how to that, except to know that it exists and to try to sort of forecast it properly. The real, how comes from this hidden information problem and that's really sort of what ended up happening with this book. I wanted to write something about how, and then that made me go into this other problem about uncertainty, which is you don't know very much.

Jim: Right. I always say that we are deterministic thinkers living in a probabilistic world and sometimes hilarity ensues. You have a great phrase that I like, and I want you to talk a little bit about it. You call it resulting, right?

Annie: Yeah.

Jim: And that's this notion of people not understanding the cause and effect. They don't understand... if they get a bad outcome, they think they made a bad decision. And often that's not true at all. Right? And the only way that you can understand that is to understand that it's, you're not playing one game, you're playing thousands and thousands of games. How do you, when you're doing your consulting, how do you get that across? Because I got to think you're dealing with some pretty accomplished people.

Annie: So first of all, I love that we're deterministic thinkers living in a probabilistic world. I would also say that we process things sequentially when we're living in an aggregate world. So can I add that into it?

Jim: I love it. I am going to steal that one from you.

Annie: You can. So I think this kind of creates all of the problems. So let me just sort of outline the problem really quickly and then maybe we can get into what are you supposed to do about it? So basically what happens is that in general the quality of a decision is kind of an unknown. Most decisions aren't like going through a traffic intersection where we've all agreed to what the rules of the road are and we have a very good consensus about what a good decision or a bad decision would be. Like going through a green light is a good decision, going through a red light is it bad one, no matter whether you get in an accident or not. So when it's kind of a settled matter, we're pretty good with the idea that you shouldn't be working backwards. But that's very few decisions have those kinds of qualities.

Annie: Mostly it's like, "Should we hire this person? What should our sales strategy be? Should we develop this new product? Where..." We don't really, it's not objective in terms of, is this a good decision or a bad decision? It's pretty opaque. So now when we try to do a look back, what is not opaque, what's totally transparent to us is, did we win or lose. We know that. "Did it work out? Do we have to fire the person? Did they quit or are they a superstar?" And what we ended up doing is kind of what Kahneman calls a substitution. When we have these subjective judgments, very often we're when we're thinking about trying to judge one thing like decision quality, will substitute something else that we have a better understanding of in order to get us to the answer as if that would be the same thing.

Annie: And we kind of do this here. We say, I know that I won and so I will substitute that for this judgment that I'm making about whether the decision was good or bad. So, that's how we get this resulting problem. On top of that, as you talk about this kind of determinism problem, we also get hindsight bias and they're related, which is, if something happens a particular way, we feel like we should've seen it coming. It had to be that way, that was the only outcome that could have occurred. And then even worse yet, it gets really bad when we get this memory creep, which is, "And I knew it." So, and I think they're both really related to each other because I think in both cases, what's kind of happening is that, at the time that you make a decision, there's many ways that this decision could unfold.

Annie: There are a lot of different outcomes that you could, that you could observe, but once you get the outcome, we have this like cognitive chainsaw that like cuts off all the other possible branches of the tree. And we're only left with the thing that happened. So that's how you could see that resulting happens because if that's the only branch that's available to you, clearly the decision would have to be correlated at one with the outcome. And then you can also see how you get hindsight bias with that. Well, that's the only thing that could have happened and so therefore you should have seen it coming because it was the only possible future that could have occurred. So, that's really kind of where that error is coming from.

Jim: I talk about that a lot. I think that evolution has, has done some things that were meant to be kind, but ended up not being so kind. And I think one of them is memory because I'm a big journal keeper and I advocate it for everybody because you can go back and see in your own handwriting, calling you a liar. And by that I mean, one of the things that I think happens that most people are completely unaware of is that our brain changes our memory and make it consistent with what we believe now. And that's where you get the whole, "Oh of course I saw that." I mean, we could go on any social media. "Well, any idiot could have seen this coming." Of course-

Annie: Well, how come you're not a bazillionaire?

Jim: Exactly.

Annie: If that's true.

Jim: But it's so funny because it's just something I observed in even really smart people. Actually, I was talking to a guy earlier today and I was saying, one of the things that I tell really smart people is that they're probably more likely to fall for behavioral biases because they think they're smart and won't fall for it. Right?

Annie: Well, not only that they can spin better narratives to support their point of view. They tend to rely more on their intuition because they think that their intuition is going to be better than the average bearer. So they're much less likely to check against their gut and that is where all the cognitive bias is. So, key evidence has shown that Daniel Kahneman has shown that, there's all sorts of evidence that says smart people are really in trouble.

Jim: And, so let's talk a little bit more about the hindsight being not 2020. And I completely agree with you. One of the solutions I came up with was the idea of keeping written journals that you can go back and take apart the memory as you're having it in your mind right now with what you actually thought. And if you do that enough, at least in my case, it kind of becomes part of your mental models. What are the suggestions that you make to the people you're consulting with on this problem of hindsight bias, not being 2020?

Annie: I want to key in on an evidentiary record, because I think that's really important. So, let's assume we don't have an evidentiary record. We can't go back and look, then you want to basically create something, which I would call a knowledge tracker. Which is to say, you've got the decision, you've got the outcome, and you want to really think about what is the stuff that I knew beforehand, or was knowable beforehand. And what's the stuff that I knew afterwards. And there're certain things that you can't possibly know beforehand. So one of the things you can't know is how it's going to turn out. So as much as people would like to say, "I knew Trump was going to win in 2016." That's not true. It's as you said, it's probabilistic, right?

Annie: Like you may, you, the pundits had it depending somewhere between 70 and 30 and 90/10, maybe you thought it was 50/50, I don't know. But whatever it was, you didn't know for sure that he was going to win, but that we sort of substitute these things in. So you want to just say, what are the things that informed my decision? And you're obviously you're trying to build this in retrospect, but by going through this process, you're more likely to get a little closer to objective. What are the things that informed my decision beforehand? What are the things that I knew? What was the decision I made? What was the outcome? And then what are the things that revealed themselves after the fact? So that's about the best you can do in retrospect, in terms of the knowledge piece. And then the other thing that you can do, which could help you and it actually helps you a little with the knowledge pieces to say, really write down what are the other ways that could have turned out and then try to forecast what the probability of those things would have been.

Annie: So like what's the likelihood that those other things would have turned out. So, in other words, when you're thinking that part of the problem is that there're different ways that you're flipping a coin, it could be heads or tails. And when it lands, tails heads disappears from your cognitive landscape. We want to get heads back into your cognitive landscape and we want to get it happen. And then you also want to

reconstruct, what did I know beforehand? Well, I know that if it's a fair coin, it could be heads 50% of the time tales, 50% of the time, just because it landed tails doesn't mean that I could possibly have known that beforehand.

Annie: So you want to do that. And then in terms of, what are the lessons that you learned from that? And this is where we really get into trouble. And that's where I said, where we process things sequentially when we live in an aggregate world, is that we take the wrong lessons from experience. Which is, we think, "Oh, it's a good outcome, it must've been a good decision. It was a bad outcome, it must've been a bad decision." And so how are we sort of dealing with what I call the paradox of experience. That experience is necessary to learn, but it's certainly not sufficient. In fact, it can interfere because we do this sequentially. It's to then look at that what you've sort of created, this is what I knew beforehand, as best as I can do. And this is what I knew afterwards. And then all you'd have to do is ask yourself, could I have known any of that stuff beforehand at a reasonable cost?

Jim: Right. And in this book, you call it the decision multi-verse.

Annie: Yeah, right. Because-

Jim: I thought that was really cool.

Annie: Because whenever we can think about when we make a decision, there's so many different ways that it could turn out and then those branch off into other ways, and we could have imagined it just as easily. Like, there's a universe where it lands tails and there's a universe where it lands heads, except for most things it's a lot more than that. So that's kind of the retrospective problem, but obviously doing anything in retrospect is actually quite difficult as you point out. So the question is what is the value of an evidentiary record? How does this really help to improve our decision-making kind of discipline these biases? So I think, I think one of the best ways to understand this, it's actually think about what happened with Clinton versus Trump in 2016, in relation to Pennsylvania, Wisconsin, and Michigan.

Annie: So we know what happened. She lost all three of those States. We know that. And I think anybody who's paid attention to the news knows that there, I think it's about universal, it's pretty close to universal agreement that she screwed up. That her campaign strategy was awful. Why wasn't she campaigning in those three States? She should've been campaigning, she was in Arizona and North Carolina and Virginia and Florida and New Hampshire and she neglected the Rust Belt and what a freaking idiot, that was the biggest bungle in the history of campaigns. I think everybody pretty much agrees to that. So here's my question for you Jim, would you say that presidential campaigns in real time are quite crowdsourced in terms of picking apart and doing analysis of campaign strategy?

Jim: Oh, absolutely.

Annie: How many words do you think are written?

Jim: Endless. I mean, we can't count them. Right?

Annie: Exactly, uncountable, it's too many. It would take us... So we have not just political strategists and analysts, but we also have data scientists. Everybody in Silicon Valley wants to write their model of the election. And then you have like The Upshot and FiveThirtyEight and all of this stuff. Okay, so the analytics are writing something every other, everybody wants to talk about what is Biden's strategy? What's Trump's strategy? So on and so forth. So can we agree that if this was such a humongous mistake, that she was not campaigning in these three States that somebody would have maybe written something about it?

Jim: Yes, we can.

Annie: Possibly, we can agree to that. And by the way, it would have been a really good thing to write about it. It probably would have gone viral because it is pretty contrarian. So we have to remember, she's polling ahead by a lot in those States and it's like Florida and New Hampshire are a toss up. So at the time, it probably was reasonable for her to be campaigning where there's a toss up more so. So anyway, I just decided, okay, I'm going to do a Google search. Because I was like, "I don't remember a lot of stuff written."

Annie: So there are indeed many, many articles talking about how bad her campaign strategy was. The first one I could find was November 9th, 2016. That's kind of an important day. And then by the way, so that's kind of the resulting report, but there's this hindsight bias problem, which is people think they kind of knew it beforehand so much though, that I actually pitched writing about this to an editor at one of the big three newspapers. And they said to me, "Oh no, I can't publish this because everybody knew this." He said, "All my friends were talking about it and people were writing about it. And we were all talking about it..." Look you're in a newspaper, you didn't put it in the pages of your newspaper? That's a weird, but this is like this memory Creep. So we can see this all kind of like mushing together.

Annie: So now we can get to your point, why do I know this? Why could I spot the problem? Because there was a big record. I can Google it. So we want to Google our decision making. We want to create a way to Google our decision-making. So here's where I'm kind of going to split off and be very, very slightly it's like ever so small split. I don't think that journaling is the best way to do it for this reason. I think it feels to people like an extra step I have to go and I have to remember, I have to write it down. And I have to think about what I was thinking and so on and so forth.

Annie: I think a great decision process naturally creates the evidentiary record. It will be in front of you as part of the decision process, because really when we're thinking about disciplining bias and actually, how do we make great decisions? First of all, sometimes you have to try to do it in reverse in retrospect, but it's way better if you do it prospectively. So let's just start with that. Like from today on let's try to start to think about these in a way where you don't have to go back and try to reconstruct your state of knowledge, but you're actually getting some sort of record of what do you know, what do you think? What are your forecasts on so forth, but as part of the process, this stuff ends up getting written down because it has to. In order...

Annie: And that's part of what disciplines the bias. Because it's hard when you're writing it down and doing these things where you're breaking a decision into its component parts and actually trying to make forecasts that, you're going to look back at. It just removes a bias. It doesn't remove all of it, but it removes some of it. It gets you a little more objective and then you actually can Google your decision-making. So the quibble really for me is just with the word journal because I think that any friction that you recreate for somebody's decision-making is friction that most people are going to be like, "Ah, I don't have time, Tiger King is on. I can't journal this tonight. I got to see if Carole Baskin killed her husband."

Jamie: I have a question about while we're on the topic of memory creep. Because I feel like the concept of time and what and time has felt like in a year like this year is just so baffling because things that seem like they happen yesterday were actually like four months ago and vice versa. And I feel like my memory already of.

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Jamie: ... vice versa. And I feel like my memory already of what it felt like in February and March is so distorted, because I know how it ends up. But I mean, in February and March, when it was really uncertain, the average person ... what this was and you're seeing those videos coming out of China and everything. How kind of profound do you think an impact, for in terms of memory creep and by season, making poor decisions, do you think COVID will end up having in the long run?

Annie: That's a very interesting question. So we know that depending on your circumstances, time moves at different paces, so we know that. I think that hindsight bias is going to be amplified right now, for the reason that the information landscape is shifting much more rapidly than it normally does. So I think it's harder for you to sort of timestamp when you knew something, because all of a sudden, three days later, a different thing. And I think all of that is going to get kind of melded together to the point where people will be like, oh, I knew that so-and-so forth. So I think that that's going to make it harder. The interesting thing is ... So I think that this retrospective problem is actually going to be amplified right now, partly because of the speed at which information is coming, which is really a lot of the problem is trying to reconstruct those memories of that. And also time is kind of compressed in weird ways, but stretched out in other ways-

Jamie: You're doing the same thing every day. You're just at your house, so it's hard to ...

Annie: But interesting enough, as you're making important decisions, are you going to furlough, or layoff, or reduce salaries, or not reduce your force at all, those kinds of things that people were having to make in the Spring, the more uncertainty there is, the more important it is to create these evidentiary records, which are naturally going to come out of a really good decision process. So just because you're making some bigger decisions, you should be able to still have a record of what you knew at the time, even though you're making lots of little decisions where you wouldn't be doing that. There should be some big ones where you're actually writing down what you think about what's going to occur. I think that what it comes down to is that we haven't been decision-less in the last six months.

Annie: In fact, in some sense, we could say that we've had many more decisions that feel very impactful to us. And anytime that you're making any kind of impactful decision, we're trying to sort of deal with the fact that the judgments that we're making are subjective. And we're trying to get closer to what the objectively true judgment ... the objectively best judgment would be. We're trying to reconstruct what an accurate model of the world is or what ground truth is. And that becomes, in a lot of ways, more imperative in an environment like this. So naturally you should have a better record right now, actually, but if you're trying to do it in retrospect, to your point, it's going to be bad. It's going to be really inaccurate

Jim: It's a couple of interesting things to one of your points. I mean, it seems like, are you already cutting a deal with a software maker to come up with this package?

Annie: I think that there are definitely, for sure, some macros that can be created, for sure. I think there could be a package that's created. I've thought about what the digital expression of what I really do in my consulting would be. It's something that's on my mind, certainly not something I can develop myself. Some of it does get implemented with my clients just naturally, because there's just things that are pinging them, where they have to be doing some stuff, but I think that you could probably package it. I just haven't gotten to, oh, how would I do that? How would I implement it? But I was like, I'm going to write the book, and then I'm going to think about it. So if someone has a good idea, get in touch with me on it.

Jim: So I'll only require the smallest of finder feeds-

Annie: Fair, fair.

Jim: ... so you don't have to worry about it, Annie. Well, I also think that there's a natural human reticence. I am very comfortable with machine learning, for example, because I think of all of the tools we use as simply extensions of humanity, right? And there's ... And I'm not going to call them Luddites, right, but there is a certain segment of society, and it's not small, that just abhor any decision that was either entirely made algorithmically or that was assisted by algorithm, right? And yet, all of the evidence ... So for example, I remember a New York Times article, probably 20 years ago, and it was about quantitative medicine, right? And hospitals were finally getting these massive databases where the doctors could feed in the symptoms, for example, and the database would come up with a disease that they hadn't thought about at all, and it was right. Right?

Jim: So I look at it as a positive, good, right, that if we have these tools at our disposal, we should use them. And I'm just thinking about this book. There's a lot of exercises in this book, right? And I love technology as you know, and I always try to think, hm, how could we automate this? This looks really interesting to me. I wonder though, and I want your thought, do you think that there is a big enough group of people who would be willing to accept ... I was talking to a really, really smart machine learning guy, and he was telling me that the problem with machine learning is it's going to be able to tell you what, and when, but not why. In other words, machines learning-

Annie: That's true. It doesn't understand.

Jim: Yes. Machine learning doesn't build a narrative, and human beings are so narrative-based. That's why so many are going to, what I look at, miss a huge opportunity to do much better decision-making, right? And that's every aspect of life, right? That's investing. It's playing cards. It's deciding whether to hire some ... I mean, everything we do is a bet in one way or another, right? When I went to sleep last night, I bet I was going to wake up this morning, right? I didn't think about that, but it's a bet. And so is the sun coming up, but you don't think about those bets, right? You think about the ones that you build up in your own mind.

Annie: Yeah. Here's what I think. I'm trying to decide between the chicken and the fish at a restaurant. If I order the chicken, it's a bet. I'm betting that that's going to be the better dish, and I like it better than the chicken. I mean and obviously you can get into much more consequential decisions like who you are going to hire, where you're making a bet on candidate A versus candidate B. So yeah, I think there's kind of two things to unpack there. I think one is it's kind of philosophical, which is why is it that humans reject even the simplest algorithms, right? Because not everything's machine learning, right? Not everything's is big, AI, or whatever-

Jim: No, it's decision trees.

Annie: Yeah or a hiring rubric or if the candidate scores a 15 or above you hire them, right? I mean that's very simple. I mean you're just adding some columns together and saying, here's our answer, right? So they can be very simple, but I would take it even a step further and say, even when you say to somebody, well, let's break this down. What do you mean by that, right? People tend to be pretty loathe to do that. So if someone says, I want to invest in this particular company that Michael Mauboussin talks about that makes widgets, and what you're saying is that the market's opinion ... And they'll decide if I want to do this. And you'll say why? And they'll say, well, I think it's going to go up. And okay, well, why? You have to break that down. And then, you get them to say ... And I'll get it. This is Michael's example, that we actually just talked about a second ago, so that's why it's in my head.

Annie: You get them to say, well, because I think the market is underestimating by 7%, the number of widgets that people are going to buy. Okay. Well then, what has to be true of the world for that to be so, right? And then you start to sort of break it down, right, so that you can get the decision down into its component parts. So each of those things is now going to discipline bias, because a lot of biases coming from this narrative spinning, and if you can kind of ground it in these component parts, it just reduces the amount of wiggle room that you have, in a way, that kind of gets you to a better decision. And I would say it's not even AI, but you are quantifying some stuff. You're breaking it down to piece.

Annie: I think people are loathe ... So I think first of all, the issue is there's this philosophical issue, which is why? Why is it that people love to say, I've got a great gut. I can spot it. I can smell a great investment. I've got a good nose for value. What's that mean? When you're meeting with founders, I can tell a great founder. I could just see it. I can sense it

in the room. I've thought about this. And I think that it's very interesting to me, sort of to your point, that you can't go a second level deep on what makes you feel good about yourself. And I think that the difference is that I think people perceive their gut or their sort of instinct or their intuition to be something that is their own, that's not repeatable by another human being kind of by definition. So it's got a magical quality that only you have, that makes you extra special, sort of like Mr. Rogers is, you're special, because it's your intuition or your gut.

Annie: And I find it interesting that there's a small number of people who do this, and they tend to be very successful, who can step back and say, my special power, my super power, is that I recognize my gut is crap a lot of the time. Sometimes it's okay, but I shouldn't trust that it's okay. And if I'm smarter than other people in recognizing that there's some help that I could get, if it's just, look, the calculator is going to make me add better, right, or as some machine learning, or if I create this rubric or whatever, that I'm going to have an edge, that's going to be what is going to cause me to feel really good about myself and feel like I'm special in this world. But then does that mean that that's me and mine?

Annie: Right? I mean, I think that that's where people sort of have that trouble. Now, I personally am someone who takes great pride in saying, I don't bet my opinion on stuff that I don't feel like I don't have a good opinion about. And I feel like I have a good opinion about exactly one thing, which is poker. So when people say to me, what's your investment strategy? I'm like, indexing. Well, why? Because I don't think I'm smarter than the people who spend every waking moment thinking about the market. But that doesn't mean that I think ... I actually think that's a good quality, not a bad quality, but I think that's a little bit of a different way of approaching the world. So I think there's this philosophical issue, right, which is your gut is special to you.

Annie: Your intuition is special to you. And so as we think about what makes us have that positive self narrative, that we're all looking for, that the gut is the faster way there, but that actually brings us to the problem, which is you can't really examine it. It's not repeatable. I can't say, Jim, let me show you this, a screwdriver. I would show you a screwdriver and tell you, okay, here's what you do with a screwdriver. I'm going to show you what you do. You take it. And if you see a screw, you take the little flat edge, assuming it's that kind of screwdriver, and you put it ... You see that little slot, and then you're going to twist it clockwise, and then the screw will go in the wall and probably not a good idea to take the back end of it and try to hammer it in.

Annie: And it's not going to be good for breaking asphalt, but it could maybe be a weapon. I could show how to use it, a weapon, but it's a tool, right? And I can actually show you how to do it. And then presumably, you could then take it and do the same thing and repeat it. And then both of us, when we're using it, outside observers could examine whether we're using this thing well. Now that's what we'd ideally like with our decisions, because we want to get the same result, right? We want to get that screw into the wall really well. And we want to be able to repeat it, over time, because we live in an aggregate world, right? So we want to be able to repeat it over time, but that's literally why people like their gut, because I can't watch you.

Annie: I can't examine it in an objective way and say, yeah, that was really good process. And you're doing the same process. You're using the same process the same way. And I can see that you're getting the same result each time. So this thing that we have, of I need my identity to be special to me actually really, really hurts our decision-making, because it stops this, accountability, and repeatability, and an examine-ability, that you actually need to make great decisions. And gosh, you certainly don't end up with an evidentiary record. What's the evidentiary record? My gut told me I should do this.

Annie: What does that mean?

Jim: Exactly, and there in lay so many of our problems, I think. I've been thinking about this forever, and it's one of the reasons why when we first met, we had the best conversation in the world, because you think about it endlessly as well. And then, there are the things that you don't think about. So consider the little tale of the little boy or girl, who grows up on a farm, and every morning they hear the rooster crow. And they run to the window and throw the shades open, and they see the sun coming up. And one morning, they don't hear the rooster crow, and they start crying wildly. And their parents rush in. What's wrong? What's wrong? And the little child looks at the parents and say, the sun isn't going to come up.

Jim: Right? Well, so that's a simple question that ... And of course, we learn, right? The parents will say, no, no, those two things go together, but the rooster crowing doesn't cause that. I've been thinking a lot about what about the rooster moments that aren't so obvious, right? What about a lot of things that people who don't take decision-making apart the way you and I do, how many things that they associate the rooster crowing with this other thing. They conflate the two, but they're not obvious, so no one can tell them what's wrong with that. And, it becomes part of their mental model, and they can't understand why they keep getting things wrong, right? So I write and talk a lot about mental models and how to improve them, and what they are is really decisions, right? And the truth, it should be profitable. Let's put it that way. I think Nepal said something that, right? If you're correct-

Annie: Okay, let me just say, where profit can just be happiness. The thing you might want to be giving to the world is bringing joy and happiness to other people, and that's fine. The truth should get you whatever that is.

Jim: Yes, the truth should get you closer to your objective.

Annie: Right? We're not talking about just money here.

Jim: No, not at all, not in the least. Thank you for the qualification. The truth should get you closer to what your desire is.

Annie: Right. Exactly.

Jim: Whatever that desire might ...

Annie: Whatever that might be.

Jim: So how would you tackle the idea? Let's say you're called in as a consultant, and you notice this rooster crowing being acquainted with making the sunrise thinking. But it's not obvious like that, right? You see that a lot of people at the company that called you in have conflated these two things. The correlation is not causation, right? How would you take it apart? How would you demonstrate to those people, that they're thinking the process itself was wrong?

Annie: Well, first of all, scientific method.

Jim: Exactly, exactly. Something I'm deeply in love with.

Annie: Yeah. So in that case, I would say, well, if the rooster causes the sun to come up, let's see what happens if we muzzle the rooster, right? Now, the good news is that there's lots of natural experiments that can occur, where we don't necessarily have to muzzle our own rooster. We can just find out what happens in places where there is no rooster, so on, so forth. But basically what you want to do is that ... People will complete these things together. And then again, it has to do sort of breaking down as component parts. Well, if that's true, how might we just prove it? Right? What are the things that you could find out? What are the states of the world that could occur in the future, that would tell you you were wrong.

Annie: So I have this whole chapter called the power of negative thinking.

Jim: Yeah, I was just going to get to that.

Annie: Yeah. And so that's basically what we're talking about. So this could be true. So you can do this for kind of anything. So I'll just divide it kind of broadly into two categories. For a goal I'm trying to reach, I'd like to lose weight, and you say, in six months I failed. Right? So that would be one thing you can do, but you can do it also for a thesis that you have, right? So the thesis could be roosters cause the sun to Rise. And obviously, in investing, you're investing off of particular theses, right. so you have some ideas of these theses, and hopefully you haven't just spotted correlations that aren't causal. But, for example, we know that in good economies, pet adoptions go up. Let's hope that we don't think that pet adoptions cause good economies, but they're correlated together. We want to figure out, are we in that area?

Annie: So basically what you do, just say, imagine it's a year from now, and I'm just knocking myself in the head. Oh my God, this thesis was totally wrong. So it's a year from now when I figured out, oh, my thesis was totally wrong. What are the things that could be true of the world? What are the things that I could have found out in that time, that would have told me that? So it's actually a really good way to kind of think about how could I find out that I'm wrong and be really, really hungry to find that out, which is all the scientific method is. it's a let me try to figure out why I'm wrong. So I can give you an example of that. So there's a company that I was working with, and they're very successful.

Annie: And they were just trying to sort of figure out some stuff about how good their investment process was and cleaning it up. And I said, "Whoa, we need to step back. We need to figure out if your profit is because the world that you're investing in is frothy." So I just said that. We have to just have the frothy hypothesis. Okay. And then we're going to try to disprove the frothy hypothesis. Now, how do we just prove the frothy hypothesis. We'd find out that you were generating alpha beyond just sort of the frothiness of the market. I knew this was going to be a great client, because they were like, cool. Now the majority of people would be like, screw off lady. Are you saying that we're just riding beta over here? But we know that there are markets, like the stock market, for example, where there's lots of people who think that they're really good at it because they happen to be winning.

Annie: But if you measure it against beta, it turns out that they're losing, right? But you don't know that unless you actually try to disprove the thing that you believe to be true, that my decisions are causing me to win. So how would I figure that out? Well, I have to figure out what the reference class is. So I have to figure out what would I be doing if it were random, that kind of stuff. So that's a good example of how you might apply that thinking. So what would I find out that would mean that this idea that you're generating alpha would be untrue, and how can I actually figure out how to dig into that and figure out if that state of the world actually exists or not? And that sometimes you can't tell right then, because it would be things that would have to appear on the horizon in the future, but that's where you can do that kind of signposting.

Annie: So what would the states of the world be, that would be true in the future, that would tell me that my hypothesis or my thesis was wrong. That's the only way to approach the world is saying, why am I wrong all the time?

Jim: Yeah, absolutely.

Annie: And by the way, it doesn't make you depressed, and I just want to say that. I feel like people think, oh, what a horrible world to live in, that you're saying, oh, I'm just really worried that I'm wrong. It doesn't make you depressed, because first of all, you can have your idea about real excitement when you figure it out, which is really cool. By the way, if it had turned out that it was just frothy, well, then you can come up with a really good investment strategy for frothy, right? That's okay.

Annie: And by the way, I feel pretty smart about myself, that I figured that out. It's like you're trying to think that why are you wrong all the time, because what you really understand very deeply is that if that's not the way you're thinking, then you will not be successful, except by accident. I mean, that's just kind of the truth of the world. So in the book, I contrast this with the power of positive thinking. Imagine a positive destination. I'm still recommending that. It's good for us to have good goals. But then imagine a a clear path along the way and succeeding at every point. And what I say is actually imagine the positive destination and then imagine yourself failing at every single point, because otherwise, you can't actually figure out, could I navigate around it? How am I going to react if it happens? Is there a hedge available, that's going to mitigate the downside, if that's what I happen to observe, this kind of thing. And I liken it to the difference

between a paper map and Waze, where a paperback, you're like, oh look. I want to get to Connecticut, and here's the road I'm going to take. Yay.

Annie: But wait, what is Waze doing? It's like, just so you know, there's a speed trap. Don't go on that road, like great, now I don't get pulled over by the police who'd give me a ticket. That would be really bad or maybe worse. So that's kind of what it is. It's like, you always have to be approaching the world from how would I disprove this?

Jim: Karl Popper, right? I mean, it's the basis of the scientific method, and I write about it a lot. And one of the things that I find really interesting is the resistance that people who will either correspond with me or talk to me on the phone or whatever, for whatever reason, they're just so resistant to the idea that ...

Jim: ... so resistant to the idea to think that way. So, for example, I do threads on Twitter, right? I call Twitter the new university. And so, one I did where I said, "I basically believe that all of my beliefs are wrong, but some are useful." I'm not talking about anybody else. I'm talking about me, okay? Whew! When you start going after beliefs, even if they're your own, people just freak out. What I find really interesting is now we're getting into something that I've always found just really incredible. Two things together, right? So, time preferences and emotions. You mentioned my goal is to lose weight, and in the book I wrote for the general public, which was called How to Retire Rich, I started out by saying, "In the battle between the brownie and the dieter, the brownie always wins." And the brownie always wins because it is a very short time preference, and it's very difficult to elongate that to a much longer time preference.

Annie: That's right.

Jim: And those short pleasure moments are going to win because of our emotional structure, almost every time, unless you understand that and make it not a goal, but a process. It's not, "I'm going to lose 10 pounds in four months," it's "I'm going to start eating this way, I'm going to start exercising." Yet, it seems to me you have another thing that this leads into, the three P's; preferences, payoffs, and probabilities. How did you think about this idea of people getting really worked up about things we're talking about right now. That you and I are very comfortable with. But I've realized, at least, a lot of people aren't. I mean, so how do you get them over that hump?

Annie: Yeah. So, first of all... Okay, let me lay a little groundwork here.

Jim: Good.

Annie: Let's think about a decision process. If we're thinking about the back half of it, that's what I explored Thinking in Bets. You've chosen a particular option. You've chosen the thing you're going to bet on.

Jim: Yep.

Annie: And that option has a set of possibilities that could occur. So this is the three P's, right? There's a set of possibilities. You want to map those out. Each of those possibilities has some payoff associated with it. So that's going to be the preference because you're going to prefer positive payoffs to negative. And then each of those has a probability associated with it. So, that would allow you to just generally do two things. One is calculate out an expected value, a weighted average, and also to understand what the downside risk is. Because we really care about that, obviously.

Jim: Right.

Annie: So something could have a positive, expected value that involves a higher risk of death than you would be willing to tolerate because then you're out of the game, which we would like not to be. But anyways, so when we think about that back half, okay. Which is, how are you thinking about each of your options in terms of the possibilities that might unfold? What are the futures that you might observe? How much did they cause you to gain ground toward your goal or lose ground? And what is the probability of each of those occurring? That right there is where you get the influence of luck. So basically you can think about it in between the decision that you make and the set of outcomes, luck intervenes to tell you which outcome you actually observe of the possibilities.

Annie: Now notice I'm saying this very carefully because you don't have control over luck.

Jim: Right.

Annie: Right.

Jim: It's an externality.

Annie: Exactly. So the point is I can make a good decision that makes it so that a bad outcome will occur less of the time.

Jim: Right.

Annie: That's the control that I have, but I'm not actually controlling luck, which I by definition have no control over. So let's just take that. So let's say that you do all of that perfectly. We want to back up to the what causes you? What are the options that you're considering? What are your goals? How are you thinking about this forecast that you're making? Which, is really just a forecast of the future. That's all informed by your beliefs. So we could think about in between your beliefs and the option that you choose is the intervention of imperfect information.

Annie: So now we've got the two pieces of the puzzle. So we think about Thinking in Bets is about that second half, and this book is very much about that first part, the imperfect information. So this is why people should really care about this problem because I don't care how good you are at drawing a decision tree. I really don't. It makes no difference to me. If your beliefs are bad, if there's a problem with your beliefs. And when we think

about this, we've got this really huge problem as decision makers because the stuff we know is like a speck of dust, it's like Whoville.

Jim: Right.

Annie: But it's tiny, right? And the stuff that we don't know, is like the size of the whole freaking universe. So every decision that we make is informed by a very tiny little bit of information. And we've got two problems with the foundation that this whole house is built on. One is that there are inaccuracies in the things that we believe. This is what you're talking about right, where people are sort of like, "What are you talking about? That's not true". But of course it's true because I can take those people who were yelling at you and say, "Hey, two questions, anything you believed really strongly when you were 15, that you don't believe today."

Jim: Right.

Annie: I don't know someone. I haven't come across someone who doesn't say yes. Okay, that's weird. So at least at some point in your life, you did believe things that weren't true. Okay, that's interesting. I'm not sure why you think today is any different, but okay. And then we can take it in terms of the scope of humanity. Did we believe at one point that the Sun revolved around the Earth? And the answer is, I think we did.

Annie: So whether you take humanity as a whole, as we accumulate knowledge as a species versus like your own accumulation of knowledge, I used to be like Ontogeny and Phylogeny. Right?

Jim: Yep.

Annie: We have the same part, we know the beliefs evolve and then we changed our mind, and we learned, and we correct the inaccuracies in our belief. There was a time when I believed that if you were asymptomatic, you could not transmit COVID. And now very shortly thereafter, I believe that no, you can actually do that. So I've repaired in an accuracy. So, that's the first problem is we can call that cracks in the foundation that we'd like to store up. And then the other problem is that the foundation is just darn flimsy, right? Because we don't know very much.

Jim: Right.

Annie: Now, here is the cure to both of those ills. Here's the cure to fixing the foundation that our house is built in. Go explore the universe of stuff you don't know. And this now gets to your question of why are people attacking when you just say, "Hey, I don't think anything I believe is really that true". I mean, it's not that I'm not making very decisive decisions based on the state of knowledge that I have today.

Jim: Right.

Annie: But it's up for revision the minute after I make the decision, that's really the way that you want to approach life. When we explore the universe of stuff that we don't know, well, ideally we will be taking at least a random walk through it. If we took a random walk through that universe then I should be able to collide with some stuff that corrects the beliefs that I have. And I'm certainly going to collide with a whole bunch of new stuff.

Jim: Right.

Annie: But we know that we don't walk randomly through that universe. We specifically look around for stuff that confirms the beliefs that we have. We like to talk to people who agree with us. When we do collide with information that disagrees with us, we'll generally rationalize it away and all this stuff. So that's really interesting to your point. So why is that? Because I think that if you asked anybody objectively the following set of questions: So is your goal to become a better decision maker as you move through life? Yes. Do you think that in order to do that, at some point, you're going to have to find out that something that you used to believe is no longer true? And I think they would say yes, but in the moment where they actually had the opportunity to revise the beliefs are like no way.

Annie: So what's going on I think is that it's this thing about same thing with gut. I want to have a positive view of myself. I want to feel good about my identity, and who I am as a human being, and how smart I am, and how objective I am about the world, and the quality of my decisions and all of this stuff that, future me might find out that something I believed is wrong. But present me is the bomb. I'm like the most awesome human being ever. And do not specifically attack my beliefs because if you attack my beliefs and by beliefs, I don't mean just beliefs in God. I mean, beliefs that the earth is round or that an ant has a thorax, right? It's facts or beliefs, right?

Annie: I mean, in that sense. So do we just talk knowledge, beliefs, models of the world, opinions where this is all goes into that category. But those beliefs are literally the thread that your identity is woven out of. Because who are you but your beliefs? I don't know who you are besides the things that you believe to be true about the world. So when you start telling me that a belief that I have is wrong, you are tearing my identity asunder.

Jim: Exactly.

Annie: We will not tolerate that.

Jim: Nope.

Annie: No matter how good it is for us in the future. It's like the biggest marshmallow test ever. Right?

Jim: Yep.

Annie: I think that's really where that problem generates from. This is what we're trying to solve for. How do you get people to be much more willing to go and look in that universe of stuff that they don't know and start to correct the beliefs and broaden their knowledge and think about not just that, but think about the way that someone else who had the same facts that you did might come to a different conclusion about them? And that neither of you might be right or wrong. It's probably somewhere in between and that you should be exploring those conversations because that's where all the interesting stuff lives. The we all believe the earth is round is really uninteresting.

Jim: Right.

Annie: But your value on growth, that's a super interesting conversation to have.

Jim: Sure.

Annie: But instead we're like, you're an idiot. No, you're an idiot. I mean, I've read Twitter, I've seen this.

Jamie: Annie, I don't know if you've seen the Netflix documentary because you referenced us all believing that the world is round, but the Behind the Curve documentary on Netflix...

Annie: I haven't seen it. But my children explained to me that he did the experiment, it failed and he was like, "Oh no, it's still flat."

Jamie: Well, that part's great too. What you were just saying reminded me of one of the narratives is they're speaking with some of the Caltech, actual rocket scientists, and all these brilliant people within science community. And so many of them were saying these people are idiots, let's look down on them. But then there's this also another cohort that was saying it's actually our responsibility to talk with them and have a conversation to help them understand; rather than if we just call them an idiot, then they're never brought into the conversation and have the opportunity to learn. And so it's easier to just say, no, you're an idiot. But if you actually open yourself wider and allow for that conversation, then it's beneficial for more people. But obviously it's easier to just point and say, you're an idiot. The world is not flat.

Annie: Yeah. So, actually let me just dig into that a little bit. Cause I think this is a really good point. So, let's say that we find out that we do disagree on something. You think it's flat and I think it's round, but it could also be, I think I'm supposed to hire this person and you think I'm supposed to hire the other person or whatever. There's only two states of the world that could be true. Well, there's three states. The truth could lie somewhere in the middle of the two of us. So, if that's the case, then we would want to discover that. And so both of us could moderate our opinion in some way, right? So, technically the earth isn't round it's I think a little bit more oblonging. There you go. I can moderate my opinion. It's not flat though.

Jamie: Title of the episode: Annie Duke, the flat earther.

Annie: The slightly oblong earther. Slightly misshapen earther.

Jim: I like that. I like that a lot.

Annie: Slightly misshapen earther. So it could be that it lies in the middle and then there's two other things that could be true. I could be right, and Jim could be wrong. Jim could be right, and I could be wrong. So those are the other two states. Let's call those the same. We're just going to switch who's right and who's wrong. So I think Jamie, to your point, that what happens is that we just assume because we assume we're right. That there's nothing to be gained from having the conversation because we aren't going to change our opinion. So why should we engage? There's two things that are wrong with that. One is that that person actually might be right. And so we really want to explore that to find out if the other thing is true that we may actually want to change our opinion.

Annie: Maybe I'll do a 180 or a 90 or a 46. I don't care. But we would like to find that out. And obviously when we think about the arc of humanity in terms of innovation, it's somebody who thought they were right and they were good to go, and then there's Apple in the 1980s and Steve jobs comes along and sorry IBM. So, we know that we want to have conversations and not just dismiss people for being wrong period. But here's the thing, even if we knew for a hundred percent, let's say that, I know for sure that I am right about something and Jim is wrong about something. And I know that for sure. So, I'm the rocket scientist and they're the flat earthers, but it is still really worthwhile for me to have a conversation with Jim about it even if we knew that, objectively, what I thought to be true was true. And the reason is that a lot of the things that we think are true, we don't actually know why very well.

Annie: So for me, I'm not a rocket scientist. I believe the earth is round-ish. But if you were to ask me to actually explain this belief, I would do a piss poor job of it. Because I can't say because I saw the pictures, cause I actually don't know how you can tell if a picture is doctored or not.

Annie: So, I'm not really sure. Scientists say well, that's just a proxy. That doesn't mean I know it, it means that I'm using somebody else's knowledge as a proxy for my own knowledge. There was this experiment with the thing, but I've only heard vaguely about, I certainly can't describe the experience. I know there's something to do with the horizon, but that's about as far as I can go, I stink at it. So, when I talk to Jim who believes the opposite, by having the conversation where I have to properly convey to Jim, why I believe what I do, I'm not trying to convince him of anything. That's actually where things go really south. But I'm just conveying my opinion to Jim. I know I'm going to butt up against the limits of what I know, that it's going to cause me to have to go and Google some stuff. Ha ha! This is a good way to get into that universe of stuff I don't know to start exploring my own beliefs.

Annie: I think about it in the way that you talk to your child, right?I think about it as being but why? That when you interact with someone who believes something different than you, even if you knew what you don't, that you were right, objectively. Being but why'd is really helpful because you actually understand that thing that you believe much better at the end of it. With your kid, I always say, oh, my kid says to me why is the sky blue? I

went to graduate school, like I understand perception. So I say something super fancy like well, light refraction. But I say it in five-year-old terms like oh, the sky has all the colors of the rainbow, but the air only lets us see the blue parts. And what does your kids say to you immediately, but why?

Jim: Why?

Annie: Right.

Jim: Exactly.

Annie: So now I have to go find out and two things happen in that process. One is just for selfish reasons. I now understand my belief much better. And sometimes they're going to find out that maybe that's not exactly right. And it's going to give me an opportunity to actually revise a belief. But even if I'm a hundred percent, I understand it better. The other thing, and this is important, particularly as you put this into team settings and to your point Jamie about what is your obligation to the people that you're speaking to? My child, or Jim or whoever becomes more educated in the process is I become more educated about my beliefs because I'm forced to be able to convey to another human being: This is why I think this is true. And here's how you can tell that it's true.

Annie: And I need to be able to do that properly. Now, obviously there are some people who do not argue in good faith and I used the wrong word. There are some people who are not stating their beliefs in good faith. There's a lot of flat earthers, it turns out, don't actually believe that it's a group identity thing. If you're not going to have a good faith discussion with me, I don't really need to be involved. But assuming that you really believe the thing you do, which happens all the time like hiring committees, and investment committees, and with your wife, or husband or whoever. Not everything is about something that has an objective quality where we could know or don't know. These disagreements come up all the time and we want to uncover them.

Annie: And even if you're the subject matter expert in the room, even if you're a leadership or whatever. You're actually the most important person to get but why. Because first of all, we certainly want to find out that you're wrong because you're going to influence everybody else in a bad way. But second of all, I assume you want to educate your team. So I think that this is just a really important part of the decision process is this, but why?

Jamie: Yeah, last or maybe was two years ago now. Wow, time flies. But at democratize quantum, we were talking about how two things, one is explaining. So in my case, we were talking about how when I explain things that I'm 100% sure that I know what they mean, how they work, and how to define them and explain and simple way to Maris a finance term. My girlfriend Maris, I'll realize, wait, I don't really actually know how that works. And you quickly realize it.

Annie: Yeah.

Jamie: And the same thing though, I think to do that on a solo basis is just through writing. There's few things as humbling as staring at a blank Microsoft word document, and you know what you want to say. There's so many cases where with my Sunday reads, I know in my head the things I want to connect and the overall theme and argument, but then when I actually go sit down to write it, I want to punch a hole through the computer because you just can't get out what you want to say exactly. Because you realize you don't actually know to the granular level what you're trying to talk about. And so I feel like that's the best way if you don't have someone to call you out.

Annie: Yeah. I love both of those examples. I would say that for me, in my poker career, the biggest jumps that I made were when I was having to teach people. Because I would find out, oh my God, I totally thought that I had a good explanation for why I thought that this particular tactic was good, but I can't explain it. So I actually changed through the teaching process, it's a stress test for your beliefs. I ended up changing some of the things that I do in the game and generally I tended to do really well in tournaments right after I had taught a seminar. But to your point about the writing, which I think is so true, people they're connected. Like why do you write?

Annie: They say to me. And then the other one is what is the writing process like? And my answer for what the point vessel I said despair. And they're like why? Then why do you keep doing it? I said, well, because the despair is actually really useful because the despair is exactly what you just said, Jamie. Man, when I was showering and thinking about that topic and what I was going to put down on the page for the next 5,000 words, I was a freaking genius. Man that made a lot of sense. And it was really eloquent and might as well have been Shakespeare, right? It's about behavioral economics over here. Right?

Annie: Whew, that was really insightful. And then you try to put it down on a page and you're just like, I have no idea what I'm talking about. And it's literally you're spending about nine months seriously in the writing. Some people are faster, some people are slower. It's just every day just saying I'm an idiot. But then they say, well, why do you do it? And it's because oh my God, because at the end you're so much better for it.

Jim: Do you remember Annie when we had lunch in New York city about a year and a half ago, maybe? You were writing this book.

Annie: Yes. So now I'm telling you I was in total despair.

Jim: Exactly. We were having this conversation.

Annie: Yeah.

Jim: We are so simpatico on that because the but why, that's how you keep a beginner's mind.

Annie: Right.

Jim: I have a six year old grandson who's super smart, and I get but why'd by him all the time. And it's really good for you.

Annie: That's right.

Jim: You are absolutely right. You might think, oh, easy to explain. And then you start, you look at the bright eyes of your little six year old grandson or your four year old granddaughter, and you're like, oh shit.

Annie: Right. And this is true about things that you really think you're an expert in. It's like when the intern, you're just declaring, oh, this is definitely a great equity to buy. And the intern's like, but why? And you're like, well, because it's going to go up. Okay. [crosstalk 01:13:36] they'll really dig in on you. The price to book is great, but why? Why does that matter? And then you have to explain why is that an important thing? And to your point, also, Jamie, I think about discovering when you're talking to someone who's really on the other side of it, one of the things that it stops you from being able to do is jargonize it. I can get away with a lot when I'm talking to somebody else who has the same jargon that I do. Where I can just start throwing around terms. In this conversation, I was like frothy and alpha and beta, whatever. And people are probably like, oh, she should totally be an investor. By the way, I totally shouldn't.

Annie: I know the words, but it makes me sound like I actually know more than I do. Right?

Jim: Yep.

Annie: I think that can actually fool us into thinking that somehow, because you haven't really asked me what is my definition of these terms? What do I really understand about it? Why does it matter? That kind of stuff because you're not poking around in it because once I throw in the jargon, there's just this assumption that we have the same belief. And all of a sudden we're not exposing that. This is another thing for me about writing because I'm not writing to people who are academics. I'm writing to the general public who wants to become better at this.

Annie: Writing to the general public who wants to become better at decision-making. By the way, you try defining base rate to somebody like that. Right? It's hard. And so it forces you to sit down and say, well, what does this really mean? Because I use it all the time and I know what it means. And I just operationally I can do it. But, if I actually had to say to someone who had no idea, how would I actually define it? And that's actually a much harder problem because you need to think about that sweet spot between plain language and losing the meaning.

Annie: And that's actually not a super easy place to live, but you do find out, like what do you understand about the concept and what don't you? And I think that's one of the huge advantages for me personally, as a human being, for writing to the audience that I do, where I'm trying to bring people into the fold of behavioral psychology decision-making, decision science, behavioral economics, who don't do this for a living.

Jamie:	I don't know if it's the same as in your field, but I know within history, there's always the push and pull between the academic world and what people would call popular historians, because there's that kind of, how much are you dumbing things down? Or not dumbing things down, but making it seem like what we do is less difficult or intensive than it is.
Jim:	So, I think that jargon is a crutch. And it goes back to, when they used to say Catholic masses in Latin. I asked my grandfather who was a really great source of a lot of my thinking about things. He goes, "Well Jim, the priesthood doesn't want the laity to know what it's saying."
Annie:	There you go. That's right. It goes back to that thing about gut, right?
Jim:	Exactly. Exactly.
Annie:	Like, "Oh, I'm special because I've got special knowledge, it's just for me." And then, obviously jargon becomes a signal. Now look, I have to say, there is a place for jargon in terms of efficiency. So I have this word tilt from poker, and it's nice that I don't have to say it every single time that I want to convey that concept. That it's, when you have had something bad happened that causes you to ... The emotional parts of your brain to get activated such that the more rational parts of your brain shut down, and it negatively impacts your decision-making in the immediate wake of the bad outcome. Now that's a lot.
Annie:	So if I can just say "Oh, tilt, it was tilting." Obviously, it's helpful to me. But the thing is that I have to be able to pull back and actually give you that full sentence.
Jim:	And the thing about writing very clearly for an intelligent audience is you said a moment ago, and I just completely agree with you. You can't read other people's minds. You don't know what they know, what they don't know. And so everybody thinks, "Oh, I know that Annie thinks X, Y, and Z." No, I don't. And I know you, right? So it's like, you actually don't know that. And so I've been very lucky. I've written four books and my wife graduated summa cum laude in journalism. And in addition to being a soon to be published street photographer.
Annie:	Yes, yay! And I have an original [crosstalk 01:18:37].
Jim:	I know you do.
Annie:	I have two. I have two in my house.
Jim:	But she also was, and is, a killer editor. And so she would come out and she would just look at me and she would say, "Okay, this is jargony. I'm not going to even edit it. You just go back."
Annie:	That's right. That's right.

Jim: And you do this without jargon.

Annie: Right.

Jim: And then, when we started this trip together, I would get really pissed, right? I'd like, "It's a term of art." And she goes, "I don't care. I don't care. I'm a pretty smart woman, and I don't know what you're talking about. And I live with it."

Annie: Right. Yes, exactly.

Jim: And so what happens, is you have to keep, but whying yourself until you get down to a place where you've made it as simple as you can, but not simpler, right?

Annie: Well, that's the thing, it's like that's that thing of that line you have to walk because you don't want to lose the meaning of it.

Jim: Exactly.

Annie: So that goes back to what Jamie you were talking about with this push and pull, like the popular versus the academic. I think it's a real ... First of all, I know there are some people who are academics who say, "Oh, you shouldn't write it at all for popular anything, because you're bastardizing what we do." And to them I say, "Well, why are you doing what you do then?" Like, aren't you trying to better humanity, so it'd be good if you communicated these ideas to humanity.

Annie: But then you have to walk this fine line, which is taking these concepts that are terms of art, that really do have very important and impactful meanings. And making sure that you're not simplifying it so much, that someone is going to use it for evil instead of good. I don't mean actual evil, I mean, but not just misuse it.

Jim: I know what you mean.

Annie: So this actually happened to me. When I wrote Thinking in Bets, of course, I'm talking about resulting and saying, "Okay. So just because an outcome is good doesn't mean you made a good decision. Just because an outcome is bad, doesn't mean you made a bad decision. And I cannot tell you the number of people who wrote me after I read that and said, "Oh my God, you've ..."

Annie: And now I realize I probably made a really good decision and you've relieved me of this pain that I've been in, which is fine. Like, I'm happy that I stopped you from suffering, but Oh my God, that is not what I meant at all. So, what I realized was that, in talking about this separation between outcomes and decisions, I hadn't been precise enough to say it really cuts both ways. And not only that I hadn't communicated well enough that for me, if you could have lived inside my brain, I would have told you that I think the much more dangerous problem is thinking that you had a good outcome and that there was a good decision that underlies it. I mean, I think that's the big problem for me, is you drive home drunk and you think you're great at driving drunk.

Annie:	That's the bigger problem for me. And I think one of the reasons is that, is that the feeling that you get from having a good outcome is, that wraps into your identity. I mean, the chances that you're ever going to uncover that you just got lucky or just so much smaller. Because we don't want to poke around in it. Right? So we have this asymmetric eagerness, desire to explore bad outcomes versus good. If I explore a bad outcome, well I had a bad outcome, because I already feel bad. And so of course I wanted to try to look for the luck in there, because I can get out of it. It's like a trap door. "Okay, I can exit." And now I don't have to feel bad about myself, because it turns out the decision was pretty good.
Annie:	But the reverse is not true. If I have a good outcome, I'm feeling pretty good about myself. Well, I don't want a door out of the room. So you're not going to explore that. And that's why I think that's a much more dangerous problem, I think is a huge problem. And I did not clearly communicate that in thinking of that. In horror, I had people come up to me and being like, "Oh, you made me feel so much better." And it was like, "I'm glad he felt better, but that's not what I was [crosstalk 01:22:49].
Annie:	So that's something like, in how to decide, I was really trying to repair that. And, I think that this book happens to start with resulting. And then as you know, it takes this really hard left into hidden information. But I think you have to start with this resulting problem just to set things up. But now I've got this two-by-two and I'm like, "Okay, look, there are four things that could be true. Good/good, good/bad, bad/good, bad/bad." And you got to look at all four of them.
Annie:	And then I actually really linger over the quadrant, which is good decision, good outcome. And I say, "I linger over it." And there's this exercise in the book where I'm asking you, "Okay, fine, you've made a good decision. You had a good outcome. What were the other ways that it could have turned out? Were any of them better than the way it actually did? Was there something that you could have done in terms of your decision-making that might've increased the probability of those better ways happening? What were the worse ways that could have happened? How likely do you think those were?"
Annie:	Do you really think that maybe the thing that actually you ... Like really looking through to try to say, this is something we were talking about in poker, you hear people in backgammon or chess, you can be sitting on the secondary line of play, which is pretty darn good. But I don't want to leave all of that, all those bits on the table. So I just wanted to jargonize it. I thought that'd be fun. I want to get on the primary line.
Annie:	The second best decision is going to make me very successful in life. No doubt. But if I'm sitting on that, and there's a better decision to be made and I'm not exploring it because I'm just sitting there going, "I'm great." Then I'm leaving stuff on the table and that's my fear, right? Is that I'm not sitting in the primary line. I'm just using that as an example of like, boy, did I screw that up in Thinking in Bets? And now I wanted to come back and clean it up, like take out the vacuum and be like, I got to figure this one out and help this along here.

Jim:	Well, anyone who writes a lot and tries to convey information, which honestly can be very complicated.
Annie:	It's so hard.
Jim:	In a way that people can really get and understand, we're always going to progress, right? We're going to look at say something, I look at things I wrote 10 years ago and I'm like, "Okay, I really screwed this up."
Annie:	I look at things I wrote a week ago.
Jim:	Right. Right. Exactly.
Annie:	Boy, that was really bad.
Jim:	But that's great because that's how you get better. Right? Well, Annie, I could talk to you all night long and I think Jamie could as well, but we are nearing the end. And so I have a fun question for you, which is we're going to [crosstalk 01:25:58].
Annie:	Wait, how much would you bet it's fun?
Jim:	I would bet that, I would wager even odds, a hundred bucks that you're going to find it fun. Do you want to bet?
Annie:	Well no, because you have more information that [crosstalk 01:26:14].
Jim:	See, I knew it. I would never play poker with you.
Annie:	The information landscape here is quite asymmetric because you know what the question is, and I don't.
Jim:	Exactly.
Annie:	So it's not good. I'm not going to bet you even.
Jim:	See, we just taught a lesson right there. And I'm not playing poker with you.
Annie:	There you go.
Jim:	So the question is this, we wave a wand and you become the empress of the universe.
Annie:	That's so much pressure.
Jim:	Yeah, but it's only for one day.
Annie:	Okay. I know what I'm doing.

Jim:	Okay? And you get to make two proclamations, and laws, whatever you want to think about it. And everybody's got to accept it and do it. What are your two? What are you going to do? What are you going with?
Annie:	Wait, is it about how, like helping people make better decisions?
Jim:	It can be whatever you want it to be. And everybody, that's part of the fun of this one [crosstalk 01:27:13].
Annie:	Okay, so wait. It's laws though. Like I can't change people's brains?
Jim:	Jamie, what do you think? Should we let her change people's brains?
Jamie:	No, I think it has to be like your ultimate dictator, and you can institute two rules.
Jim:	Okay. Yeah, no, you can't Annie. Yeah, you've got to work with humanity the way it is right now.
Annie:	Okay. Boy, this is really ... So, okay. Let me just say, I'm not a big nanny state person.
Jim:	Nor am I.
Annie:	This is hard for me because I'm like ...
Jim:	Super hard for me because the only thing that I really, really am is anti-authoritarian.
Annie:	Yeah. So it's hard. This is hard for me.
Jim:	It is. It's meant to be, but also fun.
Annie:	Okay. Actually, so I'm making humanity better. If I'm making humanity better, here's one thing I think that I would have to do to make humanity better. I would make sure that the market is actually free, which it is not. People talk about like, "Oh, capitalism is so horrible," but I hate to tell you this people, but America is not a capitalist country.
Jim:	That's not capitalism.
Annie:	That's crony capitalism.
Jim:	Exactly. Well I love that one.
Annie:	So no more crony in the [crosstalk 00:13:51].
Jim:	Boy, you get my vote right there. So okay, that's [crosstalk 01:28:54].
Annie:	Okay, so that's one is I want the market to actually be free.

Jim: Yep.

Annie: Okay. So that's one.

Jim: I love it. I'm on your team.

Annie: Because then by the way, then it's like we could solve, climate change can get solved because we're not picking winners and losers. That would be great.

Jim: Human ingenuity. A free market is the best expression of betting on human ingenuity.

Annie: Yes. And I really believe in human ingenuity. So, that's one. [crosstalk 00:14:22].

Jim: That's one. I love it.

Annie: I got one, I want a free market. Okay, two. Oh, this is so hard because it's so against the grain for me.

Jim: Yep. That's why I came up with it, because it was for me too.

Annie: Yeah. Okay. Let's see.

Jamie: It'd be really fun if we didn't edit any of this, like pause out.

Annie: Right?

Jim: I think we should. I don't think we should. I think it's great.

Annie: That would be so good. Okay, I know what it is.

Jim: This is how people actually think.

Annie: I know what it is, I think.

Jim: Go for it. Go for it.

Annie: Okay. I actually believe that the idea of, like if you could in the world really have independent executive branch, independent legislative branch, independent judicial branch, actually acting independently and checking each other. I don't know that there's a greater way to have government be. And then boom, I would say those things, because obviously a lot of those things, it turns out are norms, who knew? And also then there's just like human ... There's some other stuff where it could be independent, but it's not. And that kind of stuff.

Annie: But I would say, okay, I'm waving a wand, and those things are actually going to act independently and we're going to make sure that's everywhere in the world that we're going to have what is actually liberal democracy, everywhere in the world with these

independent three branches checking each other. And an actual free market. So there you go. That's what I would [crosstalk 01:30:54].

Jim: Oh my God, I love you.

Annie: That was such a hard question.

Jim: But those would be my two as well. And the second one always [crosstalk 00:16:01].

Annie: We mind meld, there you go, mind meld.

Jim: Yeah, we mind melded, because the second one always makes me chuckle because I've had these discussions with lots of people and they'd go, "Well, wouldn't it be great." And I'm like, "You do know that the United States is a constitutional republic that was set up with checks and balances. And that's the way it was supposed to work. Kind of like the way the market was supposed to be free."

Annie: Yeah. So yeah. I mean, so I think that, that's what I would do. I do want to also say that, I think it's really, really good for democracy to have a safety net. I would like to just add that for myself. I happen to be pro safety net, so just want to say that. But that's part of a functioning democracy is people get to vote for that or not vote for that. So I think that, that's really a good thing.

Annie: So there you go, that's absolutely what I would say. And I think that for people who think otherwise, what I would love to do is a little negative thinking. Which is, okay, I'm going to hand over the power for someone to make this decision because I like that person. And I think they're great and they're ethical and they're awesome. And they have this idea about what they're going to do with this power. For example, concentrate power in the executive branch or something, like we'll have an executive that's got tons and tons of power, but I love that person who's going to be the executive. And they're going to make great decisions that I'm going to agree with, and it's going to be awesome. Right?

Annie: So let's do some negative thinking. And it's four years from now, and boy that went south. I can come to the conclusion really quickly, either the person turned out not to be the person that I thought they were, or power corrupts, that would be another one. Or somebody else who I don't agree with, ended up in that position that we just put all that power with. And now they have the power to decide over me in a way that I don't like.

Jim: That's the way I always set it up. I always say, when you're designing a system of say, government, right?

Annie: You have to think about the worst possible person on earth having that power.

Jim: Exactly. Exactly. You've got to be able to ... And that's why the brilliance of our constitution, checks and balances and everything, because these guys, they knew that they were designing it with somebody that they hated, in mind to being in that office.

Annie:	Yes, that's right. What if King George were President?
Jim:	Exactly.
Annie:	How do we make sure that, that goes okay?
Jim:	Exactly.
Annie:	Exactly. So that's what I've always trying to figure out, that's the thing. I think this is a really good example of negative thinking, is that what looks good right in front of your face, the brownie right in front of your face. So this would be great because there's going to be somebody making these decisions that I agree with. And I really believe that the world is going to be a better place for it. You have to think about, well, what if somebody who you don't like ends up with that same power?
Annie:	The other thing I think, this also goes with this negative thinking. It's like a lot of times there are unintended consequences, right? And you have to explore how could this go wrong? Like, what are the really bad things that could come out of this? And I think that people don't think ahead.
Jim:	Second and third order effects.
Annie:	Yeah, exactly.
Jim:	And I always use prohibition in the United States to make the example, right? It's like America did have a drinking problem. It really did. People were getting drunk and going home and beating their spouse up, and it was awful. And so, okay, let's make it illegal. Those people didn't think about what would the second and third order effect of that be.
Annie:	Actually, there's an example of this. Right now, I can't remember what the country is, I'd have to Google it.
Jim:	I think it's Portugal.
Annie:	Yeah. Is that it? So that somebody banned smoking?
Jim:	Oh, no, then it isn't. I thought you were talking ... Portugal decriminalized all drugs.
Annie:	No. So there's a country right now that banned, I think it was smoking. Was it smoking and drinking maybe, during coronavirus.
Jim:	South Africa. South Africa.
Annie:	Okay. And immediately a very robust undergrad, like illegal drug running alcohol selling, like an industry just right away, like black market. And of course that's what's going to happen, right?

Jim:	Yeah. So one of my favorite thinkers is a guy by the name of Robert Anton Wilson. And he says that whenever the government makes something illegal, it immediately creates a black market that will supply that good or service at vastly higher prices than it would in a free market.
Annie:	Right. That's true.
Jim:	And it always happens.
Annie:	And also, I think murder should be illegal. I just want to say there're some things that should also be [crosstalk 01:35:47] illegal.
Jim:	Oh, I agree.
Annie:	Is there a black market murder business?
Jim:	Of course. Oh, well, come on.
Annie:	I guess.
Jim:	Those are great stories. There was a group called Murder, Incorporated.
Annie:	Oh, yes!
Jim:	Okay? And so literally, they were a business. "Who do you want whacked? We'll do it."
Annie:	So I do just want to say that I really think about direct harm versus indirect harm. And something like drinking, that's not really in the direct harm category for me. So I think it's fine for society, illegalized things that really cause direct harm. Like one human being is harming another human being, which is why murder is bad, and should be illegal.
Annie:	But indirect harm, I think that's where you get into this very big slippery slope where a lot of times you're legislating morality. And one of the things that I would say is that, I think that a lot of people think like, "Well, the reason why murder is illegal is because it's immoral." I agree it's immoral. But the reason why it's illegal is because it causes direct harm. So those two things that are separate because in the end we're really not trying to legislate morality.
Annie:	The other thing I think is really interesting, because I've heard this argument a lot on laws is people will say, "Well, that's a stupid law because we shouldn't do that because you can't really enforce it. Because people will get away with it." And I'm like, that doesn't mean that you should make it illegal though.
Jim:	Right.
Annie:	I think it's fine to make it illegal. You don't catch all the murderers, but it's really good if that's a law.

Jim: Yeah, I agree. Well, Annie, I will go into business with you anytime because I think we are very simpatico.

Annie: I guess I gave your answer. That was such a hard, I wasn't prepared for that.

Jim: I know you weren't. I never tell anybody about that question, because I love to see the way they think. And you passed with flying colors.

Annie: Oh God. No, that's just because we're confirming each other's beliefs.

Jim: Exactly. Exactly.

Annie: That's why. Confirmation bias.

Jim: Confirmation bias is off the charts here.

Annie: Yeah.

Jim: So listen, thank you so much. The book is How to Decide, people can get it anywhere. And it comes out in the reformatted version, when? Is it out already?

Annie: Yeah. Okay. So here's what happened. It was supposed to come out on September 15, and it's been a whole ... I don't know if people read about this, but there's been a lot of problems with printing during COVID. Part of which is just because printers are indoors. But the other issue is that there's been unprecedented demand for books. There's been a resurgence of reading, which is, it's a good thing that's come from it. But it's put a lot of extra load on the printer. So anyway, my book got in the way of all that and they misprinted every single copy.

Jim: Oops, I hate it when that happens.

Annie: Yeah. So books aren't printed in order, like they're in 20-page sections and then those 20-page sections are like bound together. And so there were 21 of those sections was repeated and one was left out. So I guess there was some stuff that you got to see twice and then some stuff that you didn't see at all. You have a copy of that.

Jim: I do. It's a collector's item.

Annie: Well, maybe some day.

Jim: The next time I see you, you have to sign it for me.

Annie: Yeah. So anyway, the problem is they couldn't just be like, "Oh, whatever, we'll just reprint them." Because you have to make sure that those aren't getting sent out. But Amazon and the book sellers and the way that those do that is they scan the ISBN, the little code. And so we had to change the ISBN. It was a whole thing. So, that meant that

it got delayed. So October 13th ended up being the release date. And I'm trying to, you know, lemonade out of lemons, I guess.

Jim: Exactly. You got to roll with the punches.

Annie: That's got to get out.

Jim: Annie, as always, you delight me. Thank you for making us understand decision-making better.

Annie: Well, I'm trying.

Jim: And thank you for joining us on Infinite Loops.

Jamie: Thank you so much.

Annie: Thank you.

Jim: Annie, that was fantastic.