

The Knowledge Project presents

Michael Mauboussin

PODCAST TRANSCRIPTS

Welcome to The Knowledge Project. I'm your host, Shane Parrish. I'm the author of the Farnam Street blog, a website dedicated to mastering the best of what other people have already figured out. In The Knowledge Project, I host guests from a wide range of disciplines to better expand our minds and challenge our thinking.

The guest on this episode is Michael Mauboussin. Michael is one of the best thinkers about thinking out there. I thought he'd make the perfect guest to kick off the show. Not only is a director at Credit Suisse but he's done a ton of research on decision making.

I hope you enjoy the conversation with. If you enjoy it, please let me know your feedback: I'm @farnamstreet on Twitter, and thank you for listening.

This transcript is part of the Farnam Street Membership.

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Shane Parrish: Michael, welcome. Thank you so much for agreeing to come on the first episode of The Knowledge Project. I'm happy to have you.

Michael Mauboussin: Thank you, it's a thrill to be with you.

I was wondering if maybe we could start with your daily routine. What's that like?

Every day is a little bit different for me, but there are probably a couple of key elements. For me, one of the key starting points is always sleep, so I'm one of those guys that needs to sleep, and doesn't function as well without sleep. I went too long in my life without figuring that out.

For me, at least eight hours is really important for me to be functioning effectively. A lot of time, on normal days, is usually doing research, and reading things. I am one of those guys who spends very little time watching TV.

I do watch things, like sports, from time to time but most of the time is spent on reading and trying to do some research. A typical workday, that

is. The other thing I'll say that's really, super important to me is physical activity. I try to work out a number of times a week.

I – you'll appreciate this as a Canadian - I'm a hockey player, so I like to go out every week or two..a night or two a week and and I try to play and skate with the fellows and so forth. Those balances between sleeping well, trying to eat well, exercising, and then spending a lot of time reading is a typical and productive day for me.

Do you chunk your time when you're reading? Do you do that in increments of...what would be the time that you set aside for that?

This is the name of a book that was referred to in the text.
BY MICHAEL SIMS

Some days are better than others. I'll tell you what's interesting. Mostly, when I go away on vacation, for instance, I will almost always be very methodical about chunking large blocks for reading, specifically.

At work it's a little bit more haphazard because things are coming, going calls, meetings, and so forth. Whenever possible, I'm much more effective at writing and reading in chunks. I'll mention one little side story, the first book I wrote, I co-authored.

This is now a dozen years ago, more than that, 17 or 18 years ago. I thought that I could do a bit on the fly, a little bit here, a little bit there. What I realized is, for my sustained effort and attention, I really do need to block out in chunks. For me, it's a very important thing to do.

I find that if I don't chunk out time in at least 30 to 45 minute increments, it tends to be consumed by technology. I don't know about you but I end up picking up a device or doing something else. What role does technology play in how you go about your time? Do you read on a Kindle or are you reading physical books?

The technology ... I am the same. I can get fidgety, and then if I'm easily distracted by technology. That said, I find it to be very useful. Now probably the first thing I check in the morning is Twitter, versus read papers, although I do try to go through the papers fairly methodically.

I do try to tune that stuff out as much as possible, and come to it from time to time. As for reading, and I don't know if this is a generational thing, but I still prefer physical books to reading on the Kindle. I might read on the Kindle on a plane or something.

But usually I'll do shorter reads versus long reads. Mostly, I like physical books. Probably it's because of habit, but I also like to write in them from time to time. The most important thing for me is I feel like I can remember...

I don't have that good of memory when I read, but I do tend to remember where things are in books, physically. I know, "This is something that was interesting. It was a passage on the left page, about in the middle." I can go back and find it that way.

For some reason, my own mental recall tends to do much better with physical assets than it does with electronic. Even though I know I could search for it electronically, I feel more comfortable with it in the physical form.

There is some research showing that there might be differences in how people can absorb and recall information, based on physical versus electronic, but I'm still an old-school guy. The problem is I have all these books everywhere. I don't know what's going to happen to them, but that's OK.

Shane: You're a bit of a prolific reader. How do you go about taking notes and synthesizing books? What is your process to integrate that into your day-to-day life, when you read something that's meaningful to you or something you want to remember?

I'm probably not as methodical about it as I should be. That said, a lot of what I read does relate to my day job. A lot of my day job, I'm working with mostly concepts around business and investing. Many of the concepts cross over quite well. I find myself often using things in my own research.

That is incredibly useful. When I write about it or I have to speak about it, it means I need to understand the material reasonably well. There are a lot of little side topics. I try to remember them. I try to bring them up in conversation. I try to weave them into my own mental models.

There are some books -- not many, but probably one in 10 where I will write in them, underline a lot, write notes, and so forth. The great book, "How to Read a Book," is what I would recommend most people do, talking about different levels of attention – that's Mortimer Adler - different levels of attention you might pay to different things you read. I'm not sure, again, I do it systematically, but that's roughly the structure that I tend to follow.

Do you go back and organize that through Evernote or something?

I don't. I should. That said, a lot of...I should probably be more systematic in this in terms of my library. But in my library, I can find almost everything. You know, I have a few thousand books probably, but I can find almost everything pretty quickly because I have it mentally cataloged.

So certain sections, I often put authors together, but certain sections, I know where things are. For the most part, I can do that reasonably well. I'm sure there are many things I'm missing. I probably should be more systematic, but yes, so far so good. I'm comfortable with this approach.

The Role of Intuition in Decisions

You've done a lot of thinking on decision-making as it pertains, not only specifically to the investment industry, but outside of that, in terms of how we go about making better decisions. One thing I don't recall a lot in reading your research is the role of intuition in decisions, and how that can be helpful or harmful. Is that something you can speak to?

Yeah, absolutely. I've thought a fair bit about this, and wrote a bit about it in one of my books. Let me first say that there is a role for intuition. That said, I think it's broadly over-estimated.

Intuition: Its Powers and Perils
BY DAVID MYERS

The way I like to think about this, and by the way there's a great book by David Myers on this, called "Intuition." It's a book I really would recommend. It's one of the better treatments of this, and more thoughtful treatments of this.

The way I think about this is, intuition is very domain-specific. Specifically, I would use the language of Danny Kahneman - System one, System two. System one is our experiential system. It's fast, it's automatic, but it's not very malleable. It's difficult to train.

Our System two, of course, our analytical system, is slower, more purposeful, more deliberate but more trainable. Intuition applies when you participate in a particular activity to a sufficient amount that you effectively train your System one.

So that things become, go from your slow system to your fast system. Where would this work, for instance? It would work in things like, obviously, with things like chess. Chess masters, we know, they chunk. They can see the board very quickly, know who's at advantage, who's not at advantage.

But it's not going to work... So, the key characteristic is it's going to work in what I would call stable linear environments. Stable linear environments. Athletics would be another example. For long parts of history, it was in warfare. Certain elements of warfare would work.

But if you get into unstable, non-linear environments, all bets are going to be off. There is a great quote from Greg Northcraft, which I love, when he says you have to differentiate between experience and expertise. Intuition relates to this.

He said expertise... An expert is someone who has a predictive model that works, and so just because you've been doing something for a long time doesn't mean that you have a predictive model that works.

I would say intuition should be used with a lot of caution. In some realms, really great. Other realms, it doesn't work so well. One of the things, and I'll end on this point, is that the first time I met Danny Kahneman was probably a decade ago. I took very copious notes in that session.

One of the key concepts he talked about was what he called "disciplined intuition." He said, "You know, you're going to have these base rates, or statistical ways of thinking about things, and then you're going to have your intuition. How do you use those two things, and in what order?"

The argument he made was you should always start with the base rate the statistical approach, and then layer in your intuition. He called it "disciplined intuition." Otherwise, if you go with your intuition first, you're going to seek out, right, you're going to seek out things that support your point of view.

I always think about it that way. I know that a lot of people make decisions using their gut or their intuition, but I don't know that that's the best way to do it in most settings. Some settings, yes, but most settings, no.

Let's say we're in a fairly stable environment, where intuition can play a predictive role. How do we go about honing that? More importantly, in the context of an organization, how do you go about learning to hone your intuition based on other people's expertise?

Yeah, that's a great question. This is where you would fall back on the Andrews Ericsson stuff on deliberate practice. This would be...the key here is really the notion of feedback, where you make a decision or you see something, and you get feedback as to whether that's correct or not.

Then you correct course, and so forth. In those stable linear environments, you can practice deliberate practice, and you can get feedback that allow you to correct course and get better and better. Then you start to internalize a lot of those lessons.

There's an even more trivial example of where intuition might work, and that is low level driving. You learn to drive a car. The first day you're using your System two. But as you progress, you get better so you're capable. You're OK, and you're not a hazard to society.

The fact is most of us, as drivers, can't go on some race course or drive some stunt because we don't have that level of expertise. For many things in life, good enough is good enough.

To really train your system and to be really, really good, it requires that structured, deliberate practice. The essential element there is the feedback.

The Decision Making Process

That's a great point. When you're working in a large organization and you're making decisions, you may be part of the cog in the wheels, so to speak. How do you, as an employee, learn from the process by which other people are making the decisions? How do you try to tease out the variables that you should be paying attention to that you may not be an expert in this industry? How would you orchestrate that process to maximize the learning between people, and not necessarily reaching the most rational or best decision you can?

It's a great question. The way I would think about this is to emphasize the process rather than the individuals. You think about quality decision making and even things like the wisdom of crowds and so forth.

The key is, first of all, settle on what you're trying to figure out to begin with, which is important and not always crystal clear. The next thing is to surface alternatives or to surface various ideas. When you think about where a lot of organizations go wrong, it's in this process.

People, either wittingly or unwittingly, suppress their views or opinions about various things, and, hence, not all the possible solutions are considered. Then you go from there to figure out what is the best solution.

When I look at organizations and say are things working well, are things not working well, I tend to focus on the process and saying are the processes here in place sensible. There are a couple of things I'll mention.

When you talk to people, for example, on committees, there are common things you would hear from people. One is my committee's too large. There is an optimal size for a team, and it's not 10. It's not 15. People will complain, "We have too many people, and that's dilutive to what we're trying to do."

You'll hear people talk about someone in the room, the senior leader, for example, might express his or her view very strongly. That immediately suppresses alternative points of view. Those are common things. To me, the essential thing to try to learn from is: is this, at its core, a thoughtful process?

A lot of organizations of all stripes emphasize the virtues of diversity, which is of some value, but they are not necessarily clear on how to manage diversity. It's not just to have it, it's how do you take advantage of it.

That's something that's lacking in a lot of places. That's a potentially very large area for broad improvement, not just in business but almost every walk of life.

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I love the idea of evaluating your decision-making process. It's like the check and balance for the knowledge worker, so to speak, if you're making decisions all day and that's how you're going about it. One question is we can come up with the construct that a thoughtful decision process will look different depending on the environment and depending on the type of decision. But how do you go about evaluating a decision process if you're operating in a constantly changing environment? Is it different in terms of how you look at that, do you think?

It's inherently different and really, really difficult to do. By the way, as a general statement, this is right. Often in, for example, companies or large organizations, when you're a relatively low level, so you're starting out or you're doing a lower level job, often a lot of what you're doing is very skill based, very prescribed. It can be quite clear whether you're doing your job effectively or not. As you move up in the organization, interestingly, you're probably making fewer decisions, on average.

A CEO is making fewer decisions than, for example, a line employee. They're obviously more consequential decisions, but they also tend to be more probabilistic. It becomes really difficult to try to assess that.

Things like setting a strategy for a company is an inherently probabilistic exercise.

You don't really know if what you're doing is the right thing to do or not, or you really can't anticipate all the possible contingencies. It does go back, still, to the process, but we need to acknowledge, even societally, that certain types of jobs or certain types of roles have an inherent lack of predictability that make them very difficult to assess. The natural thing we all do, then, is, after the fact, say successes should be equated with good decisions and failures equated with bad decisions.

> “The question is are there ways that we can train people to think in such a way that allows them to have an edge over other people?”

That’s a really big mistake in a lot of circumstances. Maybe even those complex environments we could talk about sub-components. Are you getting the sub-components right? I’ll tell you, Shane, I’ve been thinking about this, and I don’t really know a good answer for this.

For example, the markets, stock markets, are a great example of what you’re talking about as this non-linear, dynamic environment where correlations are constantly changing and so forth.

The question is are there ways that we can train people to think in such a way that allows them to have an edge over other people? There’s some investment organizations, for instance, that teach their employees how to play poker, to think about probabilities, to think about pot odds.

How much I should bet given the probabilities in front of me. The question is are those little, small-scale lessons, lessons where we can give feedback, scalable to a larger stage.

I don’t know the answer to that, but that’s a really interesting question. I do think getting into that mindset of how to think about the world properly probably confers some advantage for folks as they get into the more complex environments.

If you’re a low-level employee in an organization, how would you go about nudging the process when you don’t control it? I always thought, intuitively, that the people at the top who tend to, I’m generalizing here, make decisions based on their gut also have the most to lose by implementing a decision process. What they’re losing is their ability to use their opinion to guide the course of the conversation versus a process, which may run contrary to that, which would be an incredibly humbling act. I haven’t run into a lot of people at those levels who are humble.

I think a lot of that is probably, first of all, are you in the right organization, but, second, it can be a communication challenge.

In other words, if you’re a lower-level employee and you see a better way of doing something, you certainly would hope that if you articulated that to your more senior people and you explain the benefits to the organization, that they would see that and make those changes.

For the most part, most firms and most managers do want to improve for the better. I would be optimistic about that. If something’s so set in stone, it’s very rigid.

As you said, maybe there are even incentives for more senior people to leave things the status quo, to emphasize the status quo, that’s a really fundamental challenge. I would rethink whether you’re in the right place for what you want to do.

Rather than saying, “I can’t believe we’re doing it this way. This is really dumb,” you might say something like, “Here’s another way to do it. This is much more constructive. It’ll give us better business results. Let’s try it.”

That's another thing I'll say is that another card to play in that is experimentation. Let's try this way for this subset or for this period of time. If it works out, great. If it doesn't work out, we'll revert to what we're doing before.

If that's not too costly to do an experiment like that, that's really also another very useful way to try to approach that challenge.

The Role of Technology in Decisions

That's interesting. How do you see the role of technology affecting decisions and not only decisions but the decision making process?

It's potentially very, very huge, and for the most part very positive. There's been this almost a tension between you might call them fundamental, the intuitive or the gut feel group and more the quantitative group, the quants and so forth.

Tension has been brewing for 60 or 70 years, but now it's really spilling over big time. The question is to what degree can we use algorithms and computers to make a lot of the decisions.

By the way, one of the chapters in one of my books I talked about...I call it The Expert Squeeze, which is to say it is I think factual to say that we're using algorithms to do mainly the tasks that used to be the domain of humans, so that's interesting.

The question would be something like how might I use technology more effectively. Part of it is what are computers good at? They're good at looking at lots of data. They're good at establishing and understanding base rates.

For example, if you're thinking about an appropriate reference cost for a particular decision, your technology will allow you to access that reference class much more effectively than you could otherwise.

They're not emotional is the other big thing, which is if you set out some thoughtful decision rules or algorithms when you become stressed for whatever reason... it isn't usually stress. It could be emotionally aroused either favorable or unfavourably.

The algorithm may see you to that middle ground which allows you to make quality decisions over time. It's going to be tremendous. It comes to head with these ongoing debates about will we live in a world with no drivers of automobiles or will we have drivers of cars.

Will we live in a world where the airplane you get on will be flown by... effectively, it will be a big drone. It will be flown by somebody in a station. These are interesting questions.

To what degree we'll accept those kinds of things. How fast will it happen and so forth. It's really very rich. I tend to be more optimistic than pessimistic on this, but there are going to be some arm wrestles as we move down this path for sure.

I read that you used, it's called, the Colonel Blotto game with your kids to help them.

Parenting and the Colonel Blotto Game

[chuckles]

Can you maybe explain that? I love this idea.

This is why it's weird to be one of my kids. Colonel Blotto is an interesting formulation from game theory. If you ask people about game theory, almost everybody, at some point, learned about the prisoner's dilemma which is useful because it has real world applications in even things like military strategy or bidding wars and so forth. The Colonel Blotto game was developed in the 1920s originally and was kicked around a bit at the RAND Corporation in the 1950's.

It went into the back water in part because it didn't have that many logical solutions. It's been resurrected in the last 10 or 15 years. It has some very interesting applications.

Shane, I'll give you the most simple version of the Colonel Blotto game. Is that you and I are competing with one another, and we're each allocated 100 soldiers. You have a hundred soldiers, and I have a hundred soldiers. We have three battle fields.

Your task is to allocate your 100 soldiers behind the three battlefields one, two and three in any way you want. I'll do the same thing. Then we do it without communicating, of course. Then we lift the doors and we do battle.

Whoever has the most soldiers in battle one, battle two, battle three wins that war, pardon me, that battle. Then whoever wins the most battles, wins the war. That's the basic idea.

Now, the formulation I laid out with 100, 100 and 3 is basically rock paper scissors. There are some really dumb strategies but for the most part, most strategy is fairly random, so that's not that interesting.

Where Blotto becomes really interesting is when you start to introduce asymmetric resources and expanding battle fields. For example, rather than we both have a hundred soldiers, now I give you a 120 soldiers and I only have a hundred soldiers.

Now, you have more soldiers to deal with. Now, there are still scenarios under which I can win, but you can start to see how that will tilt the advantages for you.

Then we might say, "Well, instead of three battlefields, let's have five, seven, nine, 11 or what have you." What's interesting is it sheds some light on how you might want to compete in various contexts.

The simple rules, by the way, is if you are the stronger player, what you want to do in a hand-to-hand competition, what you want to do is simplify the game. In other words have as few battlefields as possible so you're almost assured that your skill will overwhelm that of your competitor, your resources.

If you are the weaker player, what you want to do is add battlefields. You want to play across as many domains as possible to dilute the strength of the stronger players. The application of that underdog strategy might be instead of going toe-to-toe on warfare, it's a guerilla tactic.

In sports, instead of trying to go play head-to-head, you might try trick plays or different formations that are unfamiliar to the stronger player.

In business it will be disruptive innovations, so trying to go after the incumbent, again, head on. You try to circumvent. There are some practical applications of the Blotto game that can be really, really very rich and very interesting.

Once you explain it to people, they get it. What's beautiful about Blotto is it's all been mathematized now and leads to some very interesting and beautiful conclusions.

Good behavior in your house gets you more soldiers?

No, this is most like squabbling about dumb things. Instead of doing rock, paper, scissors which I what I would usually have them do, we do Blotto because it's a little bit more interesting. [laughs] We keep it very simple. [chuckles]

Helping Kids Learn to Think

What other tools do you use to help your kids learn how to think? That's a subject that people are really interested in. It goes to the broader question of how do we teach people how to think?

The first thing is to say I'm a big believer in the Carol Dweck work on mindset. The first thing is, in our household, we never emphasize outcomes. We only emphasize effort.

For young people in particular is to do well on their effort. Whether that effort yields good results or bad results, the effort is the point of emphasis.

That can be confusing for kids because they think, for example, grades, a particular test or assessment is really giving them feedback about whether they're doing well or not. When you say, "You've done well on an assessment but your effort was lacking," that's a hard lesson to hear for the kids.

Likewise and more encouragingly, if you see your kids worked really hard and do quite poorly, you can give them a pat on the back and say, "I know that you worked hard on this. That's what I really want to see." That's the first thing.

Another aspect is to make people aware of thinking about the world in a broader sense so opening up different points of view. If a kid of mine will express a particular point of view on something, what I'd like to do is to get them to think about alternative points of view and maybe have some ways to think about that. That's constantly always thinking about that. Then the third thing is I've had particular situations where we would do fun bets to try to teach them a lesson.

I'll give you an example that's a funny one. It's a few years old with my oldest son. This is a 2007 World Series. It was Boston Red Sox against the Colorado Rockies. He's in his mid-teens or something. He comes to me and says, "I'm feeling it. The Red Sox are going to sweep."

I'm like, "Do you have any money for that?" He said, "Yeah." I said, "All right. Here's the bet I propose to you is if they sweep, I'll pay you $20. If they don't sweep, you pay me five."

That...that, inherent in that bet that I've offered him is a probability of them sweeping. By the way, this is one of those bad outcome for me. [chuckles] The way it works, if you work out the math of it, the probability of a sweep is probably somewhere between.

If you're super generous, 18 percent, more likely 12 or 15 percent, something like that. I definitely had the better of that bet, but, of course, they did sweep. Of course, I'm handing over my $20 and honoring my bet.

I said to him, "This is a teaching moment because you realize that you won this bet and you're feeling good about that money in your pocket. If you make this bet over time, you're going to lose. Here's why it doesn't work." That's an example of how to explain the math of it. He got that.

Last thing I'll say is, I'll mention this quickly, this is the stuff we talk about from time-to-time at the dinner table. My youngest son was in seventh grade and had a tutor working with him on some math work.

The tutor came up to me afterwards and said, "Mr. Mauboussin, I have to mention it's really quite unusual that I gave your son the Monty Hall problem, and he knew the answer to it." [laughs]

[laughs]

He's like, "Most 13, 12 year olds don't really know the answer to the Monty Hall problem." This is one of these little math problems. The reason he knew the answer is because we had talked about it a few weeks before.

The answer to the problem is very counter intuitive but we walked through why the answer was what it was. We pulled up a simulation on the computer.

Beyond just understanding what you should do but really understanding the concept so all those things. That's a long answer. By the way, I also try to model it. If I'm making decision, let me explain how I might think about this problem.

I never tell my kids what to do. I do tell them things to do like around the house. When they're making decisions, I mostly try to stick to recommendations versus telling them what to do. I want them to think for themselves. I'll say, "I'm going to give you some things to think about.

These are some ideas or recommendations that may be helpful in your process." They probably know where I'm coming out on things. Rather than saying I'm going to decide on your behalf, I'm going to let them think about it and try to give them some guides for their thinking.

Fostering Open-Mindedness

I like that a lot. You mentioned open mindedness. How do we go about fostering that in adults, not necessarily children, but you're in an organization ande've determined through the Good Judgment Project that part of what makes a good predictor is being open minded and being willing to change your mind. How do we go about fostering that type of behavior?

It's really hard. Obviously, this is part of an element of personality. I don't want to say it's immutable, but there's an element of this. It's going to be more natural for some people than others. That's the first thing to say.

If you find someone who's naturally not open minded, it's going to be a struggle to try to change their behaviors. That said, it is. It's this constant point of view...By the way, you mentioned Tetlock, the Good Judgment Project.

They've done really beautiful work. Part of it is even things like if I want to be...I mean this is fancy language, but if I want to be a Bayesian updater, in other words, what the Bayes view is, I have point of view on something prior and new information comes in, I should update my probabilities based on the new information.

How good are we at doing that? It's extremely difficult. Even if I get you to move in the right direction, I often can't get you to move the appropriate amounts so on and so forth.

Part of it is revealing alternative points of view and trying to be open about them in describing those and suggesting how those things might be other solutions or things that should be considered carefully. I don't know what else to say.

Shane, you and I share this enthusiasm. I do think that the willingness or encouraging people to read across disciplines also, by definition, almost always opens people up to different points of view. That can be very helpful. You have to make concerted effort to expose yourself to different ways of thinking.

Part of it is going to be hardwired probably. Part of it is putting people in an environment where they're going to be exposed to various ideas. Those are not only welcomed, but they're also encouraged.

Books that Influence

Let's wind up with three questions that I'm going to try to ask everybody, at least for the start, so we'll see how this goes. What book influenced you the most in your life, and why?

That's too hard to answer one, but I can mention probably a handful of them that were very influential. From a business point of view, certainly the book written by my mentor, Al Rappaport, called, "Creating Shareholder Value," was enormously influential.

CREATING SHAREHOLDER VALUE: A GUIDE FOR MANAGERS AND INVESTORS
BY AL RAPPAPORT

He's a dear, dear friend. We are collaborating on a project now, so that would be one. In terms of thinking, probably three books for me. One is Dan Dennett's book, "Darwin's Dangerous Idea," and I'm a huge Charles Darwin fan.

DARWIN'S DANGEROUS IDEA: EVOLUTION AND THE MEANINGS OF LIFE
BY DAN DENNETT

But this is this idea of how evolutionary thinking should permeate almost everything you think about. Dennett, it's a fascinating book. Another one I would mention is E.O. Wilson's book, "Consilience."

CONSILIENCE: THE UNITY OF KNOWLEDGE
BY E.O. WILSON

Consilience really means the unification of knowledge, but the plea that Wilson makes in this book, to which I'm deeply sympathetic, is that many of the problems that we face, as individuals and societally, are problems that are going to be at the intersections of disciplines.

It's simply not enough, now, for us to use one discipline to try to solve problems. We need to bring people together, to think across those intellectual barriers. The third one which has also been a very big part of my life is Mitch Waldrop's book, "Complexity."

COMPLEXITY: THE EMERGING SCIENCE AT THE EDGE OF ORDER AND CHAOS
BY MITCH WALDROP

This really documents the birth of the Santa Fe Institute, but is intertwined with a lot of stories about complex adaptive systems, and that whole way of thinking. For me, that was a huge revelation.

It clicked into place as I was trying to contemplate, think about things like markets, or economies, but as a mental model, extremely fertile to get you to think about all sorts of systems out there, be they organizations, businesses, markets, what have you.

Things like the wisdom of crowds, all those ideas, they naturally flow from looking at the world through the lens of complex adaptive systems.

What book is on your nightstand right now?

Right now I'm reading Laszlo Bock's book called "Work Rules," which I love. Bock is the, I don't know exactly what his title is, but he runs the human resources effort at Google, and has been extremely innovative.

WORK RULES!: INSIGHTS FROM INSIDE GOOGLE THAT WILL TRANSFORM HOW YOU LIVE AND LEAD
BY LASZLO BOCK

Google itself has been extremely innovative, but Bock's been leading some of that charge, to think about the policies around managing people much more effectively than most organizations. What I like about it in particular is it's very analytically driven.

And it's also been...you talk about open-mindedness, very much of a learning process. Not only does he share many things that they do very well, he also talks about the bumps along the road, some of the mistakes they made, and how they corrected those.

That's a topic in general I'm very interested in, is how do we think about finding the right people, how much time do we spend hiring, how much time do we spend evaluating people, and so forth. That's what I'm reading right now.

That's a fascinating subject. One of the ways that I find new books to read is always in the back, the bibliography, and recommendations from the author, in terms of where he or she got the sources for what they're doing. I was thinking one of the parts of "The Knowledge Project" would be asking guests who I should interview next, in their opinion, to be on The Knowledge Project.

You're asking me? There's so many people, but a couple of people come to mind. Look, one of the books I really enjoyed the most in the last couple of years was Ed Catmull's book, "Creativity Inc."

CREATIVITY, INC.: OVERCOMING THE UNSEEN FORCES THAT STAND IN THE WAY OF TRUE INSPIRATION
BY ED CATMULL

So how I have enormous respect for what they've done at Pixar. If you read that book, Catmull talks about how did you generate diversity in an organization, but also have a common mission.

He also talks about a couple of restarts, so situations where he somehow had a sense that they were drifting away from their mission, and then he was able to make some changes, to try to bring that back into focus. That's one.

TALES FROM BOTH SIDES OF THE BRAIN: A LIFE IN NEUROSCIENCE
BY MICHAEL GAZZANIGA

The other one I'll mention is a book I recently read, is Michael Gazzaniga book, "Tales From Both Sides of the Brain." I find this to be...Gazzaniga's a neuroscientist at UC Santa Barbara.

And is known, for over 50 years, for his extraordinary, fascinating, research on split-brain patients, people where there's a section of the corpus callosum, the allowing for the analysis of what modules work in your right and left hemispheres.

That, to me, is another very, very fascinating area, in particular, this module in our left hemisphere, which he's dubbed the interpreter, this module that attempts to close all cause and effect loops. For heaven's sakes, we're all about narratives in our lives. As humans, we're all about causality.

By the way, that's one of the reasons we struggle so much with understanding statistical thinking, and that book is absolutely, it's a fascinating read. The research is, to me, is extraordinarily interesting, and also very revealing of who we are and how we think.

Thank you. Michael, this was fascinating. I appreciate having you on the show.

My pleasure, Shane. It's awesome.