

Ed Thorp on How to Think for Yourself, How to Be Inner-Directed, and The Dangers of Investing Fads

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Interviewer: [Music] Thank you. [Music] Ed, welcome back to the podcast. It is so nice to see you again and thank you for taking the time.

Ed Thorp: Pleasure to be here.

Interviewer: I thought that we could start with a few of the points that I had specked out for our first conversation, and I want to recommend to everyone, if you haven't heard our first conversation, we cover a lot of your bio, a lot of your background, and we get into many, many topics. And we'll create a short link, so if you want to listen to episode one, just go to tim.blog/Thorp, t-h-o-r-p, and you can listen to the first episode. We'll try not to have too much overlap in this. So let's start with the topic of investing, and specifically the value of long-term thinking and/or the price of short-term thinking, and perhaps we can begin there in any way that makes sense to you.

Ed Thorp: Well, short-term thinking is what benefited me when I first investigated the markets. There were people who bought common stock warrants and held them, and when the warrants only had a couple of years to go, they had much less value than they had many years earlier, but the people who owned them didn't seem to recognize that. So these warrants were vastly overpriced with around two years to go. So I discovered that, and that's how I first began to cash in with an edge in the marketplace.

Interviewer: Could you define, just for people who may not have familiarity, the common stock warrants? What is a common stock warrant in this context?

Ed Thorp: A common stock warrant is a certificate issued by, or a security issued by, a company, typically a claim on its own shares. Sometimes the companies issue them on other companies, and they have shares in the treasury which they will give up to you if the terms of the warrant are realized. And the warrant is basically like what people know as a call option today, and they were the granddaddy of the whole listed call option movement, so they led to very big changes in the securities industry.

Interviewer: So you benefited from short-term thinking, or at least awareness of short-term implications. What are some other examples of, or maybe combinations of, short and long-term thinking? How would you suggest people think about that?

Ed Thorp: Here's an example from real estate. I used to have a friend that I walked with quite a bit, and he wanted to sell his house around 1989 or 1990. And at that time, he could have sold his house for, I believe it was 3 million, and he wanted to get three and a quarter million. And of course, it was a housing downturn, and I said to him, "Look, get rid of the house now, use the money and invest it." Well, he wouldn't do it. It took 10 years before he could sell his house and get his price. Meanwhile, this is short-term thinking: he wanted to hold out for a little extra money, and he was willing to hold out however long it took, and he didn't understand that by holding out for the extra money, he was tying up his capital, he was having an opportunity cost, and he was missing maybe a multiple of two or three in the stock market over the next decade. So it cost him tremendously. The quarter million that he went for probably cost him six or eight million.

Interviewer: Why do you think humans in general—but let's look at it within the sphere of investing—why people are generally so poor at taking the longer-term perspective, or at least considering alternatives to that type of short-term focus?

Ed Thorp: Well, you know, I talked to all kinds of people off and on, I have through my life, and what I found is that most people seem to be focused on what's immediately around them and what's happening then. For instance, I know a very talented woman who is a lawyer for a charitable organization, and she's been in this job for over 20 years, and she is brilliant, she does hard work, and she wants to do good, but the organization is terrible in the way they're managed. So she's a victim in a high mental management position, and she needs to take her talent and go somewhere else. But getting somebody to actually make that uncomfortable transition is very difficult, even though for an outsider it's totally obvious. So a lot of people, when it's involving them, they can't see clearly; when it's involving one of their friends or acquaintances, they can generally see a lot better, or think they can.

Interviewer: Let's segue—because I think this may be complementary to what we've just been discussing—to numeracy. And perhaps we could begin with a definition of terms, but it strikes me that this is one of the most valuable topics that I could ask your help in unpacking and exploring. Where would you like to begin? I mean, we could talk about numeracy versus its opposite, we could talk about the fundamentals or basic numeracy. Where would you like to begin a chapter of conversing about numeracy?

Ed Thorp: I'm going to go back to 1960, when I was teaching at MIT, and I went to a wonderful lecture in their big Kresge Auditorium, a public lecture, and it was on the topic of "The Two

Cultures and the Scientific Revolution" by a well-known Englishman named C.P. Snow—I think Charles Percy Snow, but I'm not positive about that. And yeah, there are a lot of brilliant people on stage, and what the topic was was how many people, really accomplished people in the humanities, don't understand much about science, but there are a lot of first-class scientists that are very good in the humanities and lacking elementary numerical skills or comfort with it. And I'll put in that thought statistics and probability and game theory and a whole lot of other things that have become much more important in the last many decades. So when you, for example, talk to an attorney, most often they're really good with words, but they make elementary numerical mistakes. So I get a decimal place in the wrong place and they won't realize it. That's one illustration of the sort of things that happen. I think there are some fundamental things that you miss if you read a news article that's full of numbers. The numbers will often be presented to ridiculous precision, like 63.8 percent of people polled says such and such. When you think about the poll, what does that really mean? It means somebody out there copied down some stuff and did a division and came up with 68.3 percent, but it doesn't mean that that poll represents what people really believe. It might have been badly worded, the sample might be too small, the sample might have been biased, and so forth. So you might read it if you're not a numeric person and think that 68.3 is pretty good precision. Well, the real answer ought to be something like somewhere between 30 and 80 percent of people believe such and such. We think, I'm going to put it that way, you can go on to the next poll. Another fundamental thing that people do: they mix up, they don't understand the difference between averages and the way things are distributed in a population. An example to drive the point home: there are 100 people in a bar and somebody knows who they are and says, "Gee, the average net worth of the hundred people in the bar is 100,000 each." An hour goes by, one guy walks out of the bar, another guy walks in, the guy checks again, he says, "The average net worth has gone to a billion and a half." What happened? Well, one guy walked out and either Jeff Bezos or Elon Musk walked in. So the average may tell you virtually nothing about the distribution, and we deal with people often by thinking about averages instead of dealing with the individual person and all their unique qualities and where they might be in the distribution. So when I meet somebody, I don't think about them as being in any particular category; I think that as far as I'm concerned, they're my equal and they know things I don't know. I probably know things they don't know, too, but I can learn from them, and I usually try to hear what they have to say instead of telling them what I have to say. This is today's an exception.

Interviewer: Well, you are in the hot seat, so I think you're certainly allowed to answer more and say more than I do in this context. If we look at, let's just say, the example you gave of how averages can be misleading—and I think people listening, even if they are, let's just say, they are smart, educated, but haven't had any particular training in this domain and they're unsure of how to train themselves or develop this type of awareness—I'll make a recommendation. There's a book called "Bad Science" by Ben Goldacre, who's a, I believe he's a UK physician, excellent communicator as well, and there are a number of sections in this book that I think are valuable for

separating, for instance, absolute versus relative risk. For instance, you might see a headline, as you pointed out in the newspaper, that says something like "Bananas double your risk of colorectal cancer," something like that—I'm making this up, of course—and people might panic and stop eating bananas. But if the risk is one in a billion and then it goes to two in a billion, the risk itself and how you should consider it in terms of your lifestyle choices is pretty minimal. So there are certain resources like that book that I'm aware of, but how would you suggest someone train themselves to become more numerate, or are there other basic concepts that you would suggest they become aware of?

Ed Thorp: There are two things that I would encourage somebody to start with. One of them is to understand elementary statistics and how it works. Nothing complicated. There's a series called Schaum's Outline; it's a sort of like a crib book for college courses, and they have a whole set of topics, and one of them is on statistics, which I just gave to one of my daughters because she was interested in this exact conversation we're having. How do you spell Schaum? I think it's S-C-H-A-U-M.

Interviewer: Got it.

Ed Thorp: You'll find other simple college outline books for statistics, and what they do is they get down to how to do it as opposed to a lot of theory and math formulas and that sort of thing. They should give you a few basic formulas and they show you how they work, and that's really all you need to get started. And then if you're curious and like it, then you'll teach yourself more; if not, what you have will serve you well. That's the first thing. The second thing is elementary mental calculations. People have their little Apple phones or calculators, and they can find all kinds of things out on that, but if they hit the wrong key, they won't often know that what they've gotten is garbage instead of the right answer. And you can figure out a lot of things in your head very easily if you get used to it. So I would learn how to multiply small numbers in my head if I were someone, and probably how to make other calculations, like in finance, compound growth calculations in your head are very useful. And my book has a little section about that called the Rule of 72. That's only the tip of the iceberg, but if you learn that and you like it, you can go a lot further. And another pretty neat thing that I've come across is, if somebody asks you what day of the week was Fourth of July 1776, for example, you can figure it out in under a minute in your head. It turns out to be a Thursday. So this is a well-known thing in the literature; I happen to stumble across it for myself, but that thousands of people figured all this out long before I did. But I find it's very handy, and I tend to remember the calendar that way. I don't actually look at calendars.

Interviewer: But if somebody says, well, you know, what day does Christmas fall on, I might say Sunday, after thinking about it for a little while, but I don't have to go tap my calendar and find out. Do you know what that method is called of determining the day of the week for a specific

date? I remember Michael Conway, who was a mathematics professor at Princeton, could do this also very, very quickly. But if someone wanted to learn how to do that, how would you suggest they'd learn how to do that, or is there a particular name of the method?

Ed Thorp: There is, and I'm trying to think, since it was discovered independently by many people, I'm not sure it has one name. But I'll just tell you briefly how it works. It's great for every date in a month. Like, well, let's see, today is Tuesday, June 14th, 2022. So 14 is the day number that you assemble. There's each month has a number of its own. The number for June is four. Where this comes from requires a little investigation, but the people who write the books explain it all to you. You just have to memorize how it works. So you have 12 month numbers, and then every year of a particular century has a number that goes with it, and there's a way to figure that out pretty easily. And then every century has a number, and so the calendar repeats every 400 years. So you only need four century numbers, and then it rolls over and repeats again. So you add up all these numbers, you throw away sevens, and see what's left. And if, let's say, a three is left, then it's a Wednesday. If two is left, it's a Tuesday, and so forth. This was made pretty well known to people quite a long time ago, and a movie called Rain Man, right? Have you ever heard that movie?

Interviewer: I have, I have absolutely.

Ed Thorp: He had two super skills. One of them was to deliver the day of the week for any calendar date, so we know how to do that. And the other one was to count cards at blackjack and win, and we know how to do that. It was a mere chance. My wife and I were flying out on an airplane, first class, heading from, I think, LA to New York one time. We looked across the aisle and there was Dustin Hoffman and his retinue, and I thought about, I said, "Should I go over and tell them that I know how to do all the Rain Man stuff?" No, don't bother him, having a good time over there.

Interviewer: So let me mention a few things just for people who want to explore this. So the first is, we will find links to this particular method and I'll put them in the show notes at tim.blog/thorp. I'll just put them with the first and this now second episode. I want to come back to the rule of 72 in just a moment because I think that'll be fun to just explain briefly for folks. Rain Man, so the basis of Rain Man is someone named Kim Peek, P-E-E-K, someone named Kim Peek, P-E-E-K, who also had some pretty astonishing capabilities. He could read a book by flipping the pages, and the fixation points of his two respective eyes would be on the two respective pages in a given spread. So he had some remarkable capabilities. But a lot of these capabilities, as you pointed out, can be learned and learned very quickly. For instance, if you want to multiply a two-digit number by 11, it can get a little more complex than this, but if it's 34 times 11, it's 374. How do I know? Because it's 3 plus 4, 7, you stick it in the middle, and it's really straightforward. So you can develop these heuristics, these shorthand methods. And another, I'll just give a reference to another guest, Ed Cooke has been on this podcast. He is, or was, a

competitive memory champion, so he could memorize a shuffled deck of cards in 60 seconds or less, that type of thing. And we talk about various methods and mnemonics for memorizing long strings of digits, things like that. So people can check that out and I'll link to it in the show notes. Ed, would you mind elaborating on the rule of 72?

Ed Thorp: Sure, that's well known in real estate circles. If you want to know how long it takes something to double, how many years or how many periods, let's say you take the interest rate per year. Let's say suppose the interest rate is eight percent. If you divide 72 by 8, you get 9, and so the doubling time for eight percent compound growth is nine years. Let's suppose that now with eight percent the rule is very accurate. If you use the numbers below eight percent, the doubling time turns out to be a little shorter than the rule tells you. And if you use numbers above eight percent, it gets a little longer the further away you get above eight percent, but it's pretty good for a first pass. For instance, there's a house on the beach that I looked at in 1974. And so that was 48 years ago. Can it be that long?

Interviewer: Yeah, your mental mathematics can be better than mine. I'll accept 48.

Ed Thorp: Okay. So you can use rules like the rule of 72 and their offspring to use that time period to see what the compound rate of growth was for investing in that house. The house now sells for 300 times what it did then, so you end up with a pretty good rate of return. When you apply these rules, anyhow, the rule can be used to calculate all kinds of stuff like that. And the easiest way to use it is to calculate doubling things. For instance, let's say that I invest in the stock market and long term it goes up 10 percent a year long term, but it might be, there might be bad, very bad periods and super good periods that mix together. But over a very long time, if it goes up 10 percent a year, then I can figure out how long it takes to double, and it'll be about 7.2 years. A little less because the 10 is higher than eight percent. So let's call it seven plus a small amount. What happens if you let it run for 100 years? Well, 7 into 100 is about 14. That's 14 doublings. And one of the handy mental things that you'll find is very useful is to know that the doubling powers are 2, 4, 8, 16, 32, 64, 128, and so on. And for 14 periods, we're looking at about, well, 10 doublings is about a thousand, four more is about another 16 more multiplying, so you get up to around 16,000 times. So that's what the nominal growth at 10 percent over a century is, 16,000 multiple. So it tells you something about the power of compounding and why investing for the long term really pays off. It also tells you why wasting money really pays off in the negative way. It's a small example, just at the low end. Suppose a guy buys two packs of cigarettes every day, maybe he spends, I don't know what that costs, I don't pay attention to that, but let's say it costs 15 for two packs. If he put that 15 a day in the bank and then every few months went and bought an index fund in the stock market with the money that he'd saved up, in maybe 60 years or so, he might have half a million dollars just because he gave up the two-pack-a-day habit. You'd also probably have seven more years of life and you'd probably also feel a whole lot better. So this is just a little thing that you can change with a huge long-term impact, but short-term thinking said, "Well, you

know, it makes me feel good, I'll just have another pack today, another pack tomorrow, I'll get over it sometime."

Interviewer: Well, let's come back to your friend. Just to use, I suppose it's not entirely hypothetical, it's a real case, but your friend who could have sold his house for three million but wanted to hold out for the 3.25 million, or however much it was, and it ended up taking 10 years. So you're dealing with, or we are dealing with, he or she is dealing with knowns and unknowns in whichever path they take in the decision tree, whether it is hoping for the extra 250k in an unpredictable real estate market, but also dealing with unknowns in putting, let's just say, the three million into the stock market. Because as you said, there could be a bad stretch, there could be a really bad stretch of any number of years. How would you, if you had been having a conversation with this friend and they listened to your advice and they said, "Well, I read a book on indexes and yes, I understand S&P 500 and retained earnings and over time X, Y, and Z over the long term, but what if I put it in and I have five, six, seven bad years, or however many bad years?" How would you walk them through the decision process, understanding that we can't control outcomes necessarily, only the decision process? But if they voiced that, they said, "I'm open to it, but I'm afraid that I'm going to put it in and then the stock market's gonna crash because there'll be some terrorist attack or who knows what," how would you walk them through making the best decision given the knowns?

Ed Thorp: I tell them that if you put it into something risky that has good long-term history and good long-term prospects, then you're going to get shaken up a lot along the way. So you have to be prepared to hold for quite a long time to ride out the speed bumps that you're going to cross. If you're not prepared for that, then you're going to make all kinds of bad decisions along the way, like getting out at the bottom. So let me know first whether you're prepared to do that or not. And if you're not, you know, you're on your own.

Interviewer: What would you consider the minimally viable long term? How many years in this particular case, if they said long term? Sure, what's long term for him? He was 50 or so, yeah, and he was still working and he had other assets, so he didn't depend on what happened to this money alone. If it was down, if the market were down by 50 percent at some point, that wouldn't hurt him. He could wait. Some people can't wait, and so those are people that have to do things differently if they don't have enough capital. I was listening to Thomas Piketty talking about his new book, which is very interesting, and one of the things he said was that the poorer part of the country, maybe the lower half, have insignificant capital resources. So if they're out of a job, they've got to get another job right away because they're living paycheck to paycheck. And so they don't have the luxury of being able to make better choices. They're being forced to make immediate choices that aren't good. So this long-term investing advice is for somebody who's not being forced to make immediate choices and don't think that they're going to be forced to do that. So in the case of your friend, 50, still working, would you say the long term that he should be

prepared to buckle in for is 10 years, 15 years? Where would you put that number if you had to peg a number just for the sake of conversation, if you were actually having this conversation with him at the time?

Ed Thorp: Okay, I'm talking to...

Interviewer: A person who's 45 years old, I believe, is that right? Right now?

Ed Thorp: Yeah, I'm close to 45, yes, almost 45.

Interviewer: Pardon me, almost 45. Okay, so I would say look at the rest of your life. How do you project it? I can live to be 80, 90, 100. God, I mean, I hope I live to be the—and I know averages can be misleading, but let's just say the median death age of males in my family seems to be 85 to 88.

Ed Thorp: So you've already outrun that.

Interviewer: I'm hoping to outrun that, so I'm aiming higher. But let's just, for the sake of argument, say 85.

Ed Thorp: Well, if you follow all kinds of healthy habits, which it seems to me that you do, and you're up on the latest things that you believe actually have merit, not just any fad, and you haven't had any major issues, it means you've probably got good genes. So far so good. And you have economics behind your—economics. Wealth is associated positively with longevity, and it's obvious why. I mean, it's not fair, but if somebody has advantages, they can avoid problems that people that don't have those advantages are forced to face. So, anyhow, I would say that the odds of reaching 100 are substantial.

Interviewer: Reaching 100 are substantial. I love this. Yes, I'm certainly—I'm certainly aiming as high as possible. Yeah. So, let's see, what was the question you just—

Ed Thorp: The question was, if we're personalizing this to me—I mean, it may be a little strange to do so, but I'm just imagining a conversation between you and your friend who had the opportunity to sell this home for 3 million, and you're talking about the different options, and one being putting the 3 million into, let's just say, a low-cost index fund for the long term. And your friend turns around and says, "I'm open to it, but I know there are bad stretches." When you say long term, how many years should I be prepared to hold for?

Interviewer: I'm using that as just a chance to clarify for people who may be listening what long-term could mean in terms of absolute years. When do you think you might need the money?

Ed Thorp: In my case, I don't—I wouldn't need that money to pay the bills. You can let it run and run or not. I could. Now, I mean, this gets into some varied terrain just because I think in terms of not just lifespan but also health span. So, am I hoping to build that capital and then, let's say, whether it's gift to family or give to charity, do I want to enjoy it in some fashion while I am still physically capable and able to be out and about and fully capable mentally and physically? I mean, these are certain questions that come to mind for me as well. But the truth is, I would not—I would not need to liquidate that to pay the bills.

Interviewer: Yeah. If you can let it grow to some extent, not spend it down, then you have the luxury of being able to invest for a very long time. But if you need to spend on capital—take a person who has no sources of income but Social Security and they've got a million-dollar retirement fund and they're going to live another 20 to 30 years—maybe they've got to be pretty careful.

Ed Thorp: Yeah. Assume they're not able to or willing to work anymore, and so somebody like that needs a plan that will cause the money to last as long as possible while they're still alive and take care of them. But also, they need to be able to spend at a rate that gives them a decent life. So that's a tricky trade-off. Everybody's different. I would say that the more pressure there is in which you might have to spend down your capital at some future point, probably the less likely you are to try to become a long-term investor in something that's quite risky. There's no one thing that's going to satisfy everybody. It's a well-known problem in financial economics, the lifetime consumption problem. But my view is, if you can get ahead enough so you have enough capital so you're comfortable, then this problem mostly goes away. You just stick it in for the long run at a high rate of return and let it go, and you spend some of it as time goes by, but you don't have to spend so much as to really eat into it.

Interviewer: So let me pause for just a moment to mention and ask a few things. So the first is the Schaum's Outline of Statistics is spelled exactly as you said, S-C-H-A-U-M-'-S, and covers any number of subjects. So I'm excited to dig into that. Someone very close to me is actually going to be taking statistics in grad school soon, and they're very intimidated, so this will be ordered today. My question for you is, to develop more numeracy and basic familiarity with probabilities/statistics—something that comes to mind for me, and this is from recently interviewing a poker player, is that perhaps by encouraging people to play poker or blackjack, you could enable them to absorb some of these principles while having fun or doing something that has an objective outside of just becoming numerate. Are there any approaches like that or that come to mind that you might suggest to people who would like to absorb and cultivate some of these principles and numeracy aside from reading a book on statistics? Are there other games, other activities, anything that comes to mind?

Ed Thorp: There's a mathematician out at the Claremont Colleges named Arthur Benjamin, and I think he has a book called *Mathemagics*, and he also has a course on The Great Courses. I don't know—I haven't followed The Great Courses for a while, but I've seen that he has such a course, and you can learn how to do a lot of math in your head by looking at this stuff. Wonderful, *Mathemagics*, Arthur Benjamin.

Interviewer: All right, I will link to all of that. What I thought we might do next—we were talking about a fairly common and simple example of your friend with the real estate decision. We discussed in our last conversation a number of things related to hedge funds, and there were questions around Citadel, and listeners wanted to know how one might get an edge in hedge fund investing. What would you like to say to that, or any comments you'd like to add to satisfy some of those folks?

Ed Thorp: The hedge fund world has gotten very big. When I was in it, there were only—when I first started, there were only a couple hundred hedge funds. And a hedge fund in its original usage meant a private limited partnership that invests in typically financial products, and it could be things like real estate loans, equities, commodities—very wide-ranging. It's kind of a catch-all for private limited investment partnership. The typical structure is that there are a group of limited partners—there could be 100, 200 of them—and a managing general partner. And the limited partners just collect whatever returns they get, and the managing general partner charges a fee, typically so much per year plus a percent of the returns. So that's the basic structure. And Citadel, that I talked about last time, isn't such a thing. It is a collection of businesses, and only one part of those businesses is the private limited investment fund that I happened to be a limited partner in. So just a clarification on that. Now, the asset class of hedge funds is very large. It's now about 3 trillion dollars, which is like 2 percent of the entire net worth of the United States, and it has perhaps 10,000 or so hedge funds in it. Some of them very large, like your guest Ray Dalio or like Citadel, and then they range in size all the way down from the multi-billion dollar ones down to a few million dollars. And they often start at a small level like that. It's pretty hard to run one now and start it up because of all the costs if it's less than a few million dollars. The hedge fund world used to be a much better place for individuals to invest. Now it's better for institutions. I'll give you an illustration. The hedge fund that I was in for 30 or so years, in the hedge fund part of Citadel, they, in the first, I don't know, 17 years or so, we were making 20-plus percent annualized, net to us after all the fees. That's incredible. It was incredible. Now, it wasn't so good for me because I was taxable, so I might be getting 14 percent, 35 combined state/federal tax rate. But then for an institution, it was a fabulous, tax-exempt institution like a university endowment fund. And then maybe from 2008 to 2015, returns were somewhat less. I don't remember the exact numbers, but let's say they were 14, and now I'm in the 50 tax bracket—taxes went up—so I'm only getting 7 percent. So the market long term is riskier, but it's going to give me 10, and I don't have to do any work. All I do is invest once, I don't do any paperwork, that sort of thing. And so at that point, for me, the market's probably a better choice. But for the tax-exempt investor, they're still

getting 14. It's a wonderful choice. So that's sort of how the hedge fund world changed. For the really good hedge funds, for the not-so-good ones, they as a group have gotten sort of less and less attractive for people. Now, you might say, "Who should invest in hedge funds today?" I would say wealthy tax-exempt investors, whether they be individuals or institutions. They might say, "Well, how many of my listeners have that pedigree?" Maybe not very many. But when you think about all the people who are listening to this, a lot of them are probably on the boards of tax-exempt entities like the university endowment funds, and so they can advise them if they want to learn about this sort of thing and see whether some of these hedge funds are good choices. I might say the collection of all hedge funds together, taken as a pool, are not attractive. About that, as if there were an index, a cap-weighted index to hedge funds, it would not be an attractive asset class anymore in my opinion. But there are exceptions like the Citadel operation.

Interviewer: Yeah. Well, I shouldn't—I said it all—like the hedge fund part of Citadel. The whole business is beyond me. It's, you know, it's like I invested in the Amazon bookstore initially, and Amazon has all these other things. I don't have anything to do with all the other things. As a passive investor, I'm still invested in the bookstore. I'll also mention just in passing that if you were to look at the venture capital industry, let's call it as a whole, it would make a terrible index. They tend, if you were to average it all out, it would perform under the market more times than not. But there are standouts. I wanted to recommend two books, and if you have any opinions on these—actually, I suppose it's more of an author recommendation than anything else—but for people who want to gain some familiarity with the history of hedge funds and what constitutes a hedge fund, in other words, a fund that has hedges versus those that are say unidirectional but nonetheless call themselves hedge funds, etc., there's a book called *More Money Than God* by Sebastian Mallaby that I found very entertaining. And he has written a new book, which I have not read, I believe it's called *The Power Law*, which really delves into venture capital. And there are some striking similarities. So I will just leave those two.

Interviewer: Ed, I would love to ask you next about a few books that I have here in front of me, the titles of that is that were in some notes I had for our last conversation, and it relates to expert advice, predictions, and more. But there is a book here which I've not read but I've heard of before called *Extraordinary Popular Delusions and the Madness of Crowds*. Is this a book that you would recommend?

Ed Thorp: Yes, it was originally written I think back in 1851. I forget who the author is. I, the name Charles Mackay comes to mind, but I don't know if that's the publisher or the author. And uh, you're finding out now, I am. You know, *The Madness of Crowds*, no, you got it. Charles Mackay, *Extraordinary Popular Delusions and the Madness of Crowds* by Charles Mackay, M-A-C-K-A-Y. And I'll say this about it, it's not wholly accurate. I've seen the, it's not wholly accurate. I've seen the critiques and corrections of it, but it's a great read and it gives you the flavor of crowd madness. It might be a good reading for people who are involved in cryptocurrency now, for

instance, or in a GameStop [Laughter].

Interviewer: And I, I will also just mention for folks that there is a looks like a decent Wikipedia page for this book which covers some of the main tenets and anecdotes and stories within it. It was first published in 1841. What would you hope people to get out of this? Let's just say that they are in the midst of buying and selling cryptocurrency and they say, "This Ed Thorp seems like a very bright guy, I'm going to take his advice and read this book." What would you hope them to gain from reading this book?

Ed Thorp: I think the first fundamental thing is if everybody's heard about it already, there's historically at least no reason to believe that you have any kind of edge. Makes sense. You're basically rolling dice or buying lottery tickets. And just as in the gambler casinos where a person does, where most people do not have an edge, you hear stories about lucky winners, metros and more people who want to play, but if you look at all of them as a group, including the good players who actually have an edge, if you look at all of them as a group, they lose. And that's how the casinos survived. If they didn't lose as a group, the casinos wouldn't be there, right?

Interviewer: Well, let's, let's segue off to a slightly, well, completely different subject area, which is physical and mental fitness. We, we covered some of this in our last conversation, but there's certainly more specifics that we can explore here. So just, just to ensure I'm doing my fact checking, are you still 89 years of age or have you, have you already turned a new, a new birthday?

Ed Thorp: Still 89, but getting close.

Interviewer: All right. So I will reiterate for people who didn't hear the first episode, you look like you're 60. It is remarkable, uh, certainly something to aspire to and removes any excuses I might have. And I have notes in front of me with a number of things that I would love to discuss. The, the first is developing awareness. And I, I have a note here about recording or recording your weight. What is your suggestion for people and is this something that you have done yourself?

Ed Thorp: Yes. First of all, I had a relative who was significantly overweight and he, he wished to lose weight. And so I said, "The first thing you do, I'm not going to tell you what to eat or how to eat or anything else, the first thing you do is you get on a scale every morning and you write down the date and how much you weighed and just observe that number and do that day after day." Well, it turned out he didn't really want to lose weight, and so after a while he stopped doing this. And so I got after him to do it again for a while and then he quit again. And his weight would go down and bounce back up and go down and bounce back up. But when he was writing it down, it seemed to alter his behavior and he would, his weight would slowly drift downward. So I've made a habit myself of getting on the scale, maybe not every morning because I don't need to anymore, but for a long time I'd get on every morning and just observe what I weighed. And I've been pretty

well bracketed between 151 and about 158 for as long as I can remember. And if I get near 158, I say, "Well, you know, I don't need that dessert tonight or that beer, we'll have it some other time, or how about a great big healthy salad today instead of a burger?" And it's enough to shift me down. And then I have another little thing that I check. You know, there, there's a simplistic notion of apples and pears in people. I don't know, have you heard about this one?

Interviewer: I have.

Ed Thorp: An apple is somebody that tends toward getting a big potbelly when they gain weight. And I come from a family of apples, and this is not healthy because you get all this fat around your internal organs. So one of the things I put on my list early was never get that potbelly. So all I have to do is I can look down, if I see anything that isn't flat down there, I know I weigh too much. That's another awareness that needs to change things. Those two feedbacks are more than enough to control my weight for a lifetime, and I really have to use them. But anyhow, I would say that a person can develop their own feedbacks, whatever those are, and use them. And measurement is important because you want facts on which to base what you do instead of hopes, beliefs, wishes, so on.

Interviewer: I remember a t-shirt that I was given a long time ago by the director James Cameron. It was actually an original staff shirt for the film Avatar, and the very top of it said, "Hope is not a strategy," which I liked, which I liked quite a lot. And you're weighing, just to get specific, is before breakfast and without clothes, or what you would recommend? Is that, is that accurate?

Ed Thorp: I do two things. When that's convenient, I do that. When it's not convenient, I just happen to go to the scale maybe before a shower in the middle of the day, and I weigh myself and put that down as a little side fact. And of course, I'm going to weigh more in the middle of the day than I did first thing in the morning, so I know that. So maybe I weigh 152 in the morning, but when I put my little side thing down, I might say at 3:00 p.m., I say 154 and a half. So I know that roughly speaking, about each third of the day correspond to each possible meal, I gain about one pound. So I can mentally correct back to the beginning of the day. I don't have to weigh myself every morning if it's not convenient, if I get other feedback.

Interviewer: Right. Absolutely. The whole thing about health and fitness as I see it is you want to do things that are preventative, and you want to make sure you're not missing something important, because it's the things you miss that are going to do more damage than the positive things are to save you. I mean, you can work out and be fit and have high aerobics and so on, but if you're not going in for routine colonoscopies and skin cancer injections and so on, you're leaving a big risk factor open for yourself. So you've got to try to get rid of the risks that, uh, you can cover. Do you have a checklist for yourself, or how do you ensure that you are not missing gaps or blind spots?

Ed Thorp: I think about it and I talk to people and I pick up information all over. My list expands. You know, there's a, there's a lot of, a lot of topics on the list. Here's a physical fitness of various kinds, there is mental health, there's, uh, supplements, which I don't take much of because the evidence isn't strong enough in my mind for them. Other people will disagree, but I'm not heavy on supplements, only if I think they've really been proven. One thing that I found that really worked well was, uh, bone supplements, and I was able to reverse osteopenia and turn it into excess bone after several years.

Interviewer: Bone supplements meaning, say, calcium, magnesium, K2 blends, things of that type?

Ed Thorp: Yeah.

Interviewer: I have a few bullet points that I would love to hear you expand on. And actually, before I get to that, I should say that it is incredible how much behavioral change can subconsciously seep into someone's life, also consciously, but I, I find the subconscious side especially interesting if they simply begin to measure, whether it's body weight or body composition, which is partially why self-directed observational studies or at-home clinical trials or experiments are so difficult to design well. Because you can, you can say to someone, "All right, you're going to follow the Mediterranean diet, keep all of your other variables the same, don't change anything else," but rarely is that going to be the case. So that's just a side note. One more factoid for folks: Mr. Rogers was also very diligent about weighing his body. I think it was every day when he swam, and his magic number was 143. He tended to stay within a few pounds of 143. There are a few bullets here I would love to hear you expand on. The first is, "Limit alcohol to a total of a few drinks a week." So this makes sense to me. Do you drink alcohol yourself? If so, what do you drink?

Ed Thorp: I typically drink maybe a half a beer three or four times a week, and maybe when I have company, a glass or two of wine. That's pretty much it. And I think it's too much.

Interviewer: You think that's too much?

Ed Thorp: Yeah.

Interviewer: Do you have a favorite beer or favorite wine that you tend to consume if, if you're rationing in that way?

Ed Thorp: Well, I never drank beer until a few years ago, but we went over to Ireland and we visited the Guinness Brewery, which has a long, colorful history, really interesting, and the stuff

was really great. So I did not see that coming.

Interviewer: Wow. All right. So you picked up beer a few years ago, so the 85, 86, something like that?

Ed Thorp: Yeah.

Interviewer: I love that. So I, I probably need to go in the opposite direction with some of my alcohol consumption, for sure. There are no breweries. Yeah, yeah. I, I'm actually pretty good these days. My girlfriend doesn't drink very much at all, and she's like 20 pounds, so we, we tend not to drink too much. One is, "Reduce stress." Now, this is also something that at face value I think will make sense to a lot of people, but begs the question of specifics. How do you reduce stress? What have you done to reduce stress in your life that you've found to have a meaningful impact?

Ed Thorp: One thing that really works for me is listening to music, and also another thing is just going for walks and thinking about whatever. My mind just kind of runs free, and I'll maybe, uh, maybe after this conversation I'll go for an hour walk and I'll think about the things we said and, "Oh, well, I wish I said, but forgot," so on.

Interviewer: Or is there a type of music that you gravitate towards?

Ed Thorp: I happen to like classical, but I also like guitar, and I like a lot of old songs and, uh, music from the movies. It reminds me of pleasant times I've had. I like stock jazz, too.

Interviewer: I do too. I've developed a real predilection and this eagerness to consume more jazz and blues. I'm not sure [unclear].

Interviewer: Maybe it's my proximity to a lot of that in Austin and recently spent time in New Orleans, but I'm on the same page with you. There's a bullet here: avoid unnecessary risks. Could you expand on that? What type of risks have you trained yourself to avoid?

Ed Thorp: Well, really everywhere. So I have a laundry list of them that gets longer and longer as I think about them. Here's a for instance: COVID. Good current example. People are wandering around now mostly without masks and they're acting like it's over, but I don't see any reason to catch it. It's not going to do any good if I do catch it, especially being 89, high-risk group. The death rate there is probably close to 20 percent in the 89-year-old category. Now, I'm healthier and I probably have better medical access than most people, so it might be only two or three percent for me, but that's too big. So I try to be careful: avoid crowds, no commercial travel unless it's forced upon me and you just can't avoid it. The key thing is don't share air. The key thing is

don't share air with people that might possibly be ill with COVID, and some of them don't know it. So, anyhow, that's an avoidable, a largely avoidable risk if you're willing to limit your activities. Now, what I'm hoping is that we'll have a broad spectrum antiviral that will allow us to get a shot and put an end to all this, but government seems very slow in getting its act together and there's no telling how long it's going to be. That's one risk.

Another one is travel. Let's say that I want to go from Orange County, California to New York City. I could fly out of Orange County airport non-stop to Newark and take a somewhat less convenient for me flight, or I could connect, land somewhere, take off again on the way, a so-called direct flight, but it's not non-stop. Or I could go to LAX and get all kinds of flights with much greater time ranges. If I go to LAX, I'm going to spend 40 plus miles in a car two ways. The risk of driving in a car is roughly 100 times per mile than it is flying an airplane, which is a gigantic difference. Now, airplane risk, but most of the risk is takeoff and landing, so I won't take a direct flight if I can help it because there are more takeoffs than landings. So my optimum is to go to Orange County, take a somewhat less convenient flight, avoid takeoffs and landings, and so there's a small risk reduction. You might say, "Well, how much risk reduction is there?" It's maybe, you know, a chance in a million, but with a little thinking I can get rid of it.

Here's another example. I don't know if we talked about this before or not. It was about, sorry, I heard by Benjamin Stein on his program. He is the son of Herbert Stein, famous economist, and Benjamin Stein himself is an economist, but also he's partly comedian on purpose. He and Milton Friedman, a well-known economist, were walking in New York City and they came to one of these cross streets where the light was red but it didn't seem like anybody was going back and forth. So Benjamin Stein stepped off the curb and Milton Friedman said, "Benji, wait a minute." And Benjamin Stein said, "No, it's safe to go." And Milton Friedman said, "You know, Benji, probably it is, but maybe it isn't. Why should I risk the rest of my life to save 20 seconds?" And that's the sort of decision that a lot of people don't make. They'll run that red light because they can just barely get through. Once in a while, one of them gets T-boned. So the risk is everywhere like this, and you can, if you think about them a little bit and make it a habit, you get rid of piles of them.

There's a book called *The Unthinkable*, I think, by Amanda Ripley, and she talks about horrible things that people, horrible situations people have found themselves in. For example, the Twin Towers in 2001. And people made various decisions, some of which saved their lives, others caused people to lose their lives. So she has three steps: denial, where "this can't be happening"; deliberation, where you say, "Well, you know, it is happening, what am I going to do?"; and then there's decision, "Okay, I'm going to do something now." So I kind of like, I'm a little more proactive. I say that for me there's awareness, and then there's analysis, and then there's action. So what kinds of things could happen? Well, besides the Twin Towers, you might find yourself in a burning theater, you might find your building shaking from an earthquake, you might see, we hope none of these things happen, you might see the sky light up like a thousand suns and you

figure out that there's been a nuclear detonation. So multiple things, or a huge volcanic explosion somewhere, or a tidal wave, you know, a million-to-one, very remote things. But then there are things in everyday life. Somebody starts shooting here in the crowd, you have little time to decide what to do. I mean, what I've done, drop to the ground first thing and then figure out what to do next because you're a small target, and then see how you can help. But people have these things suddenly thrust upon them, and if you have some thought about how you'd act in some of those things, like I know what I'd do in my high-rise office building if there was an earthquake, if you have some idea of how you'd act ahead of time, it helps prepare you so that you can probably have a better chance of coming out of it with less loss or damage. So that's another approach for a big risk, the sort of things most people don't like to think about and prefer to think about healthy things.

Interviewer: You know, it's having been through a number of natural disasters and also crisis situations, for instance in Austin, Texas, but also in San Francisco, it is always astonishing to me, and maybe I just have a healthy, sometimes unhealthy, degree of paranoia about low-probability events, but if you look at even recent history like the Loma Prieta earthquakes in San Francisco or you look at the freezes in Austin that paralyze the city, prevented transport trucks from delivering goods, ended up disrupting water supply, I am amazed how few people have a week or two worth of backup water. It's just an example of something that you can remedy with a few hundred dollars, you know, less than they spend on a given weekend at restaurants, but just how few people have that type of contingency planned for even after they have had a really close call. So I remember in Austin, deep freeze lasts a week and I had some involvement during this entire thing with a sort of disaster response, and it was pure luck that we had the thaw when we did. If it had lasted another day or two, it would have been catastrophic in terms of lives lost for a number of reasons. But even after that happened, I spoke with a number of acquaintances who had been in dire straits and I asked them if they had bought backup water and a few other things and they said, "No, that was a one-in-a-hundred-years type of storm, that'll never happen again." Now, this is puzzling. Are there any other risks from, say, an exercise perspective or a behavioral perspective, a day-to-day kind of week-to-week perspective, that you have removed by doing this type of analysis for yourself? Things that you used to do that you no longer do?

Ed Thorp: Yeah, I used to run on roads when I was training and I soon changed that because I read about what the statistics were for runners being hit by cars on roads. Even if you run on the side in the bike path, it's too much risk. So I went off-road, and now when I walk, it's the same thing. I don't walk on roads, like I walk off-road, except in a community where there's basically no action and I can see and hear everything.

Interviewer: What is the age guessing experiment?

Ed Thorp: Oh yeah, that was a funny thing about, I think when I was about 82 or so, people kept

saying, "Gee, you look like you're 60." I said, "Well, that's very flattering, but you know, it's nice to hear. I wonder how much truth there is in this. Can I measure this? Has this got any fact behind it?" So what I decided to do was approach strangers at convenient places, like a waiter in a restaurant where I'd never eaten before, and I'd say, "I have five dollars here. I'd like you to answer a question about me, assuming you know nothing about me, and if you are close, I'll give you the five dollars." And the question was, "How old am I?" within five years. So I did this with a wide range of people, about 20 people altogether over several months, just to entertain myself, and I had a lot of fun with it. In one restaurant, when somebody guessed, like, 53, I said, "No." And they said, "Well, my friend wants to guess." And I said, "Friend, do you want to go higher or lower?" So the friend thought a while, I think they went higher, so they said something like 65 or so, and I said, "No." And I tried again, "75?" "No." But one woman came pretty close. She was an old lady in a senior citizens library, she was about 83, and I asked her the same question and she looked at me and she said, "I think you're about 72." That's enough, you know, five years. And then I said to her, "See that kid walking along there? How old do you think he is?" The kid is about 18 or 20. She said, "I think about 40." The mean was in the 50s then, but that was several years ago. [Laughter]

Interviewer: Well, I mean, that just sounds like a fun game to play. Also, it's very entertaining and you can play with any other kind of question, too. And it strikes me that you have developed an ability, and perhaps this is somewhat innate as well, to think for yourself and to attempt to start from first principles whenever possible. I'd love to pick up on a thread that I was hoping to explore last time, which is other-directed versus inner-directed. And there's another book title, I believe it's a book called *The Lonely Crowd*.

Ed Thorp: Yeah, that's right. That's right.

Interviewer: Could you speak to this and provide any elaboration that you think is helpful? And if there are any resources or approaches that you might suggest to people who want to become more inner-directed?

Ed Thorp: First of all, *The Lonely Crowd*, it basically explores the idea of people who are, quote, "inner-directed"—you'd call them maybe introverts, but that's not quite, it's not quite the same thing—and people who are other-directed, who tend to overlap with extroverts. And other-directed people tend to get their direction on their values and their gratification from the people around them. So they tend to do, they tend to conform, and they tend to go with fads, and they tend to go with the majority vote on things. And inner-directed people tend to be more self-deciding about things. They tend to be more associated with the introverts, but not exclusively. There are a lot of, I'll call them, inner-directed extroverts. By inner-directed, I think of yourself as having your own independent moral and ethical compass and kind of set of rules for living and guiding yourself. And an other-directed person tends to pick those up from others, basically

indicate to them what...

Interviewer: The right things to do are and what the right things to do are and what the wrong things to do are, so it's an interesting line of thought. Here's a way to get into this a little bit. Here's a book, trying to think the name of it. It is a personality typing scheme started by a mother and daughter, and they have four major personality dimensions. One is introvert-extrovert, the next is sensing versus—oh, is this Myers-Briggs?

Ed Thorp: Yes, it is. That's it, thank you.

Interviewer: Right, the Myers-Briggs Type Indicator.

Ed Thorp: Yes, and so that is, I think, very useful. Even though it's simplicity, it kind of breaks people down into 16 major categories depending on which choice they are in each of four dimensions, two times two times two times two. And then it gives you a general description of a pure type, like INTJ as a pure type, and so the general description will be a scientist slash mastermind or something like that. And ESTP is promoter, so all kinds of things come with promoter. But E is extrovert, S is sensing, which means more thinking and more like, I guess, more sensitive to the people around you and how they do things and how they act. You can read them. So if you look at these categories, you realize that individual people aren't any one of these 16 types, but if you run into a person, you'll often find that one of them is very much like one of those 16 types. And when you find that out, you can understand a lot of things about them very quickly. Sometimes it will be a mixture of two of the 16 types, and again, it's not too hard to figure out a lot of things about them. And if you type yourself and you're anywhere near one of the 16 pure types, your hair will stand on the back of your head to the extent either of us have any. You have a lot more hair than I do; I've been growing it and growing it. So it's incredible sometimes the insights that you suddenly get into somebody that you know. You say, "Oh, this kind of person, they're artistic," and artistic has these things that go with it all the time, almost. So you learn quite a bit quickly about people, not everything. And you run the risk of stereotyping, taking a prototype from a group and using that to represent everybody in the group. And of course, there's a huge spread among the people in the group—what we talked about before about averages and distributions, the same idea. But anyhow, it's a useful introduction to thinking about other people and realizing they're different from you. They're not better, they're not worse; if they're a different type, they're just different. And you need to try to understand where they're coming from, and it helps one do that a bit. So I'd recommend that as a kind of psychology introduction to understanding people better.

Interviewer: What is your type?

Ed Thorp: Science, mostly INTJ. I did the typing a long time ago for Myers-Briggs, and I'm also an

INTJ.

Interviewer: Oh, this is not to imply I have your personality or skill set, but—

Ed Thorp: Well, that shows you how different people in a category can be. Yeah, and of course we're not pure either. You know, we're 90 percent or something like that, or 80 percent, whatever it happens to be, instead of 100 percent. I think I'm introverted, intuitive, thinking, judging. I'm probably 99 percent judging, which I'm not sure always helps me. That's a joke, it's a joke.

Interviewer: The Lonely Crowd, just to pick up on that. What is the takeaway, or what would you hope people in an overarching way to glean from The Lonely Crowd? Is it the personality differentiation that you're describing along the lines of a Myers-Briggs, or is there more to that book that you would hope people would notice?

Ed Thorp: I think the biggest takeaway for me was the notion that people who are simply "other-directed," which means that they pick up the cues about what to do and how to behave and what's good and what's bad from the crowd, those people are kind of afloat without a compass. And it's harder to be that kind of person, and those people are lonely because they don't really have anything inside that helps them feel a sense of worth and helps them make decisions that are clear-cut and that they feel like they can really count upon. So they're kind of adrift.

Interviewer: Yeah, I'd love to tie two things together because I always wonder for myself, how does one develop this as a skill as opposed to an inborn attribute? Let's say, or is it developable? Right? If I want to learn to swim, I can improve my stroke, but I'm never going to have the same phenotype as Michael Phelps, right? I'm just not going to have these crazy anomalous flipper feet, for instance, with hyper range of motion. It's just not going to happen. So in the case of The Lonely Crowd and developing an inner compass, I want to tie that back to numeracy, because I find that if someone learns how to scrutinize studies, or journalists who try to interpret studies, it is incredibly liberating and confidence-building because they no longer feel entirely dependent on some high priesthood of interpreters to tell them how to think or to tell them how to digest or metabolize data. They can actually go straight to the source. So I do feel like developing a basic understanding of probabilities and statistics, a very basic ability to do a handful of mental calculations, a very basic ability to read a study for oneself—and I think all three of those checkboxes could be checked in a single month. I think with, you know, a few hours a week for a few weeks, you could make an incredible amount of headway. For me, that seems to correspond to people who are more internally directed. I don't know if that resonates at all for you, but I did want to at least from my experience tie those two things together.

Ed Thorp: It resonates fully with me.

Interviewer: Yeah, so I'll add some more resources in addition to those that you mentioned into the show notes for this episode so people can pick up on that. And people will harangue me if I don't follow up on a comment that you made, which was, "I've been growing and growing my hair." So how does an 89-year-old grow and grow their hair?

Ed Thorp: Well, I stumbled into one thing accidentally which may or may not work for everybody. It only applies to men, by the way. There is a drug called finasteride or Proscar. Have you heard of this drug?

Interviewer: I have.

Ed Thorp: If you have an enlarged prostate, which most older men tend to get, you want to keep that thing from getting larger and larger because it squashes other things down there, like your bladder, for example. So you have to go to the bathroom more often. If you have a huge prostate, I've often gone into the restroom at intermission and these guys are standing there for five minutes; I know they have enlarged prostates. So slowing the growth of your prostate is a good thing, so finasteride does that. However, it just so happens that it also promotes hair growth, and it's the best thing I've ever heard of for promoting hair growth. It doesn't promote massive hair growth, but it's noticeable, and it also causes you to retain your hair. So I noticed more hair right away when I started taking it.

Interviewer: How long have you been taking it?

Ed Thorp: Probably 20 years.

Interviewer: Do you have much baldness in your family?

Ed Thorp: My father was bald.

Interviewer: Okay, all right. You had male pattern baldness. My father is not bald, but my mom—see, my father is not bald, but my mom is not bald, but I certainly at this point am bald. Maybe I'll pick up the finasteride. For people wondering, also finasteride is also sold as Propecia, as well known as Propecia as well. It's a 5-alpha reductase inhibitor. I think you get a higher dose if you get finasteride prescribed. I almost wrote it up, and I'm pretty sure that's true because I knew about the over-the-counter versions, but they were maybe a fifth as strong at the time I checked.

Ed Thorp: That makes sense.

Interviewer: And of course, I'll just mention because it's a good idea, speak to your doctor. Neither of us are doctors, we don't play them on the internet, so please speak with your medical

professional. There are possible side effects with this and most drugs. Absolutely, Proscar, finasteride, look it up. Good Wikipedia entry. Is there anything else that you would like to mention on the health side of things? And we can potentially discuss this another time, but look at adding something on Tim.blog that might outline some of this in greater detail. But is there anything else that you think we would be remiss not to mention or that we should include in the conversation of health and longevity?

Ed Thorp: I think we're pretty well covered from my standpoint.

Interviewer: Yeah, I think we've covered quite a bit. Here's really one more thing that I have highlighted here that I'd love to hear you expand on, and that is using scrap time. I've never seen this expression before, although I can sort of intuit what it might mean. How do you use scrap time or recommend people use scrap time, and what is that?

Ed Thorp: I just made it up for this conversation.

Interviewer: Oh, you did? Great, because I was thinking about things. Perfect, this is an exclusive, a worldwide exclusive.

Ed Thorp: Well, a lot of people complain that they're bored, or they get impatient when they're stuck somewhere. For example, let's say I'm at a long traffic light. I happen to have to drive through about three or four two-minute traffic lights. Sometimes they catch me, sometimes they don't. This is a couple days a week I go in for a few hours to my office. So whenever the traffic light is sitting there, what do I do? I could say, "I wish this light would change," or maybe I should have run that light—no, I know I don't do that. Instead, you know, I've got a couple of minutes here, I can do whatever I want. Well, my neck is a little stiff today, why don't I do a few neck exercises or a few shoulder shrugs or whatever? And by the time I'm done with that, the two minutes is gone, I'm ready to go to the next traffic light. So the scrap time turns out to be a payoff rather than a negative, and I don't care about the red lights, not at all. Or a doctor's office, like going to the doctor's office. They say, "Well, we were going to take you at 10:30, but there's been a delay, the doctor had to do an operation, he won't be here for a while, he'll be back at 11:00." If I don't have something else scheduled, I say, "Okay, fine." If I have anything on my phone, I do that, I use the scrap time. If I run out of stuff like that, I try to get some exercise in, some stretches, some limbering up and so on. And it's amazing, when I start doing that, they take me in a lot quicker than they would otherwise because everybody knows this guy's been forced to wait and wait and wait. It's not why I do it, I try to do it as subtly as possible, but or I'm sitting there in the doctor's room number seven waiting for him to show up, same thing, more scrap time. I can get 10 or 15 minutes, I like raises, push-ups, all that kind of stuff in. You know, another advantage, I can imagine is that they see you doing all this and they're like—

Interviewer: This patient is scaring the other patients. We have to get him through the system as quickly as possible. They move you along. Ed, I'd love to know, and if there's no answer that comes readily to mind that's fine as well, but I'm 45 and I'm wondering, we're roughly 45. After some thinking, you know, I am roughly at the midpoint to my next target, which is to get to your age and then from there to 120 or who knows where. You know, by then the world will have changed a lot and your odds will be a lot better. One can help, a boy can dream. So I hope that is the case and that we're not living in some dystopian future where no one has any reproductive health. So I am hoping for the upside case. Let's assume that is true. What are some of the new beliefs or changes in beliefs that most positively impacted your second half? And of course, this is self-serving and it's possibly a hard question, but how did your thinking or priority or beliefs change kind of after the midpoint that you think retrospectively looking at it have most benefited you or those around you?

Ed Thorp: I started running probably when I was about 40, just a mile or so on a Saturday. And then, as we talked about last time, I built it up. Then I started actually running marathons when I was 47. So I got into running very late. But marathoning taught me quite a bit about life in a way, because I began to tell myself, you know, life is a lot like running a marathon. And if you look at it that way, here I am at that age, then back in roughly around 50, here I am at the midpoint, perhaps, of a marathon. So if you're running a marathon, you don't sprint because you'll burn yourself out early. You are careful enough to step in potholes. There are all kinds of other things that you need to take care of in order to get to the finish line. And you eventually learn—some of us learn—how to get through the wall without there being a wall anymore, which took me seven marathons to figure that one out. And so I thought to myself, well, the same thing about life. If you plan ahead, you can avoid a lot of problems that sink other people: knee replacements are clogging up, catching diseases because you don't do proper vaccination, going to countries where there are horrible diseases to catch in the first place and you can't protect yourself fully. Maybe that sort of thing. So thinking long term is one thing that running a marathon teaches us. And so I tend to think long term anyhow, but that was a great reinforcement in the last, say, five to ten years.

Interviewer: Is there anything you've profoundly changed your mind about? Or it could be recently, I don't need to put a time frame on it.

Ed Thorp: To me, the value of being around good people and not being around a few bad people is much higher than it ever was before. And the people in my life I consider the most important, and my actions with good people the most important thing. You know, I enjoy other things, but I think at this age, you've basically done most of the stuff that you're going to do of any general broad significance. And so it's a time to reflect and to think about life and enjoy it. And if one has any wisdom, to share it to some extent.

Interviewer: Hmm. Well, you seem as sharp and as lively as ever, as far as I can tell. I mean, you

certainly have more vitality—however, I know that's a bit of an italicized word—but life force than a lot of the 40-somethings I know. So whatever you're doing, keep doing it. And is there anything else, Ed, that you'd like to add before we bring this conversation to a close?

Ed Thorp: Hmm. I think an important thing for everyone is to think about the world and society as us instead of me, and to try to act that way and to think longer term. Think about how the things one does affects the people around, not only right away but down through the years. And it might seem like it doesn't matter, but it does in a way. And a lot of these things that you make better now for the future will actually benefit us a lot sooner than you might think otherwise. Pollution, for example. You know, climate change is coming along, that's coming along pretty fast. And people might say, "Well, what do I care about what happens 50 years from now?" But it's happening in increments. It'll be a little worse next year and a little worse the year after and so on. You might not want to be around when it's really bad 50 or 100 years from now, but you might not care because you're only going to be alive another 10 years, let's say, if you're a pretty old person. But still, these things come along sometimes faster than you think and in ways that you don't expect. And so it's wise, I think, to just try to make the world a better place in any way you can, even though you might not reap all the benefits.

Interviewer: Yeah, hear, hear. I recall a conversation a friend had with an engineer, I won't name, very famous founder, and they were discussing artificial intelligence. And the two questions were, for anyone who this particular founder would speak to about AI, he said, "Number one, I asked them, 'Do you have kids?' Number two, I asked them, 'Do you know how to code?'" And the "do you know how to code" is kind of self-explanatory, it's engineering bias, which is understandable. But the "do you have kids" was to evaluate if they are thinking sufficiently long term. That was just one of the hurdles that he hoped people would pass. And if not for your own kids, if you don't have kids, then just think about your closest friends and their kids or their grandkids. I mean, there are many ways to look at it. Ed, I so enjoy our conversations. I know we've only had two long-form conversations thus far. I hope this is just the second of more. And people can find you certainly online, EdwardOThorp.com. Your books, *Beat the Dealer*, *Beat the Market*, and *A Man for All Markets*. Subtitle: *From Las Vegas to Wall Street, How I Beat the Dealer and the Market*. Is there anything else you would like to point people to, any other recommendations that you would like to make, requests of the audience other than what you just requested?

Ed Thorp: No, I think we've covered everything. Thank you. It's been a pleasure.

Interviewer: All right. Well, thank you so much, Ed, as always. And for people listening, we will include resources, everything we discussed, links to all the books and concepts and so on at tim.blog/podcast, or better yet, just go to tim.blog/Thorp, T-H-O-R-P, and we will add as many helpful things as me and my team can think up and cull from this interview. And until next time, be a little kinder than is necessary, think long term, become a little more inner-directed, learn a

little bit more about probability, statistics, and mathematics. I will link to that. And thanks for tuning in.

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