The Mathematics of Trading (Part 1 of 2)

Walter: Your genes aren't your destiny. This whole thing in Sciences, swinging back the other way with epigenetics. It's not true that your genes determine who you are and what you're going to do...

Announcer: Two Traders, Darren and Walter, pull back the curtain on profitable trading systems, consistent money management, and profitable psychological triggers. Welcome to the Two Traders Podcast.

Walter: Welcome to Two Traders. It's Walter here. Hi, Darren.

Darren: Hi, Walter.

Walter: Today, I thought we would talk about - and I know you know a bit about this guy. I'm just kind of learning about him. His name is James Harris Simons. I'll give everyone in the **shownotes a link to a video** where you can see this interview of this guy. Fascinating chat because he is apparently really good at Maths and has done a lot of work in sort of what you would call a basic science in terms of Math.

When he was asked in his interview, the other guy who's apparently also pretty good Mathematician or at least interested in Math, he asked James. He said, "Hey, there are lots of people out there who are good at Math and there are a lot of people out there who are interested in achieving a lot of money," -- or financial success as how he words it -- "and why is it that we don't see more people like you?"

Apparently, this James Harris Simons dude is a billionaire and he has his big fund and all this. I found it interesting the way that the conversation was going because I thought that that's kind of how… The way that this guy interviewed him, the guy who's interviewing him is more interested on the Math-side of things and I think that's actually why James agreed to do the interview.

He probably gets a lot of interview requests and probably knocks back for a few. In this case, he was interested in talking to this guy because he's more about the Math side of things.

What are your thoughts about this guy because I know you have a bit of a background and learning about him.

Darren: Yeah. I mean I was drawn to because you know, my belief about the market is that the Math can get you so far but as traders, what we want to do is we want to remove the uncertainty. We want to unlock the key and say, "I've worked the numbers out and this system is infallible. I've sorted and I can't go wrong now." That's kind of what we are looking for.

When I first heard about this guy, I was drawn to watching it because it goes against what I believe and I think it's really important to look at those things. Secondly, this is what we want to believe that you can just sweep the numbers with Math with intelligence, basically. We can unlock the key and he certainly backs that arguments up.

As you've pointed out, there's very, very few that are doing it that way and when you hear their process and how they trade, they've got a lot of really smart, highly paid Math guys, Science guys. They're crunching insane amounts of data to find these trading opportunities and they've been really successful doing that.

When you see things like that, you'll think that that's the answer. "That has got to be where I'm going wrong. I need to get more precise and then I'll probably be okay." If that is what you want to believe, I think deep down that is what we'd like to be with trading. That you can unlock the key and then don't really have anything to worry about.

When you use evidence, you have to use all of the available evidence. Like you say, there's very, very few people doing this. There's a lot of very successful people who are doing almost the opposite of this.

I think you have to balance your view and for me it was good because it always reminds me that however much I believe in my approach and whatever evidence I've got to back that up and other traders who've been successful doing this similar approach, you should always keep in mind that the opposite approach or approaches that are contrary to what you do can still work. For me, that's what I get from his videos. Just because I have something that I believe works and I've got evidence it works, don't blank out everything else because you can learn stuff from stuff that disagrees with it.

Walter: Yeah and there's a danger there. If we just let our bias filter out the information we pay attention to, we all kind of do that and use the confirmation bias. But, I think you're right. It's useful to seek out contradictory data and theories.

I find it useful to do it at the trade level. Like, when I take a trade I say, "If I'm doing this, who's the other person on the other side that's taking the other side of it? What are they looking at? What are they seeing? How are they viewing this differently?" To me, I think that's useful as well.

Darren: Also, if you believe that diversification is important and you have a very singular view of how to make money in the market and very difficult to get diversified then because, essentially, everything is going to be doing slightly different flavors of the same thing.

For me, the edge that I try to exploit is when my winners are so much bigger than my losers. If I want to diversify from that, I should really be looking at ways of using the same core ideas. Perhaps, having winners not quite as big but perhaps a higher win rate where I can risk a little bit more. You have to have, like you say, have to have that open view on what works.

Walter: Yeah. I thought it was interesting how he basically admitted in the interview that when they first started the fund, they were sort of doing what every other fund was doing at the time. Which was, basically, looking at the fundamental information, fundamental news and analyzing the markets that way and taking positions that way.

It was only after a couple of years getting into this that they started using a data-driven approach. The interviewer was asking him, "What sort of Math or Science are you using?" He says, "It's all statistics with a little bit of probability in there", which is exactly how I see trading.

I'm glad that I have at least one thing in common with this billionaire. He's been described as the World's Smartest Billionaire. I think a lot of trading just comes down to probabilities and stats. I mean, that's how most of our data. When we look at trading systems, they're all statistical. Everything.

It's the same statistics they've used in medical research. It's the same thing that traders used when they're assessing trading systems. One of the things you're talking about was how a lot of us, we like to see it this way. We like to see trading this way which is if you can just crack the code, if you can just figure out the right formula, you can make a big pile of money. It's a very common theme in trading. It's all about cracking the code.

But I often wonder, contrasting this to the simple very few moving parts style of trading, I often wonder if you get much value as you add more variables like as you add more data, as you add more variables and more layers of complexity.

The old 80/20 rule comes into play where you can get 80% of your results from 20% of what you've basically leveraging. I think that last bit that you get, the additional bit that you get -- and you'll see this in statistics where they'll throw a whole bunch of variables and they'll say, "Let's try and predict how tall you are going to be. What's your heights going to be when you stop growing."

Inevitably, there's a few variables that are the ones that basically are the best predictors. And while there's other variables that are going to help and make that prediction a little bit better, you can pretty much get away with just a handful of things which is basically like how tall was your father and how tall are you at age 5 or something like that. There's like two things. If you know those two things, it's pretty easy to figure out how tall someone is going to be.

I think the same thing goes for trading. Like you're saying, I'm a big fan of simple trading systems. I think that you can get really complex with this but I wonder if the 80/20 rule comes into play here where you're not really getting that much more bang for your bucks so to speak, when you start adding these layers of complexity.

I actually think that you also run the risk of curve-fitting or becoming too good at describing a certain set of data and then that makes it more likely that your system will fall out of favor later in the future. But, I think we've talked about that in the past.

Darren: I thought it was interesting that he was labelled as the smartest trader because it's purely maths so he's going to be smart. You could really say that the value-investors who really don't do a lot, they're buying good companies and they just sit and wait for them to rise over time.

You do very little. You could argue that there's much more simpler approach. It's smart because of its simplicity as well. I find it interesting that because his approach is really complex and it's Math-based that that makes him smarter because when you look at the people who've made a lot of money, the largest percentage of them tend to be doing something very simple.

Walter: There was an old book called "One Up On Wall Street" by Peter Lynch and he talks about that kind of like a simple idea. "Which stock should I buy? We'll just drive by the stores and see which one has the parking lot full of cars." I remember that.

You can make the argument that you can use very simple ideas that just cut through everything and give you a pretty good idea of what's going on. I'm sure there are plenty of traders out there who think that they can read the balance sheet of the company then they can understand whether or not they should be investing in that sort of thing.

Peter Lynch I think at the time, the "One Up On Wall Street" book was running the world's largest hedge fund for a while there. I don't know. I'm not sure what happened to him .

Darren: I've seen so many such simple ideas that work if you can actually buy into the idea. There's a guy called Andreas Clenow written a really good book about momentum and he did a thing where he just used the alphabet.

He said, "Over the last 30 years, if you pick all stocks with just the symbol starting with the letter A and then he went through the whole alphabet. Only two letters in the alphabet actually made a loss. Every other letter in the alphabet from the starting symbol of stocks made massive returns."

He was trying to show that picking stocks or picking trade entries is not really the answer. His argument was that in a rising market, if you pick all the stocks that begin with the letter A, you actually end up with a quite diversified portfolio. You'll end up with stocks in different sectors and it is actually quite hard to lose money if you'll hold onto them.

I see this all the time and he did another example where you'll just literally look at the previous year. If the previous year was up then you bought back that stock and if the previous year was down you sold that stock and then you just rotate your portfolio every month. Again, it made really good returns.

I like this approach to trading. I like this approach of losing position and looking at the big picture. Where is the money made most of the time over a long period of time? Then it's really just a case of making sure of your risk control.

If it just so happens that you start trading in a period where the markets stops performing in its usual manner, that you're not going to blow up. You apply some patience to that and do it over a long time then you can make money without having to get really complex or really precise. I think that is the best approach. There's a lot of evidence to back that up.

Walter: Who was the guy that was doing the "just buy the A stocks" or whatever? Who was that?

Darren: Andreas Clenow his name is.

Walter: I've heard one interview with him. To me, that is interesting but it seems like that would depend on when you buy them right? Like, if you bought a whole pile of stocks in 1999 or 2000 or something like that, some of those companies do not exist anymore like Netscape. Do you know what I mean?

I hear those stories and I understand them. I know that that's what people say. I feel like it still depends on when you buy them. If you bought all the stocks that were in a dow, you wouldn't have any stocks. They're all gone. There's one stock left in the dow from 50 years ago. It's General Electric.

Darren: Yeah but that would be the same for the people who did a lot of analysis on picking their stocks as well because they wouldn't most likely pick Netscape.

Walter: Yes.

Darren: His argument is that you can do all of the analysis you want but that is not the answer. His argument really is that if you're diversified, well that is as important as being a good stock picker.

There's another. There's a society where every year, they get all the top fund managers together to pick their top ten stocks for the next two years and they do like a monkey throwing darts.

Walter: Yeah, they do that too. I think they do that in a paper.

Darren: And the monkey-throwing-darts, they generally outperformed these fund managers managing millions of Pounds.

Walter: They used to have one that had… Like in Australia, there's this monkey, the astrologer, and then a bunch of fund managers.

Darren: I think that was a little bit of fun but it does really highlight some important things that you have to consider. Taking it back to forex day trading which most of our listeners are interested in, this obsession with getting really precise, accurate entries is a similar thing as stock picking.

My argument is always that you should really put that as being about 20% of the importance of your trading strategy. But, it seems that is the popular approach.

Walter: Absolutely. We want to feel like we're in control. Don't we want to feel like we're in control? Isn't that the key? If you don't feel like you're in control then you can't. Like allowing yourself to take a trade based on a dart or a monkey or whatever, it feels like you're not really… It's like picking your own lotto numbers. If you pick your lucky numbers, you have a better chance of winning the lotto.

Darren: My business partner wanted to buy the Euro Millions Lottery about two weeks ago. It was some ridiculous amount a 180 Million Euros or something. He wanted to go buy some lines and he asked me for my numbers. I said, "Obviously: 1, 2, 3, 4, 5, 6, 7." That combination has as much chance as any other combination of 7 numbers coming up. People will never pick that.

Psychologically, it is great to want to feel in control but the worst thing is to think you're in control when really you are not because that's when you're going to lose all of your money. You have to be about what you are in control of and the only way to do that is to back it up with evidence. Where are these traders that are making huge returns over long periods of time? Being really precise with their entry and being really accurate with their entry. Now, you could argue that the guy we're talking about today is one of those guys but you'll find many more that aren't doing that.

Odds and probabilities, what you're going to base your money. Are you going to base your money on being the next smartest guy on the planet or are you going to go with this group of guys doing simple things and making lots of money over 20, 30, 40 years?

Walter: Yes. I get your point but if I go to the forex forums, I don't see simple stuff. I see like 4, 5 indicators. I see if-then rules and I don't really see much simplicity. Maybe in years but that was I saw.

I used to see like regressions plus the zigzag and Stochastics and the moving average and all these stuff and then all will go ahead and add Martingale to it. That's how I would see it. There wasn't much there but I guess your argument with those guys aren't really making money either.

Darren: I could be cynical and say, "Well, it's all a bluff and now I need to be making money for a year," but that would be the wrong thing to say. There are some retail traders that are being fairly precise and using complex entries and making money.

We can give that some sort of wait if you're like in a strategy pool of failure. That can be important but are you going to take that as being more important from guys who've been around 40 years and make an average 20% a year and have never blown up and are managing Millions of money and there's a huge group of them. Which one do you want to believe?

Which group of people do you want to believe? These guys, these institutional traders are people trading other people's money. They have to be transparent with their performance.

Walter: Obviously, yeah. They also are restricted in the markets and the amounts because when you get to a certain size, it becomes about finding more markets more than anything.

Darren: You have to take all of the evidence and weigh it up and then get a broad idea by it. "Okay. This is the weight of evidence and I am going to base my trading on that". The danger is if you write down all of your beliefs about how you are going to trade and how you are going to money and the weight of that evidence backing that up is slim, then you are in danger of feeling like you're in control but really you are not being in control.

Let's not disregard the data from brokers. Brokers have to be fairly transparent in their results as well. It's very difficult to find a broker that says the majority of their retail traders are making money without failing. Nearly all of them are saying that the majority are losing money.

Walter: Yeah.

Darren: You have to weigh that evidence as well. It is easy to find people on retail forums that are winning. Actually, if you weigh it up, they are all bloody winning all of the time if you will listen to what they are saying. That is why you have to be a bit more open-minded and say, "C'mon, mates. Let's weigh the evidence up here" and base your trading on that.

Walter: To me, I feel like when I first started trading, if it wasn't complex I just didn't believe it. I just feel like a lot of traders, they want to take the path that James Harris Simons is taking which is you feel like you need to have the right formulas or the right custom indicators and the right data and all these stuff.

It's almost like it is the normal path. It feels like if you don't really think about it, you're just kind of go with what is obvious and intuitive. You would do that. You would just go for that. That would be the way.

You would want to win more often than you lose and you would want to use a high-powered computer to spit out. What should I do? What should I buy or sell here? I did that. I created a neural network based on all these data from all these different markets around the world and try to put it the USD/JPY. Like, that was where I thought I should go.

You know how you're saying about using different systems and specification of systems is true diversification. If you're trading a bunch of trend-following systems, you are going to be highly correlated and you're going to basically accentuate your equity peaks and accentuate your drawdowns. You are going to make your drawdowns deeper and your peaks higher. That's true but you also have to believe in it.

You have to believe in this type of system. It's going to work. If you believe that a trend-following system is going to work, are you also going to be able to believe that an end of the trend system is going to work too? Or, do you have to do something slightly different like a breakout or something? I think that is important too. You are not going to trade it if you don't believe in it. Not long term, anyway.

Darren: I think so, to an extent. A lot depends on where you are getting your beliefs from. It is the evidence that other types of trading systems work as well as trend trading and build your belief on that.

If you build your belief on intuition like you're saying, you know what Psychologists say about intuition. It is really good in closed-circuits wherever there's not much uncertainty but intuition when there's a lot of uncertainty involved, it's pretty much a waste of time.

A systematic model generally works better in those environments. It's not just about your beliefs, it's what you're building your beliefs on. I think your beliefs can change, you have to understand them. You are right. When we come to trading our intuition tends to consider it as being something that has a very little uncertainty in it. When you learn there's a lot of uncertainty in it, you realize that you need to start questioning your intuition and perhaps base it more on evidence.

Walter: That's all the time we have for this Episode but in Part Two, you're going to get trading discretion, intuition and large winning trades. What do they have in common. We are also going to cover Richard Donchian, Community College Instructor and one of the most influential traders for the last hundred years.

He has influenced traders like Richard Denis of the Turtles fame and Ed Seykota of MArket Wizards and so forth. You'll also get which instinct traders must overcome to find consistent profits.

Also, how to tell if the system works with Darren's simple hack. The weirdest currency trader you'll ever hear about down under. You'll be laughed off the free factory forums if you'll explain how he traded. What winning traders do differently from the crowd. If you blink, you'll miss it.

The trader with thousands of trading systems and why he rarely trades them ever. A simple forex system Darren will lay all out for you in the next Episode. The antidote for trading mistakes. These are too common amongst traders but you don't have to make them.

Finally, why most trading systems don't need to be fixed and how fixing them can be dangerous. All these and more in the next Episode of the Two Traders Podcast. See you then!