

EPISODE 177

[INTRODUCTION]

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FT: Welcome back to So Money everyone. I'm your host Farnoosh Torabi. Quick happy birthday shout-out to my mom! Mom turns, well I won't say how old she's turning today, but it's a special birthday and I just wanna say "Happy Birthday Mum! I love you." I'm not sure if you're listening to this podcast, but I'll call you later and make sure that we connect. But it's a special day in the Torabi household. Mom is celebrating her birthday, and I hope you got my card!

My guest today, everyone, is Dr. Paul Zak. He's a scientist, prolific author, and public speaker. But that's not all! Dr. Zak has the very unique job title of "Neuroeconomist". He has degrees in Mathematics and Economics, and also has Post-doctoral training in Neuroimaging. In 2004 his lab discovered that the brain chemical "Oxytocin" allows us to determine whom we can trust and since then he's continued to study the chemical. And his current research has shown that oxytocin is responsible for virtuous behaviours, working as the brain's "moral molecule" and this knowledge is being used to understand the basis for civilization and modern economies, improve negotiations, and treat neurologic and psychiatric disorders.

The possibilities are endless, and he's written a book called "The Moral Molecule: The source of love and prosperity" about his discoveries on oxytocin. He has a fascinating perspective on decision-making and finance, and that is precisely why I'm really excited to have him on the show to learn from him. We learn what it means to be a neuroscientist. You know, he kind of invented this field. We talk about how oxytocin plays a significant role in some of the choices that we make in life, particularly our money choices. I even get the chance to get his opinion on Greece, and his take on how to solve the Greek Debt Crisis. He actually has a solution.

So without further ado, here is Dr. Paul Zak.

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[INTERVIEW]

FT: Dr. Paul Zak, welcome to So Money. Great to have you!

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PZ: Thank you Farnoosh.

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FT: Now, you went ahead and gave yourself your own title for your career, your profession. You are a Neuroeconomist. What does that mean? And good for you for giving yourself your own title!

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PZ: [Laughs] I dunno if I gave myself that, but I certainly helped start this field. So Neuroeconomics studies brain activity while people make decisions. Decisions involving money, involving other people, and I did read your bio so I know that you have never made a bad decision involving money.

FT: Never!

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PZ: But you know, other people make those decisions!

FT: [Laughs]

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PZ: What's the deal there? We have these big brains - human beings - how come we make mistakes when it comes to money?

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FT: So we're gonna get into some of those mistakes, and why we do them. But first, a little bit more about your background. I understand that you have, for years, been particularly interested in the molecule Oxytocin.

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PZ: That's right. So my lab was the first to discover the behavioural effects of this brain chemical and it was classically known to be associated with birth and breastfeeding in women. But there was a large animal showing that oxytocin signals safety, or trust, or familiarity and we showed that same signal works in human beings. So it's this molecule that makes us tangibly care about other people, both in terms of trusting others with our money, but also more generally making us feel more empathic or connected, even to complete strangers. And I think that's a really interesting part of our human nature. Now, it can be abused. We've done studies on psychopaths and conmen who kind of abuse this trust connection system using oxytocin. But in general, most people have an in-tact system and it essentially works like the "Golden Rule". You're nice to me, my brain makes oxytocin and it motivates me to reciprocate and be nice to you.

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FT: And your book is called "The Moral Molecule: The source of love and prosperity". What were some of your more, I guess, more exciting discoveries on oxytocin in that book?

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PZ: Yeah, thank you for asking. I mean a couple of those I think are very interesting. One is that we found, about 10 years ago, that countries with high levels of trust are more prosperous, the standards of living are higher. So they're higher because they have better formal institutions, their governments work better. They're also higher because people are socializing at a higher rate. So sometimes social interactions lead to economic transactions, which lead to the creation

of wealth. And so we really looked at this kind of "foundational effect" that allows human beings to create wealth from interactions with each other, which is really unique to human beings. So I think that's the first one.

The second one is that oxytocin is active in evolutionary old parts of the brain. In fact it predates mammals. The history of oxytocin goes back at least 400 million years into fish. And so this signal of connection and care, which is very powerful in humans in their real neurologic sense, means that socializing - our social nature - is a key part of our human nature. That is, we are social creatures by design and because of that it means that we can create value, we can identify strangers who we want to be around to build business with, to be friends with, to build romantic relationships, and we do that quite naturally.

And I guess the third thing, very quickly, is that the reason we can sustain ourselves as part of the social community is because we have this internal sense of right and wrong. And oxytocin gives us this sense of how it feels to be treated by another person. And so once we're more sensitive to that, we end up treating people well, most of the time. And of course the story gets interesting when you have to ask when "most of the time" occurs, and that's the research we did for a dozen years. So I think those are the 3 big take-homes.

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FT: What role does oxytocin play in how we make financial decisions?

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PZ: So in general, it plays no role. So if I'm just gonna go to the store and buy a tin of coffee, I'm just thinking about what I like, what kind of coffee I like, what the prices are and that uses a bunch of interesting brain systems that allow me to create a subjective sense of value.

Economists call that "utility", so I think one of the key findings from Neuroeconomics is that we have this internal utility function like we learned in Econ 1, which is really interesting. In fact, all animals have that. For this work we did recently with the rewards program "Plenti", we asked more generally, "What happens when you're shopping and you get an unexpected reward, like from a loyalty program?" In that case we showed that, compared to individuals who are not

getting this unexpected reward, that your brain not only creates a variety of chemicals that make you more relaxed, your stress levels go down, but also pumps out oxytocin at a very high rate. Average 67% increase in oxytocin for people who got this unexpected reward while shopping.

Why is that? It's because the reward program connects us to the store, to the experience, and to the person who is giving us that reward. So Farnoosh, you've probably had this experience like I have; you go into a store and you're in some reward program and the clerk says, "Oh, you know, you just got a free sandwich," or "You've got \$40 worth of points you can spend towards your new pair of shoes," and you're so happy! And so we really want to know what that social experience is for shopping, when it's not you know, the buying coffee example is kind of a purely selfish experience. But once we add in these loyalty programs, it becomes a social experience and I think that's very interesting.

So that social experience from the store's perspective, we showed, not only makes customers happier, those loyalty - people love this experience. So there's a reason why we like these loyalty programs.

FT: You spend more!

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PZ: Yeah, we spend more, but also we're happier. So we showed that, compared to people that didn't get the rewards in our study, and I can tell you more about the details of that. We did blood draws and we took a lot of neurologic data to confirm this. People were actually 14% happier when they got their reward, not surprisingly. Matter of fact, they were a lot happier a week later when we followed up, they wanted to go back to that store, and yeah we do spend more but we're gonna spend anyways. So they loyalty programs are a way to make us actually feel better neurologically about the spending we're doing anyway.

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FT: Why did you wanna do that study in particular?

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PZ: You know, that's such a great question. When the folks at Plenti contacted me and said, "You know, we're launching this new program, all these different partners like Macy's and Rite Aid and you can share points and use the points at whatever store you wanna go to. Great!" And they said, "We're actually curious on why people love loyalty programs." And they said, "You're suppose to be some expert about the brain. Can you help us figure this out?" And I said, "Gosh, that's a really good question that I haven't thought of." So I love when people come to me with good questions I haven't thought of, and I'm like, "Ah man, that's a great question!" Because I've had the experience, I'm sure you've had that experience, where you're so happy when you get that reward. What the heck is going on in your brain and what do do immediately and then a week later down the stream. So yeah, I love that question. I thought it was a great one.

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FT: I'd love to turn the conversation now to find more about your own personal financial perspectives on things, especially with your background as a neuroeconomist. What would you say is your number one financial philosophy that guides your money-making decisions?

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PZ: That's a great question. I mean, number one: it's hard to say. But I think I've tried to take the research we've done very seriously and I think one of the most important ones of those is that when it comes to making serious financial decisions, the area of the brain that allows you to plan in the front of the brain, called the Prefrontal Cortex, is actually the last to come online. So emotional parts of the brain, parts that have to do with how our bodies feel, those activate very rapidly for any situation we're in. So the planning part, the weighing cost and benefits, that's a slower process in the brain. It's more lately evolved in human beings, and so what that means is for a serious decision you need to slow down that decision. So buying a house, buying a car, sleep on it overnight. Sleep is a wonderful way that the way, we call, consolidates memory. So basically it takes all the information you've gotten during the day and essentially categorizes

them. So if you slow down decisions, including overnight sleep, then generally you'll make better decisions.

So you've seen all those infomercials like how they always say, "Buy now! You've gotta get it in the next 2 minutes!" Well there's a reason for that. You're not actually using all your cognitive resources when you make this snap judgement. So to the extent that you can slow down decisions, in general, they're gonna be better decisions.

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FT: So slow down, you'll make better decisions. I like that. Same true with, I would say, food and consumption, right? Like if you just actually take a minute to think about what is a better choice to eat or what are your options as opposed to just grabbing and eating on the run. I find that that is especially true.

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PZ: I agree.

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FT: Alright. How about a memory growing up. Did you always, first of all, know that you wanted to enter into this field. I'm curious, and that's more of a sidebar, but the real question that I wanna ask is what would you say is a pivotal memory growing up that had something to do with money, that now as an adult you look back and you reflect and you go, "You know that was a very instrumental time and experience. It shapes the way that I think about money today"?

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PZ: Yeah that's a great question too, and actually I wrote about this story in my book. When I was 18 I worked at a gas station near a freeway in central California, and let me tell you, if you work at a gas station by the freeway for a year, you see every aspect of human life from the gang-bangers and the prostitutes and the desperate, the drunks. Anyway, one evening I was the

victim of a con. A very classic con in which a man claims he finds a beautiful piece of jewelry, a pearl necklace in the bathroom and blah, blah, blah. I open the cash-register and give him a 100 bucks. And so it became very clear within about 20 minutes that I had been conned out of that money and that the beautiful piece of jewelry I was holding was just cheap haste. So that really lead me into thinking about human beings more generally.

I grew up in a safe environment, I didn't know about bad people. I didn't really, you know, I hadn't found the experience. And so I think it makes you a more skeptical person, a more thoughtful person, and I certainly became interested in human beings and human nature, and more generally, this kind of sense of good and evil. It is interesting, looking back now 30 years later, this poor guy has taken advantage of an 18-year-old high school kid to make 100 bucks. I mean, it's kind of sad right, that that's your best earning opportunity? So yeah, I think that was foundational for me in terms of wanting to study human beings, including studies that involve money. To really understand how the economy works and how human beings interact with each other in economies to create wealth, to support themselves, and also why that sometimes fails.

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FT: So any thoughts on how we can solve this Greek Debt Crisis? [Laughs]

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PZ: Well, I do. I mean, I was in Greece a couple years ago with my daughter who's about 13 at the time. And listeners will know, 13-year-old girls don't generally hold hands with their dads. We got to Athens and she held my hand the entire time. Greece is not in good shape. So it's too expensive! They need to go off the Euro and re-adopt the Drachma. That'll cause a de-evaluation. It will, initially, certainly worsen the real depression that they're in, but it'll allow them to compete more effectively in the global marketplace. The prices, I mean the Greeks have always had poor economy in the last, I mean since the 60's honestly. And so to have a poor economy that's very expensive is not doing them any good. And it doesn't mean the rest of the Eurozone fails, it just means I think Greece should not have been admitted. So anyway, that's the simple solution. I think we should just accept that it was a mistake to put Greece on, and

then they can be master of their own house and they don't have to have Berlin or whoever tell them what to do.

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FT: Right. Yeah, it'll be a tough - that sounds like a very tough short term adjustment, but in the long run it's probably what needs to happen. It's a tough choice. What about a So Money moment? Well actually, first, let's talk about failure because I think we can all agree that with failure comes, often times, it's just like your story. You were conned, but it was this really interesting awakening. What would you say is your biggest financial failure? What did you learn? And what kind of grew out of that?

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PZ: You know, gosh, I have so many. So I should say, for listeners, probably two thirds of my portfolio is in index funds. So I don't actively manage it, I let it move with the market, and then about a third I actively manage. And in some of that third I try to invest in areas where I think I have some expertise, and particularly in biotech and in the neuroscience realm where I think I might be able to understand the literature and the potential market for these different drugs and devices maybe better than the general public, or even analysts. But sometimes you make mistakes. So many years ago my brother in law was involved in a startup, a very interesting company that had a very interesting product. It had patents, it had professional management who had run large companies, and I invested in their initial public offering. And it was a huge mistake because the guys running it, even though they had great resumes, were either inept or conmen, or both.

So going in there, I mean I got - I did the stuff you were supposed to do. I went to their offices, met these guys, shook their hands, and then wrote them a check, and from the get-go it was a problem, right? They didn't do quarterly statements, the accounting was a mess, the whole thing was a big fail. And I thought somehow because my brother in law worked there, who was a great guy and is a great guy, that I had some inside information. So I think the old saying, "If it looks too good to be true, it probably is" is correct.

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FT: Okay, let's flip it now and talk success. Your proudest financial moment, So Money moment.

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PZ: Yeah. I mean, there are some really nice ones that I've had and one of those was a device, I had an appointment in a neurology department at Loma Linda University Medical Centre and I remember going to a - the seminars in medical school are called "Grand Rounds" - so going to a grand rounds and having a presentation of a device that was FDA approved to relieve epilepsy, so stop seizures. And it's a device that's implanted in the chest and works in a very interesting pathway in the brain. So we know these plantable devices now are really big, but this was about 15 years ago and they were sort of off-handedly the rep for this company said, "Oh, we're starting to do trials for depression so this device may actually also treat depression for people who fail pharmacological treatments." And bam that light went off, and I said, "Oh that's a huge," - I mean depression is a much bigger disease than is Epilepsy. And anyway, a company that's called "SaRonix" invested probably a couple hundred shares and I think I made a 400% return. I mean the take-home is listening carefully, but I think being focused on, for me at least, being focused on one industry or one and half industries, kind of neuroscience, medicine, and just try to pick up these little pieces of information that other people may not find. And let me tell you, they don't come very often, but when they do I think it is worth acting on.

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FT: I suspect that you might be a man of good habits, and I'm just getting - that's my sense of things. When it comes to money, what would you say if you number one financial habit?

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PZ: You know what I did many years ago, was I did for my pay cheque, a direct transfer from when my cheque is deposited the first of the month to my Vanguard index fund. So every month a set amount of money is taken out. In fact, when I get a raise I increase that amount of money, so every month I just don't see that chunk of money. It goes right to the index fund, I like

Vanguard because the rates, as you know, are very low to manage the funds. So it's just kind of magical. And I think the magic of compounding is the most amazing thing. And you've just gotta consistently put money away to be able to build up enough wealth. So yeah, make it automatic. I don't wanna be, I hope I have good habits, but I don't wanna be driven by, "Gosh, look at that beautiful car!" Or whatever thing can catch your attention. It just disappears and then, yeah my pay cheque's smaller, but after a while you just don't remember it.

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FT: I get a lot of questions from, well my younger audience, say the 20-something subset. They sometimes write in wondering how they can get started in investing. And I know that's just code for "Farnoosh can you give me some good stock picks?" Or, "How do I beat the market?" And I would love for you to kind of direct an answer to them and say, "Here's my best advice if you're just starting out in investing. I mean, my theory is that you can't really - sorry that's my son crying in the background. [Laughs]

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PZ: Oh! We can take a break?

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FT: Yeah, no, no it's okay. He's with his nanny, and I'm in the middle of moving, so I normally record this in another part of the apartment, but I'm in flux right now.

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PZ: I love children! And it's nice to hear them in the background. Even if he's making a little noise. It's great!

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FT: He's a good boy. He's a good boy. He's probably just tired or hungry. So, yeah, what advice would you have for a young adult who is really, really hungry to get into the stock market - the stock market! You know, they hear all this cool stuff about it, they watch TV, they think it's gonna be this great opportunity now to invest when they're young. What would you say to this person?

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PZ: Yeah that's a great question. And even I have two daughters who are 12 and 16, and we do talk about stocks and the stock market, and they have small index funds that we'd set up for their college. And so one thing is just to read a lot. And to read critically. I think the Wall Street Journal is a wonderful source of information. The second is, to understand that every year something like 75% of the actively managed funds, by professionals with lots of experience, do not beat the market. And you know, I think the first thing you wanna do is just set up an index account. Could go to Vanguard, could go to Fidelity, could go somewhere else, and just have money in the market and kind of track what's going on there. Read the news, and take some classes. As I said, I have an appointment at a medical school, and actually often the worst individual investors are physicians because some of them believe because they have so much deep knowledge about medicine, that gosh, how hard can it be to pick stocks? Often they lose a lot of money because it requires training.

So I think start slow. There are some wonderful websites now where you can trade on paper. You can actually make decisions and see how they occur before you start trading for real. So it's like playing golf. You wouldn't, if you've never played golf before, you wouldn't get a pair of clubs and balls and go right to the PGA course in wherever, in Scottsdale, Arizona. You would go to the driving range. So I think stocks are the same way. You wanna trade on paper for a year, until you really start putting some of your own money in the market and the nice thing now is you can put in your fractional shares. You can buy 5 shares and see what happens. I think the first thing is to really understand how markets work, talk to a lot of people, take some classes, education is really important, and start with an Index Fund, and just see how that moves.

And lastly, I don't know about you Farnoosh, but it drives me nuts when I watch the guys on TV say, "Well you know, "Bob the market went up 5% because..." Well the because is complicated right? There are many forces that drive markets to fluctuate day by day, month by month. And

so when one builds a portfolio, and there are wonderful tools online, that I'm sure you've talked about, to build efficient portfolios that have solid returns and low risk. It takes some time to understand that there are internal dynamics within markets based on sentiments, based on psychology, based on momentum, that drive prices to fluctuate very highly. So I mean one of the things that blew me away in graduate school was you can actually forecast the S&P 500 with 100% if you use annual data over 30 years or more. I mean you can just put a straight line through it. It moves beautifully.

But once you reduce that time frequency, once you get down to a month, a week, a day, the ability to forecast what the market's gonna do goes to essentially zero. And so it's very, very tough if you're a high frequency trader to consistently make money. So look for the long term, get educated, talk to people, go to seminars, listen to So Money. Learn as much as you can.

[00:25:51]

FT: Thank you! Yes, yes. Otherwise it's just like throwing darts. And even when you have the education, sometimes [chuckles] it can be like throwing darts when you stock pick, not when you are using index funds. Dr. Zak, what would you say you would do if you won \$100 million tomorrow? First thing you would do?

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PZ: Gosh you know, I'm such a saver. It's terrible. Even as a child I was a saver. I think I would, my one weakness is I grew up by the beach and I don't live by the beach now. So I would buy a beach house, and honestly, I would invest the rest. And mostly in index funds. Maybe some in real estate, for some diversity.

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FT: The one thing that you spend your money on that makes your life easier or better is ____.

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PZ: Gosh, having a nice car. I drive a lot cause I live in Southern California, and it is so nice to have a nice car.

[00:26:46]

FT: Yeah, you spend a lot of time in that car. Are you in LA or San Diego?

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PZ: I'm in LA County, right. And so yeah, you know, you have to really be comfortable in that car cause it's gonna be many, many, many hours.

[00:26:57]

FT: [Laughs] My biggest guilty pleasure that I spend a lot of money on is ____.

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PZ: You know, I spend a lot of money on my kids! [Laughs]

FT: Cool!

[00:27:07]

PZ: I'm such a softy! I just love to take them out and do fun things with them. And actually though, there's good neuroscience research that we are actually much happier when we spend money on other people than we would spend money on ourselves. So again, that's part of our social nature. So yeah, share the wealth.

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FT: Hopefully they appreciate it!

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PZ: I hope so too!

[00:27:26]

FT: [Chuckles] One thing I wish I had known about money growing up is ____.

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PZ: I think it's really this magic of compounding, that the earlier you start saving, however you're doing it - at the bank, savings bonds, index funds - that over time those returns compound and it's really never too early to start.

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FT: When I donate money, I like to give to ____ because _____.

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PZ: You know, I always give money to childhood charities. My two favourite, if I can mention them, are..

FT: Yes, please.

[00:28:01]

PZ: World Vision which supports children in developing countries, and Saint Jude's Children's Hospital. We've done a lot of work on why people donate to charity in my lab, neuroscience experiments, and we've actually used fund raising pleas from Saint Jude's with permission and anyway, they provide free care to children, primarily with cancer and other very serious diseases. So it's a non-profit, they're very efficient with their money, so anyway. Send it to the kids.

[00:28:35]

FT: Yes, yes. That's good. It's important. They have to be efficient, you know. Otherwise it's really, it's not a good idea usually to give money to a charity that's gonna give a lot of that dollar to overhead.

PZ: Right.

[00:28:49]

FT: And last but not least, I'm Dr. Paul Zak and I'm So Money because _____.

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PZ: Because I think money tells us about how we connect to other people. It's not just about ourselves, it's about our connection to our communities and so I think seeing money as a way to, both assign value, but to make our lives happier, healthier, and more fulfilling, I think is a valuable way to think about why we are So Money.

[00:29:19]

FT: Yeah, it's not just about you, it's about your community. I love that. Thank you so much, and we wish you continued success!

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PZ: Quite a pleasure to be on with you Farnoosh. Thank you so much!

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[END]