

Master Self Control & Overcome Procrastination | Dr. Kentaro Fujita

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SUMMARY

In this episode of the Huberman Lab Podcast, Dr. Andrew Huberman and Dr. Kentaro Fujita discuss the science of self-control, motivation, and the psychological mechanisms that influence our ability to achieve long-term goals. They explore concepts such as intrinsic versus extrinsic motivation, the importance of understanding one's "whys," and the role of social connections in enhancing self-control.

- Understanding one's motivations can significantly improve self-control and decision-making.*
- The famous marshmallow experiment highlights the importance of delay gratification and its correlation with future success, though its interpretations have evolved.*
- Intrinsic motivation, or doing something for the love of it, is crucial for sustaining effort over time, while extrinsic rewards can sometimes undermine intrinsic motivation.*
- Psychological distance can be created through techniques such as self-talk, visualization, and adopting a third-person perspective, which can enhance self-control.*
- Embracing imperfection and finding beauty in mundane tasks can foster a sense of purpose and connection in life.*
- The balance between pursuing single versus multiple goals is essential for overall well-being, as humans naturally juggle various motivations and aspirations.*
- Nostalgia and music can serve as powerful anchors, helping individuals connect with their past motivations and experiences.*
- The dynamic interplay between emotional states and self-control emphasizes the need for strategies that allow individuals to navigate their motivations effectively.*

In my own research, we have shown that if we can get people to think about their whys, the purposes behind their decisions, the broader purposes behind their what they're doing, they're much more likely to be able to overcome the temptation. So, if there's a piece of chocolate cake in front of me and I'm trying not to eat it, if you said, "Oh, I'm I'm not supposed to eat that because I'm on a diet." That doesn't have much magic to it. But, if instead I'm saying things like, "I need to do this for my family. I want to look good for my children's wedding photos." Or, you know, "My children are looking at me. I want to be a good example." Or all these other kinds of reasons that you might have these higher order reasons that you might have for getting healthier, being fitter, or whatever, not eating the cake, we show that that increases the odds that people will avoid the cake.

And we think it's cuz it's giving people meaning. If these are higher order things that I care about, and these are what's going to motivate me to hold out. Welcome to the Huberman Lab Podcast, where we discuss science and science-based tools [music] for everyday life. I'm Andrew Huberman, and I'm a professor of neurobiology and

ophthalmology at Stanford School of Medicine. My guest today is Dr. Kentaro Fujita, professor of psychology at Ohio State University, and an expert in the science of self-control and motivation. If you're somebody who has ever struggled with procrastination, sticking to a goal, or coming up with the goals for your life, today's episode is for you. We start off today's discussion talking about the famous two marshmallow experiment, the one where they placed kids in a room with a marshmallow and told them that if they delayed gratification for that marshmallow, meaning they didn't eat it, they would then get two marshmallows.

Those experiments received a lot of attention in that they were supposed to predict whether people would be successful later in life. We talk about the criticism of those experiments, but also how some of those conclusions were valid, and more importantly, how people of any age, including you, can build mental resilience and your ability to experience deferred gratification toward your goals. We also talk about intrinsic versus extrinsic motivation. These are topics that are very misunderstood out there, but Dr. Fujita clarifies that when we receive rewards for something we are naturally inclined to do, meaning that we love, it does not reduce our motivation to do that thing. And this is an important point and we go into it in terms of the practical steps for building and maintaining your progress on goals. We also talk about what the data say about the specific steps that are most effective to both initiate and reach short and long-term goals. We also talk about how to get out of impulsive states and states of procrastination.

What the data say about how to do that. Today's episode is really focused on science and more importantly practical takeaways, several of which I plan to incorporate into my own life. I only wish I had this knowledge when I was younger, but now thanks to Dr. Fujita coming on the podcast, people of all ages can make great use of the information and data from his studies. Before we begin, I'd like to emphasize that this podcast is separate from my teaching and research roles at Stanford.

It is, however, part of my desire and effort to bring zero cost to consumer information about science and science-related tools to the general public. In keeping with that theme, today's episode does include sponsors. And now for my discussion with Dr. Kentaro Fujita. Dr. Kentaro Fujita, welcome. Thank you. Really excited to be here today. I'm super excited to talk to you. We hear so much about motivation, discipline, willpower, tenacity, but we really haven't had a modern update on the psychology of these in a long while.

Not just on the podcast, but I think most people have heard of the so-called marshmallow experiment, which hopefully you could explain to us. Tell us what it revealed, some of the criticisms, maybe even some criticisms of the criticism, because I think the marshmallow experiment, which everyone will learn about momentarily if they don't already know what that is, sort of stands as this, you know, symbol of whether willpower is somehow innate or whether it's something that can really be cultivated. So, if you would, uh what is the marshmallow experiment?

>> So, the marshmallow test was actually a series of experiments that was conducted by Walter Mischel uh in the '60s to '70s to '80s at Stanford. And what happens in the classic paradigm is a child comes in and is seated in front of a plate with some kind of thing that they really want. Generally speaking, it was a single marshmallow. And the children were told that the experimenter was going to leave for a while, but if they could avoid eating

the one or or basically hold out and not eat [snorts] the one, and it was still there when the experimenter came back, they could get two marshmallows. So, this is essentially [snorts] a self-control problem because you have a smaller, sooner reward, and you're sort of trading that off with a larger, later reward. And the key dependent variable here was how long the child could wait.

Now, the dirty little secret about the marshmallow experiments is that no child waited the full 15 minutes that the experimenter was gone, but what you could do is you could basically, as soon as the door closed, you would start the timer, and then the the amount and and you were just basically looking to see how long the children would wait. That was interpreted as the child's delay of gratification ability or the otherwise self-control. Now, there were a series of experiments that we can talk about. Um they used these experiments to learn a lot about the different tactics and skill uh tricks and tools that kids could learn to use to improve their delay of gratification, but that's not what everybody knows. What everybody knows about these experiments is that many years later, they analyzed data in which they looked at children's delay times. So, again, how long did they wait before they indulged in the one uh one marshmallow, and then they they they saw to what extent it was correlated with important life outcomes like academic achievement, career success, income, uh even things like incarceration, social relationships, and what they found was shocking. The longer children could wait before eating the single marshmallow, the more likely uh they were to have to do well in school, more likely make more money, have more friends, have better physical and mental health, uh and also have lower incarceration uh and problematic behavior social behavior reports.

Uh and so this got people really excited about self-control because it was like it suggested it was a key skill for important life outcomes. And this is what generated a lot of that excitement. Did any of the kids actually get two marshmallows as a reward? It depends on the data set. So, research has now shown that the marshmallow test waiting times depend on a lot of things. Um so, in the original experiments, there were something like 15 minutes. Others experimenters have shortened that time to 10 minutes, and that's a little easier for children to do. Another really important thing about the marshmallow test is that the child has to trust the experimenter. If you don't trust the experimenter, why should you bother waiting, right? It's perfectly rational just to go ahead and grab the one if you don't trust the experimenter's actually going to bring you two. Um so, there have been experiments in which the experimenter looks reliable or unreliable in front of the child, so they forget something or they remember to do something. And when experimenters are unreliable, children do not wait. They just go and grab the marshmallow. And it's been argued that that's actually a sensible rational behavior. So, the setup here, it sounds really simple, but there's a lot of uh art behind this to make this experiment work the way that's supposed to.

Is it a leap to assume that the adage that children who observe their parents doing the thing that the kids are told not to do are less likely to follow instructions? For instance, if parents say, "Listen, no electronic devices until after dinner and you've done your homework." and then the kids see their parent look at their phone, uh does that reduce trust in the parents' advice? I don't know if it reduces the trust in the parents' advice, but there is a lot of research on what's known as social modeling. Uh the most famous experiment of this, they brought in a blow-up doll, which they it was a clown, uh and it was referred to as Bobo.

Uh and kids either watched the video of an adult punching Bobo or being nice to Bobo, and then we're allowed [snorts] to play with Bobo themselves. And those that watched the the adult punch Bobo were more likely to punch Bobo themselves. So, this suggests that children are very observant for own behavior. And so, if you are acting in a certain way, children are learning that that's the appropriate way to learn. So, I don't know that it's been done specific on self-control. It may have.

Um but certainly in many, many other behaviors, children are remarkably observant of what adults do. I won't hold you responsible for defending or holding up the marshmallow experiments, but they've received a lot of criticism over the years. As have many paradigm-shifting areas of psychology, right? I I mean, I or or neuroscience. You know, I think it's uh important for everyone to know that the moment that there's sort of a theory put forth, like growth mindset or for the developmental neurobiologist, the idea that all neurons in the cortex migrate radially, like two, five years later, someone's going to find an exception to that, and then the whole thing seems to crumble, but then it sort of comes back where the answer is both.

In terms of the the marshmallow experiment, I've heard a lot of criticism. It wasn't as predictive as we thought. Maybe the experimenters were um sort of bi- biasing the data collection. What are the valid criticisms in your view? And what are the criticisms of the criticisms in your view? So, as I mentioned, the marshmallow experiments or marshmallow tests, they have to be set up right. And like a lot of other psychology experiments, I think the psychologists kind of intuitively understood what it took to get it right, but we're not very good at articulating those for others to follow in kind of a recipe book. The most famous criticism or the one that got the most press recently is that there was a very large data set of children outcomes in which they completed the marshmallow test at 4 years old and then a bunch of different life outcomes at adolescence. And so they basically wanted to see whether they could replicate the marshmallow test.

And they In principle, they should have. And they did and they did not. So, if you looked at the simple correlation between did delay time predict outcomes like academic achievement and problematic behavior, the answer was yes. It seemed to replicate. But then the the the researchers controlled for things like social economic status, which is one of the criticisms of the original Stanford studies because Stanford children, or at least the children that were going to the Stanford University daycare where these experiments were being conducted, were not your average American family.

Mostly well-to-do. And this matters. And so when the researchers they had like 30 or 40 other covariables that they were controlling for. When they controlled for all these other variables, children's delay of gratification was no longer predicting these outcomes that was supposed to. And so this paper got a lot of attention for basically saying, "Look, there's this The marshmallow tests are bunk." Now, this has been controversial because the question is was that statistical adjustment appropriate and are we interpreting that statistical adjustment correctly? Um there have been other experimenters other researchers who have come along. One of them is named Yuuko Muna- Kata and her team. They took the same data set and they reanalyzed it with a different set of assumptions, a lot more conservative. So, rather than 30 throwing in 30 covariates, they put in theory-driven covariates, ones that made sense from what we know already about research as opposed to like throwing in the kitchen sink.

Um and when they did that, they still found that delay of gratification predicted reports of problematic behavior, which suggests a very clean replication of the original marshmallow test. So, you know, some people have suggested that that failure to replicate the original marshmallow test, it got a lot of attention, but it may not have been the final answer because these experimenters, again, came along, looked exactly the same data set, and came to the opposite conclusion. So, there's still a bit of a debate out there, but I think the main point to take away here, again, is that the way that you set up the marshmallow test is really important. You have to have trust, you know, and the argument about social economic status is that kids who grow up in high SES environments, they're very stable, they're very predictable. So, when you wait, you are more likely to get the larger later reward. But, if you come from a lower SES family, where rewards come and go, and people and, you know, just because you save now doesn't mean it's going to pay off later, they're not going to wait, and so it's not as indicative for them. So, all of these things have to be carefully controlled for, and they were part of the original experiments. Again, not really well articulated. To the extent that you can create a situation where people do trust that they will get the larger later reward, there does seem to be some predictive ability of this test. Now, let me just say as a self-control researcher myself, I think people are missing the boat. What is most interesting about the marshmallow test is not whether or not they can predict outcomes later. And that that's very nice to convince people that self-control is important. If I'm applying for federal grant money, for example, that's probably the first sentence that I write, that, you know, that's that self-control predicts life life outcomes. There've been many, many other ways of testing this hypothesis, so I don't think we need to rely on the marshmallow test to make that point anymore.

The most important thing about the marshmallow test that gets completely overlooked, refer- goes back to something you said earlier, Andrew. Is it an innate talent, or is it something that we learn? The most important experiments, Walter Mischel and his team were teaching children the strategies of self-control. And when children learn them, their delay ability got better. That is a really, really important lesson because it suggests that self-control isn't something innate. Instead, it's something that we learn over time. Let me just give you an example. So, one of the things that he taught children was is it better to stare at the one marshmallow or close your eyes? Cover it up or close your eyes? Three-year-old children believe that it's better to stare at it cuz they think that's how I'm going to motivate myself. Like if I can see what I want, I'm going to be able to wait. Right? I can see the one, I can imagine the second, I can wait longer.

Five-year-olds learn that that's not going to work and they learn to cover it up or close their eyes. Interestingly, this basically you can create a written test where you can ask or a verbal test where you can ask children what do you think you should do in order to wait longer, and research shows that children who Well, let me let me let me be more careful. Research shows that there are age-related differences. So, at 3 year old they don't know anything, but at 5 year old they've learned. And then later on at 13 years old, those children who correctly understand the quote-unquote rules of self-control have less problematic behavior. So, Walter Mischel and his team went to a summer camp for children with behavioral problems, and those that understood the rules that the the tricks that work and the tricks that don't work were less likely to have behavioral problems uh at that camp than those who did not. So, knowledge matters. Self-control can be learned. It can be taught. You can learn by trial and error. And I think that's really important because it suggests that rather than being something that we're born with, we can get better. We can grow. We can we can improve over time. And I think this is a really important lesson that often gets overlooked with these studies.

I'd like to take a quick break to acknowledge one of our sponsors, David. David makes protein bars unlike any other. Their newest bar, the bronze bar, has 20 g of protein, only 150 calories, and 0 g of sugar. I have to say these are the best tasting protein bars I've ever had and I've tried a lot of protein bars over the years. These new David bars have a marshmallow base and they're covered in chocolate coating and they're absolutely incredible. I of course eat regular whole foods. I eat meat, chicken, fish, eggs, fruits, vegetables, etc. But I also make it a point to eat one or two David bars per day as a snack which makes it easy to hit my protein goal of 1 g of protein per pound of body weight. And that allows me to take in the protein I need without consuming excess calories. I love all the David Bronze Bar flavors including cookie dough, caramel chocolate, double chocolate, peanut butter chocolate. They all actually taste like candy bars.

Again, they're amazing. But again, they have no sugar and they have 20 g of protein with just 150 calories. If you'd like to try David, you can go to davidprotein.com/huberman. Right now, David is offering a deal where if you buy four cartons, you get the fifth carton for free. You can also find David on Amazon or in stores such as Target, Walmart, and Kroger. Again, to get the fifth carton for free, go to davidprotein.com/huberman. Today's episode is also brought to us by Lingo. One of the most important factors in your short and long-term health is your body's ability to manage glucose over time. Glucose directly impacts our brain function, mood, and energy. You want your glucose relatively stable across the day without big peaks or valleys. This is why I use the continuous glucose monitor and app from Lingo by Abbott. Lingo provides minute-by-minute glucose data directly within the app showing you how your glucose responds to food, exercise, and stress. This information can help you make smarter choices to support your health both now and in the long term.

The CDC estimates that more than one in three American adults has pre-diabetes and that many of these people don't know they're living with pre-diabetes. Visibility about how your diet and activity affect your glucose can be the first step toward informed conversations with your doctor and making smarter daily choices. If you'd like to try Lingo, Lingo is offering Huberman Lab listeners in the US and UK 10% off a four-week plan. Just visit hellolingo.com/huberman for more information. Terms and conditions apply. Again, that's hellolingo.com/huberman.

I'm smiling as you describe the strategies these children take because I've seen some of the videos and we'll provide a link to those in the show note captions. They're adorable and in many ways they reflect the behavior of adults but in a much purer form. Uh I recall one where I think it was a young boy where he's like leaning into the marshmallow and he's and he's kind of doing like a yum yum yum yum yum like a like acting as if it but he's not letting himself do it and then he looks away and it seems to be that he's aware he wants to move. He's letting himself move but then he's pulling back. And as somebody who's uh currently training a puppy, I can tell you that the weight with placing food or a treat in front of the puppy and getting that what neuroscientists call top-down inhibition, the the suppression of impulse, um getting that trained up is so interesting because talking about a dog now but um my new uh you know bulldog mastiff puppy, he will intentionally look away from the food as a way to he's so tempted to eat it. So, I'll say look at me, that actually makes it easier for him. So, it makes it seem like he's more disciplined but I think all mammals, probably all creatures that have this top-down inhibition come up with these strategies and I have to assume that they're pretty unique not just by age but to the individual.

Agreed. And I remember one kid spinning around in his chair. >> Agreed. And it does seem to be that the impulse to do something is obviously involves movement. And it seems and I'm curious if there's any research looking at if people have an opportunity to actually move their body as opposed to sit rigidly and prevent movement whether or not they're more effective in suppressing impulsive behavior. I mean, in cultures um many cultures you have things like worry beads to to sort of dispel anxiety. Some people when they get stressed will go for a walk or a run and it does seem to work. It's almost like that there's a revving of the of the engine that drives movement. We could talk neural circuits but it doesn't really matter what those are.

And when we're trying to suppress any kind of behavior, being able to channel that movement elsewhere seems useful. Or what as I was taught as a camp counselor for young kids, be a channel not a dam because trying to get a bunch of young young kids to sit still is pretty tough. What you're saying is really interesting. So let me copy out everything I'm about to say with by saying this is all speculation. I personally don't know of research studies that look specifically at movement but everything that you're saying makes total sense to me because the root the Latin root for the word motivation is to move. Right? So the I motivation is supposed to be the energy force behind all of our movements. It impels action. So to me it makes sense that if I'm trying to motivate a particular behavior, being able to to act would be I mean it is a actually channeling my energy towards doing something. I mean there are experiments that I can tell you a little bit about Andrew where, you know, to try to train self-control, they will have people um uh quote unquote approach or avoid an object with a joystick. Right? So if you see something that you're supposed to avoid, you pull the joystick back so you creating psychological distance from the temptation versus on the things that you're supposed to approach like the broccoli you're supposed to eat, you're supposed to move the joystick forward.

And there's some research suggests that this kind of automatic, you're not actually moving but you know, you're taking action that's often associated with movement, that that can actually help improve people's self-control over time, help develop evaluations such that okay, the for dieters for example, the chocolate cake is bad but the broccoli is good. Having these movements towards the good stuff and away from the bad stuff um does seem to improve self-control afterwards. Again, the question is I I um you know, it's not quite what you're talking about in terms of actual movement. Um I think there's also some research. Again, this is I'm not I'm not exactly sure, but there's some research suggest that like if you fidget, you you might learn better um than when you don't fidget. There's also some research where if you are taking notes with pen and paper as opposed to a computer, you can learn better. And again, I'm not saying these be just because I think they're so important, but rather I just think they're nice illustrations of exactly what you're suggesting, which is there's something some really interesting connection between movement and motivation, which I think I I mean, I think that's a truism, but I think these are really interesting examples of that.

One thing I've been just grappling with for a number of years now is this concept that doing hard things makes it easier to do other hard things. And on the one hand, that seems obvious, right? Um because it's a process. The learning to recognize that the what I call limbic friction, that's obviously not a real scientific term, but that, you know, limbic system or more autonomically activated, we feel like, "Ah, we don't want to do it." Or we we or we're afraid to do something and and we have to push ourselves to do it.

That's a process that translates across things. Um sure, I I fully accept that, but as much as I believe that getting up in the morning, getting outside, getting sunlight, maybe taking a cold shower, getting a workout in can deliver people to a state of mind where they say, "Hey, you know what? By 8:00 a.m., I did a lot of hard things. Anything else that I confront during the day is going to be much easier." While I acknowledge that can be true, I also acknowledge from my own experience that doing a bunch of hard things seems to exhaust some sort of mental and or physical resource that actually makes it harder to both avoid certain things and to push through hard things later. And so, obviously, this depends on how hard you exercise, are you eating enough, are you sleeping enough, but assuming all things being equal, I'm just curious, is there a self-control resource center?

It could be distributed across neural circuits, it could be psychological, too, of course, but does something like that exist and is there any evidence for that in your work or the work of others? There's two thoughts that immediately come to mind with what you just said. The idea that, you know, you can learn by doing hard lots of hard things, you learn that you can do hard things and do other hard things. I mean, I think that's really interesting from a motivation perspective cuz you could argue that, you know, what's going on here is that there's some kind of self-efficacy component that when I've done hard things, my my self-esteem goes up and my estimation and confidence to be able to do harder things increases. And so, and we do know that as self-efficacy goes up, your your your ability to do things, your motivation goes up and your ability to perform also goes up. So, we definitely know that self-efficacy is a really important thing.

The other thing that you mentioned is the possibility of exhaustion. And I find this really interesting because it's a highly controversial topic in social psychology. >> [snorts] >> There was a big um boom of experiments um in the 2000s uh that suggested just what you're saying, that self-control is kind of like a muscle. And if I use it for one type of task, I exhaust it for all others. I have to wait in order for it to recharge before I can use it again, much like any other muscle.

Also, like any other muscle, if I keep using it over time, it should get stronger. And there were some evidence for both of those. Unfortunately, those experiments have um much like the Walter Mischel study, have come under come under attack for whether or not they can replicate. And the conclusions are a bit mixed. There's some analyses, they're called multi-lab experiments where a whole bunch of labs get together and they try to see if they can replicate something. And that way you get rid of experimenter bias.

There's some multi-lab replications that have tried to replicate this effect. So, what you do in the lab is you do one hard task that would requires self-control, and then you do a second one, and the prediction would be if you've done a hard thing first, then you should be worse at the second one. So, one multi-lab experiment did not show that it was that it worked, and another one showed it did. The one that showed it didn't work was led by people who conducted this research in the first place, so it was seen as very damning. Like, if they can't get this experiment to work, then it doesn't exist. And so, I think the consensus in the field is that it doesn't actually happen, or at least we can't get it to work in lab. Could you just for clarity's sake, when you say it doesn't happen, what specifically are you referring to? Let's say we have you do a task where you have to write something down with your left hand.

Okay, so this requires a lot of effort, requires a lot of self-control to Left-handers out there are like, >> That's right. No, no, no, no, no, no, no, no, opposite hand. Yeah, yeah, yeah, no, I'm just teasing. I'm just teasing. Then then we ask you to you know, do some other really difficult task, like some task that requires inhibition. So, the one example is the Stroop task, right? So, you see words in different color fonts, you're supposed to identify the font color, but if you see the word blue in red ink, although the right response is that it's red, because it's written in red ink, you automatically read the word blue, so you want to say blue.

This requires inhibition, requires you to stop your behavior, and research suggests that if you did the non-dominant handwriting first, and then you did the Stroop task, that >> [snorts] >> your Stroop task should become worse. In other words, you should have a harder time stopping yourself from just reading the word. Again, so if you've done the left-handed writing, then you make more mistakes, and you are slower in your responses at the Stroop task. That's what's known as the depletion effect, right? Cuz I got tired, and so therefore my self-control is worse until it recharges.

So, one of these multi-lab experiments, they tried something like this using different tasks, but you have given you a sort of an example of what kinds of experiments they run, and they could not replicate the depletion effect. Another multi-lab experiment though, smaller in scale and not by the original authors, they were able to get the depletion effect. So, there's a little bit of just mixed evidence and it's not clear whether depletion really is a thing. Now, let me say as a researcher myself, I'm in this really uncomfortable position where I actually think depletion is a real phenomenon cuz I experience it all the time in my own life.

Yet, I think the way that we have studied it in the lab hasn't been very good because much like the Walter Mischel studies, I don't think the original authors were very good at trying to explain what exactly you need. What are the implicit decisions that they're making to set up this experiment that makes it work. There have been some accusations of like cheating and monkeying with the data. I I I don't know about that, but my own take on this is I think depletion is real. I just don't think we figured out how to bottle it up in the lab.

We do know that people believe that self-control is depletable or at least willpower is depletable and the more you believe it, the more you show these patterns. So, there's amazing work by Veronica Job. She has this little questionnaire that she asks, you know, if you engage in a strenuous task, do you feel recharged or do you feel more tired? And those people who say they feel recharged, act recharged after doing a really hard task. So, it's hard people doing hard things.

But, for people who say that no, you know, I think it's exhausting, then when they're asked to do the experiment, they actually show the depletion effect. So, there's some evidence that people's lay beliefs about willpower might really play a key role in whether doing hard things makes you tired or whether doing hard things recharges you. Well, I'm going to stamp the belief into my mind that doing hard things makes other hard things easier because I do believe in the belief effects that you describe and that my colleague Ali Crum at Stanford has described for a number of different categories of of thinking and behavior. I also happen to like exercise and I happen to like the sorts of things that are supposedly building up willpower. So, I'm going to tell myself this, but your point is is taken, which is that our narratives about willpower matter a lot for whether

doing hard things makes subsequent hard things harder or easier.

I'm curious about the specificity of these kinds of effects. For instance, if people do any number of hard things, uh but they're told to pay attention to their internal process. Like, um can they feel their stress go up and then go down? Um maybe they learn to do some long exhale breathing to lower their autonomic tone, which we know, you know, slows heart rate, etc. Can people learn a process that then they can apply across different scenarios? Because I think one of the fascinating things to me about school, about exams, about sports, or at the extreme about, you know, screening for special operations. You know, we've had many people from the SEAL Team communities and other special operation communities on this podcast is this notion that maybe it doesn't matter so much whether it's cold water or it's exercise or it's um matrix math. It The point is that you have to get into that place of friction and then recognize something about where and how your mind and body go and start to work with that. And I think that cuz that's getting to a deeper layer of willpower and tenacity that you know, no one thing um can really we can say is like the best tool. Like, for instance, you're a you're a well-trained musician. Um having been a failed musician, I suppose I'm still a failed musician. I too am a failed musician.

>> you that not hearing the um the the notes come out of the instrument that one would want to hear and that that you're told should come out of the instrument is incredibly frustrating. I think it's every bit, if not more frustrating, than the inability to, uh you know, do something physical. So, it's not really about what we're doing, is it? It's really about being able to tolerate that friction, that frustration. Can people learn to recognize that state and push through that state and therefore translate it across everything from sport to instruments to school to parenting to whatever.

I think what you're saying is really interesting and I have a whole bunch of thoughts which I'm going to try to get out in a systematic and organized way. So, first, again, I'm not an expert in this area, but we do know that people have differential distress tolerance, how much unpleasantness they're willing to put themselves through and there are individual differences. As far as I know, it there there it probably can be trained and usually through exposure, but again, I'm not an expert in this area.

What I can speak to with respect specifically to willpower is that willpower training paradigms have shown to shown very limited success. So, for example, if again, imagine you're doing the Stroop task and you're doing hundreds and hundreds and hundreds, if not thousands of these trials. Another training exercise is you literally go home and you practice doing everything with your non-dominant hand as opposed to using your dominant hand. So, these willpower exercises, you do them for a week and you come back.

Some experiments have suggested that they do in fact improve self-control, others say that they don't and on average reviews of this literature have suggested that the effect is much smaller than you might hope despite all the work that you put in and it's very variable. So, some people will see some gains, but they'll be small and but many people will see no gains. That's about willpower specifically and this is at the point where I have to get a little bit more detailed.

I think there's a difference between willpower and self-control. So, willpower is one of the ways that we

improve and enhance our self-control abilities, but it's not the only one. And so, the other ones, I've already described some of them to you that Walter Mischel discovered with the delay of gratification paradigm. So, he wasn't studying willpower. He wasn't seeing He wasn't testing whether children could just gut it out and use their own brains to inhibit their behavior. Instead, he was looking at things like covering your eyes or covering you the bowl or turning your head or imagining the marshmallows to be puffy white clouds or imagining that there's a picture frame around it.

So, it's not real. It's just It's just the picture. Um all of these different behavioral and psychological strategies that children were using These enhance self-control without leveraging willpower. At this point, you could ask what is willpower? And there it's not actually clear in psychology what that actually means, but most people understand willpower to be the effortful inhibition or suppression of impulsive tendencies. So, there's a yummy piece of cake in front of me and I'm really tempted to eat it.

Willpower or inhibition is the active fighting of that temptation. Telling myself, "Don't think about it. Don't give in. Don't do something that." I think this is sort of the paradigmatic sort of version of of of self-control in which you use your mental muscles to push down those ideas. Those trainings are the ones I was telling are not very effective. But, training some of the other strategies that we might have like closing your eyes or imagining a cockroach crawl across the cake or asking yourself, you know, what your children would say if they saw you eating the chocolate cake after saying that you wouldn't.

All [snorts] these other strategies, behavioral and psychological strategies or tools, as we might refer to them, those can be taught and those can in fact improve your self-control. So, whether or not self-control is something that you can learn to get better at, I think the answer there is yes. Whether willpower is something that you can get better at, there I am not so sure. I have this kind of running theory in my mind, which is anchored in neuroscience.

We know that areas of the brain are involved in kind of more sophisticated processes where we can imagine ourselves now, think about our past, think about our goals in the future. Kind of a high-level strategy formation definitely involves the forebrain, but it's a distributed phenomenon. I think everyone agrees on that. And then we have brain areas that we know from stimulation during neurosurgery, brain lesions, etc. that they're kind of like switches. It's like they make you want to eat. They make you want to mate. They make you want to vomit. They make any number of things. These are hypothalamic, these are deep limbic and hypothalamic circuitry.

And I have this kind of what very crude idea that when it comes to suppression of behavior or it comes to aspirational behaviors like motivating to do something hard over time that when we find ourselves at a friction point, like we don't want to do something we should or we're having a hard time resisting something that we shouldn't that we have to go a layer deeper into the limbic system and hypothalamus. Like we just have to come up with contingencies that are much grosser than the than the like like like you said, like a cockroach on a on a marshmallow. It's like sugar's good, we have an innate circuit for being drawn towards sugary things, fatty things, yum. What is a like hardwired? So you So we go towards the vomit reflex a little bit, right? We We don't want to get up and go to class cuz we're exhausted and fatigue is real.

Fatigue is real. Shuts down our forebrain, so the circuits are impaired. Our hypothalamus is driving us to like go back to sleep. But we have to think about the fear of showing up in class for an exam and not knowing, you know, it's the it's the nightmare everybody's had at least once, right? So I feel like the the control strategy seems to be to go to a deeper layer of fear, disgust, etc. How well does the opposite work? Like how good is aspiration for good stuff? Because those are also powerful drivers of human behavior and and I'm curious whether experiments have been done to differentiate between sort of fear and love if you will to put it broadly to allow us to navigate all sorts of circumstances. But I love the idea that chasing love chasing desire all these great things but there are times when we have to be like oh no I got to imagine the cockroach or else this whole I'll go back to sleep. I'll hit the snooze button.

I think what you're saying Andrew is something super profound. More profound than you might think. So for years self-control researchers have assumed that the secret to self-control is actually doing exactly the opposite of what you suggested which is turning off the hot system but because they argue that these limbic systems these hot systems these more quote unquote animalistic systems are the things that make the temptations so powerful and so by activating those systems all we're doing is we're up regulating the temptation impulses. And so for years and and this is part of Walter Mischel's fundamental model for example and many many others they talked about making your cognitions cooler. In other words shutting down the emotional system and thinking very coolly and calmly about the thing in front of you in order to make the right choice.

I think what's profound about you're saying is that you've articulated two alternatives. One is that I fight fire with fire. So if this thing is pulling me I'm going to find something that's going to push me away. Right? And as you said the example would be like there's a piece of chocolate cake and I imagine a cockroach crawling across it. There's not actually very much research on that. The most most of the dominant models in self-control really talk about cooling your cognitions. You're you're told not to fight fire with fire that you need to be in a calm and collected state.

The reason I think what you're saying is true is that I have some other work looking at the other strategy which is you said finding love. So in my own research we have shown that if we can get people to think about their whys. Um, you know, the purposes behind their decisions, the broader purposes behind their what they're doing, they're much more likely to be able to overcome the temptation. So, if there's a piece of chocolate cake in front of me and I'm trying not to eat it, if I only think about cake-related things, that could be really difficult.

But if instead I ask myself, like and and even if you said, "Oh, I'm I'm not supposed to eat that because I'm on a diet." That doesn't have much magic to it. It's like it it's kind of sterile, so it doesn't move me in any way. But if instead I'm saying things like I need to do this for my family, I need to do this to get to my children. I want to look good for my children's for my children's wedding photos or, you know, my children are looking at me. I want to be a good example or all these other kinds of reasons that you might these higher-order reasons that you might have for getting healthier, being fitter, or whatever, not eating the cake, we show that that increases the odds that people will avoid the the cake. And we think it's cuz it's giving people meaning. It's infusing the moment, as you say, fighting fire like fighting fire with fire, not with fear, but with love. Like these are these are higher-order things that I care about, and these are what's going to motivate me to hold out.

What you're highlighting is it with your original example, something a little bit different than that, which is fighting fire by taking the positive and turning it into a negative. And my PhD student Paul Stillman and a colleague of his, um, Caitlin Woolley, they did some experiments in which they had people think about it's usually when you think about self-control, you think about the short-term or long-term gains. They instead had people think about the short-term losses of indulging. So, what are some of the things like what's the like think about the sugar crash that you would experience if you ate the chocolate cake, right? So, and they showed that that kind of served much like you were talking about the vomit response, it pushes people away far enough. They're in the short-term mindset, they're thinking about short-term things, the short-term is pulling them in, so they fight that with a short-term repellent.

And they found that that's also very effective for self-control. So your ideas are almost antithetical to what most people would say the status quo in self-control research. But for that reason, I'm super excited because my own work is starting to challenge that idea as is as Paul Stillman and Caitlin Woolley's that we might be able to use the limbic system. We might be able to use our hot reactions. We We don't have to assume that they're going to be bad but or they're going to they're going to pre- predispose us to indulgence but and make us susceptible to indulgence but instead they might be what inspires us and gives us the motivation to do the right thing. And I think that is really exciting.

Fascinating. And I'm so glad you you're doing that work. Um you know, we had David Goggins on this podcast. David author of Can't Hurt Me um and famed for doing hard things all day long. I I knew David before he had a book before he was public facing and I can tell you I met him at a meeting and afterwards he said he was running to the airport and I thought he meant like rushing to the airport cuz that's what that means to me. He was literally running to the airport. We're 16 miles away from San Jose Airport and he was he went in the back changing and like ran to the airport with his luggage. So he's always been that way at least uh as long as I've known him. And I think one of the reasons David is such a shining example of motivation is that he is very open about the fact that he listens to negative comments from social media in his headphones when he when he runs.

He's talked about that. He talks he tells himself what a piece of garbage he is if he doesn't do this. I mean he he basically flagellates himself into into doing these things and any attempt to suggest to him like, "Oh, maybe you could take like a more soft gloves approach." Like he's not hearing it. It clearly works for him. He's actually right now um I think he went back to the military. He's also in paramedic school. I think he's he's probably becoming a physician, too. I mean, he's a he's a remarkable example of that approach.

It's an approach that's very hard for a lot of people and some people would say it's pathological. I don't believe it is cuz it clearly works for him and the alternative was far worse. He'll tell you that as well. We could even talk about eating disorders, right? Anytime we have a discussion about suppression of the impulse to eat cake, you know, there's going to be a subset of people out there that are saying, "Oh, so you know, what you're talk talking about is is eating disorders, right? Switching the contingency. If I can avoid it, that's rewarding." Which is associated with certain eating disorders.

I love the idea that there's this other side that you could entice yourself with the positive outcome. What I'm

hearing you say is that if it's a short-term battle, like right now, think about the downside or the upside right now. If it's a long-term battle, you want to think in terms of long-term outcomes, both bad and good. Is that right? Should we have all of those in our toolkit? >> I completely agree with you. And I love the fact that you used the word toolkit.

Um my colleague Ethan Kross and I, we wrote a paper in which we talked about the self-control toolkit. Basically, we argue we have lots of different ways to enhance self-control. We speculate that certain tools might work better for certain people at certain times. We don't currently have a very good framework for predicting what would be the right strategy for this kind of person in this kind of situation. And so if you're if you're listeners are saying, "Wow, that totally would not work for me."

That's okay by me, too. I don't think there's going to be one tool that's going to work for everybody. The self-control toolbox approach uh explicitly um embraces the idea that different things are going to work for different people. So if you're the kind of person who's very act reactant, someone who says, "No, I can do it." Then you might want to think about all the bad things people say about you because you're going to react to it and say, "No, I'm going to do it." But, if you're the kind of person who tends to listen to what people say, and you incorporate their perspectives, and they're saying bad things about you, well, then that's probably going to have a demotivating effect, right? So, again, the strategy that works so well for one individual may not work for another.

>> [snorts] >> It may also be that certain self-control strategies work for certain contexts and not for others. So, for example, you know, for me, getting started with the workout is the hardest part. I have all I have a litany of reasons why I don't want to do this today. And so, for me, the hardest part is just getting on the bike, or starting to lift weights. You know, sometimes it's just putting on the workout clothes.

The strategies I use for that, I usually tell myself, like, you know, what would my heroes do in this situation? So, the quote-unquote, "What would Jesus do?" I think is a very effective strategy in those kinds of situations. You imagine someone that you really admire, or you imagine someone who looks up to you, and you have you want to be you want to be that person that you admire, or you want to be that person that people see in you. That for me helps me get going for ex- at the beginning of exercise, but when it comes to the end, when I'm like just pumping out that last rep, or I'm just the last minute of a really hard climb, these things don't work so well for me. Like, for me, at that point, I just want to grit my teeth and get it done. And so, willpower might be a better strategy. So, I think we have to explore the entirety of the self-control toolbox. We have to be And through trial and error, find what works best for us.

This is another reason why I would like to stress to your listeners that self-control is a skill that you tailor for yourself. And it's a lifelong journey, right? I'm not going to be able to get up here and say, "Do XYZ," and all of a sudden, people are going to be amazing. Instead, they have to try, and they have to fail. And it's in the failure where you actually learn the most, because you say, "Oh, that's not for me," or at least that wasn't for me at this time.

The reason why I find this approach really exciting and also hopeful is that I think a lot of people when they fail at self-control, they just say, "Oh, I'm a terrible person. I'm never going to get this. I just have bad self-control, bad willpower." But instead, the learning approach, the toolbox approach just says, "Okay, that tool didn't work this time." And failure represents an opportunity for self-growth and exploration and discovery, which makes it a lot more positively toned as opposed to wow, I really screwed up. I'm a terrible person. My goal is forever gone. And I think that's a really important implication of understanding self-control not as an innate skill, but something that you grow and cultivate over time with things that you learn.

As many of you know, I've been taking AG1 for nearly 15 years now. I discovered it way back in 2012, long before I had a podcast, and I've been taking it every day since. AG1 is, to my knowledge, the highest quality and most comprehensive of the foundational nutritional supplements on the market. It combines vitamins, minerals, prebiotics, probiotics, and adaptogens into a single scoop that's easy to drink and tastes great. It's designed to support things like gut health, immune health, and overall energy. And it does so by helping to fill any gaps that you might have in your daily nutrition. And of course, we should all eat high-quality whole foods, but most of us are probably not getting enough prebiotics, vitamins, and minerals, and AG1 ensures that those gaps are filled.

I get asked all the time by people if they were to take just one supplement, what would my recommendation for that supplement be? And my answer is always AG1, because it's just been so critical for supporting all aspects of my physical health, mental health, and performance by covering those nutritional, what we call foundational bases. And I know from my own experience and from everyone I've heard that I recommended it to, that they simply feel much better in a number of different ways when they take it regularly. If you'd like to try AG1, you can go to drinkag1.com/huberman to get a special offer. For a limited time, AG1 is giving away a week's supply of AGZ, which is their sleep supplement, and a free bottle of vitamin D3K2 with your subscription. AGZ is something that I helped design. It tastes great, and it's the only sleep supplement I take.

It has a collection of different things in it that has dramatically improved my sleep, both my slow-wave deep sleep and my rapid eye movement sleep, and I absolutely love it. Again, that's drinkag1.com/huberman to get a week's supply of AGZ and a bottle of D3K2 with your subscription. Is motivation something that needs warming up? I I've long chuckled at the fact that we understand that you need to warm up before exercise. Even it's running, you got to jog a little bit before you you you sprint.

Um certainly we need warm-up sets before we do our work sets. Everyone understands this. But for some reason, I think people assume that focus and doing hard things mentally um or creatively should be like a step function where you're like, "Show up to the work and you're like, focus." I like to think I've tried to spread the gospel of Look, it's going to take a little bit of warming up. Your mind's going to flip to other things. I mean, and you can drop into a groove. I mean, I think the the really interesting research on both the hypothalamus but also these these higher brain states, if you will, that the models say that they're sort of like an an attractor uh model where, you know, you sort like your your brain state is sort of like a ball bearing on a flat surface that's kind of moving around, and the ball bearing's moving and then over time it becomes more and more concave, and eventually focus you drop into a groove, but that takes time. It takes reps. It takes the mind picking up your phone again for the third time and then going, you know what, I just got to get this thing out of the room. The

that focus isn't just like a switch. Motivation isn't just like a switch. And I don't think people really they either haven't heard it or they don't believe it, but everyone is at least to my knowledge has experienced it. We're not robots. We're not robots.

And so, are there tools that people can use to either embed that knowledge or to, you know, move into focus states uh more quickly or more effectively, as well as move out of motivated states? Has anything been studied about transitions between tasks as something useful? Because we have dynamic lives, right? It's not just about the workout or just about the class or just about, you know, parenting or just about whatever it is. It We have to move from thing to one thing to the next, and these are very different brain circuits.

I think what you're saying is really fascinating. I love this idea of attracter states. Um in my own work, we don't have that kind of model, and we don't use the language of warming up. But we do know that there is a dynamic interplay between how you think about something and the motivation that you're experiencing. Right? So, if a workout is, you know, oh, another hour of pain, like we're not going to get super excited about it. But if instead you change your mindset about it, and and again, this is the power of work that Aliya Crum and uh folks who do growth mindsets think about, if you change sort of the cognitive orientation you have towards it, a different set of motivations can get activated. So, if I say, it's not an hour of pain, but instead of me becoming the better me, that set of cognitions, that set of thoughts, activates a different set of motives that comes to bear and and can then be applied to the task at hand.

Now, that's not quite warming up, but in some senses it is a warm-up. It's sort of finding the right set of thoughts that are working through your mind to maximize the motivation that you're experiencing at a given time. Another interesting thing to think about is that there's there's sometimes it's not just about the amount of motivation, but it's also the type of motivation. For example, many sports have an offense-oriented component and a defense-oriented component. And they probably require very different mindsets, and they probably also require different motivational orientations.

One of the most important orientations that we know from motivation science is an orientation towards um nurturance and advancement, moving forward, gains, versus an orientation towards safety and security, preventing losses. And there's been some speculation that the And there's been some research to support this that having the right kind of motivation for the right kind of tasks enhances performance. So, if I'm playing offense, right? There's always There's always that notion that you don't want to play not to lose. You want to play to win. Right? And that's particularly true of offense. So, in offense, you want to be about advancement, promotion, gains.

But when you're on defense, right? At times, it might it very well might be about preventing losses. And so, if that were true, and again, that's not true for every sport, but if that is true for a particular sport, you might do better if you're in a more promotion motivational state when you are on offense and a more prevention orient uh motivational state when you're on defense. And if you get that mixed up, you won't be as effective. So, when you get the match, research suggests that you enhance performance, but if you get a mismatch, you kind of have like not quite grooving, and you won't perform as well. You're not kind of not right. You're just not feeling

right.

You're not feeling fit. You know, there is research on regulatory fit, and it suggests that if you can if you can get task motivation fit, if you can find the if you can get yourself in the right motivation for the task at hand, you'll have enhanced performance. Now, the reason why I bring this up is because research that I conducted with my colleague Abigail Scholer and David Mealey, we've shown um that people have some insight into this. They know there are certain tasks that you're better It's better to be promotion on this task, and it's better to be prevention on this task. And they also kind of know the thought processes that they have to engage in in order to get there. So, are you going to be thinking about gains, or are you thinking about losses? Um Are are you going to be more in a sort of a uh uh uh again, uh security or advancement or security mindset, they can tell us that if I think this way, if I think about security or I think about advancement, I will do better on this task, which suggests that people have some insight into what not just the amount of motivation, but the right type of motivation to do well. And so, part of what you're talking about warming up might be that people are sort of trying to cobble together the right set of thoughts to get the right set right right motivational type, not just the right amount, but the right type in order to do the task at hand.

There may also be an additional complexity with the amount because we know not enough motivation is not good, but we also know too much motivation is bad. And so, you like Yerkes-Dodson rule, like the the U-shaped functions. You kind of want to be in the middle for ideal. You want to be amped up to be able to do the task at hand, but if you have too much, right, you might choke because it means so much to you that you just you just overthink things, right?

So, there there might also be regulation not just to maximize motivation, but the right type and at the right level for the task at hand. So, you can imagine your your colleague David Goggins going absolutely crazy at a daycare soccer you know, like some children's soccer game. That would be bad, right? So, you need to scale back motivation, find that sweet spot. So, I think there is a lot of this regulation that people kind of do intuitively. Some people probably do it better than others, and I love this idea. I've never thought about it as sort of warming up because it might take a couple of moments to actually get all the ducks lined up in a row so that the system is is operating functionally both cognitively, motivationally, biologically, at all levels to maximize performance, and I love this idea.

You also mentioned this idea of switching, and there is an extensive literature in cognitive psychology and it's called task switching, moving from one one set of tasks to the other and rapidly switching back and forth. There's something known as the switch cost. There's a sort of delay and a decrease in performance at the very point of switching because you're there's kind of an cognitive inertia. You're still operating under the old set and it takes some time to figure out how to switch into the new one.

Sort of zooming out a little bit, I think that's also related to research on disengaging, right? So, um you know, I've been pursuing this goal for so long and I get it and now it's done. It it doesn't really make sense to keep going cuz you've already accomplished it. It's time to move on to something else. There is some research suggests that that that disengagement process is very difficult. And we actually don't understand it nearly as well as we

understand persistence. So, because of research on and on self-control and grit, we know a lot more about persistence than we know about disengagement and it's an area of research that is really important for us to get into. We do know that disengagement is related to lots of positive outcomes it when the person is unable to pursue a goal anymore. So, for example, if you're a woman and you always wanted to have children, but you're now past the biological age where you can have children, it's probably healthy to disengage from the desire to have children. Similarly, if we age out of a sport or we experience some kind of catastrophic injury where we just can't do it anymore or there's some window of opportunity has closed, right? Research suggests that for people who are more adept at disengagement, they experience better mental well-being outcomes and they're able to re-engage in a new set of goals much faster.

But beyond that, we have to really understand more about the psychology of disengagement and how we know when to persist and when to disengage. That's a really important question, but we don't know very much about it partly because we tend to in our culture emphasize persistence and grit more than disengagement. Seems like what we're trying to do when we want to get motivated or when we're engaging self-control is we're trying to bring together state of mind and body and concept. So, there's the thought piece like I'm I'm a person who works out even if he doesn't want to provided I'm not sick or injured, right? Cuz I think it's important to have those caveats. I don't believe in the no days off thing. I take a day off every week.

I cycle my training, etc., etc. But I also believe in state of mind and body. And one of the things that's kind of um well, that just isn't discussed enough among high performers and I think in athletics, in academics, in music, etc. is that once you taste a really great workout once you taste flow state, once you taste neuroplasticity, like you grinded out and you learn something and you now have mastery of something there's this temptation to need to be in that perfect state in order to feel like you can do it at all. Like as you ascend the staircase that somehow like that's going to happen more and more often. And many people will assemble their entire lives trying to recreate those states.

And I think one of the beautiful things again about people like David Goggins, we've we've also had Coleman Ruiz, another uh SEAL Team Tier 1 operator, DJ Shipley, Jocko Willink. I think what's beautiful about that community is the way that they describe doing hard things, but actually they were weaned in BUD/S and in their other training from a place of suck. Like as Jocko, who's a good friend of mine, says, "You know, we start where it sucks. When your weapons are wet and you're cold and it's sandy, that's the starting line so that you completely recalibrate this notion of optimal performance." And I think that's something that we don't really have an analog for in the rest of the world, certainly not in academia. It's like get great sleep, uh maybe caffeinate just enough, be on the right place of that U-shaped curve, right? Uh or inverted U-shaped curve, not too stimulated, not understimulated, and on and on. And I think while all of that's great. It's one of the reasons I don't like the notion of optimization because ultimately, optimization is about for that moment. And the idea that we're trying to attain a perfect state before we can do the real work, I think is one of the more popular concepts about motivation. So, is it possible that we can rewire our thinking so that we're we start from a place of suck? Like maybe I should be doing my workouts at 3:00 a.m.

ala Goggins. But I don't do that, right? I like being rested, caffeinated. Do you see what I'm getting at? I I because

in terms of building real mental toughness, the ability to push into something when everything is like pushing back on oneself, that seems to require crap conditions. I think what you're saying is really interesting because I do think we know from research that people are incredibly creative at coming up for justifications to not engage in self-control. So, you know, I'm supposed to work out today.

Um my gym clothes don't match. Or, you know, I'm supposed to work out today, but it's too sunny. I'm supposed to work out today, but it's not sunny enough. It's raining too much. It's raining too little. Like people are remarkably creative at coming up with reasons to justify their indulging in their temptations. So, what's really interesting about what you're suggesting here is that you can just I I And again, I don't know that anyone's actually studied this, but this is sort of there might be sort of this bias or at least we we capitalize on a bias that things have to be just right for me to do it.

Like I have like I I I think of this when I'm writing. I um you know, I think a lot of us have this idea that like I don't feel like writing today. Like the conditions just aren't right, so I won't. I'll just put it off till like the muses hit me and it's just right, right? Um and you know, you learn over time that like you're every day is going to be that not so perfect day and so you just have to learn to deal with it and then once you get into it as you were talking about earlier, you might warm up to a point where now it's actually optimal, but it takes some time to get there. I think one of the things that's really interesting about what you're suggesting about the sort of optimization culture may be that we are embracing this partly because optimization is an exciting idea, but also it's it's a great justification for not ever doing the really hard things because the conditions aren't quite right. And again, I I think people are incredibly creative at coming up with reasons why they shouldn't do the the hard things.

In the moment of choice, it seems perfectly reasonable. And that's one of the things that's really frustrating and challenging about self-control because you mentioned the sort of idea of aligning concept with body. When self-control conflicts are far away from us, so when I'm thinking about you know, exercising more next year but not today, next year, it's really easy to to be able to say like that's that's the right thing to do. That's the thing that I really want.

But when next year becomes today right? All of a sudden my my mindset's in a different place and that choice is really hard again. It becomes really really hard. The clarity that I once had is gone. What's also frustrating with self-control is so that makes it hard to follow through with your intentions. But what's also really frustrating about self-control is as that moment passes and you're looking back at it sometime in the future, right? So now that that the day to start has come and gone and now you're looking back on it you have distance again and the clarity comes back and you're like why didn't I do what I was supposed to do? So again, one of the frustrating things about about self-control is that it's distance-dependent. The right thing to do is really clear when it's far away, but when it's close, it's hard to figure out what I should be doing.

And research that I've done suggests that this exists in part because our our minds shift in how we think about the event. When the event is in the distant future, it's more abstract. It's or distant future or it's happening to somebody else or it's hypothetical. When it's far away from me, it's [snorts] not imminent, I'm more likely to

think about it in terms of desirability, why I'm doing it. Right? It's going to be much more abstract. But as when that future becomes now, my mindset [clears throat] changes and I'm thinking now more and more about feasibility, how am I going to do it?

And much more much more concretely about what I have to do. And the problem is is a lot of these things that are hard, the whys are really positive, but the hows are really negative, right? That's because they're hard. And so, just at the point where I have to do the hard thing is when I'm thinking about why it's so hard the most. And then that's why I say I don't want to do it. And then again, time passes, distance passes, it gets farther away from me and I'm looking back at it and be like, but that was something I really really wanted to do because now I'm thinking about it in terms of why again instead of how. So, in order to try to overcome that, in in my lab, we've conducted experiments in which we have people think about um we we we bring them in and we have them think about their goals and why they're pursuing their goals or how they're going to pursue those goals.

We then give them a self-control conflict that's unrelated to those goals. So, they're just thinking generally about why or generally about how. So, this is again the frame of mind that we generally have when things are far away or the generally have frame of mind when they're close. You used the word warm up. So, we essentially warmed them up. And then we give them a self-control task and they have much better self-control when they've thought about whys than hows. And again, we argue that this is because we're simulating the mindset of when the thing was distant than when it was close. But that's the problem with hard things. When they're in the distant future, it seems like a really good idea. But and we can think about why we want to do it, when it's when we're actually have to do it, we don't think about why anymore. We think about how and the how just sucks.

And then again, as as time passes on, we look back, we're completely perplexed as to why we didn't do the thing when it was it's so clear to us that that was the thing that we really wanted to do. I would also um add, and feel free to disagree, that that the rewards that come after challenges to meet those rewards are are the real rewards. You know, I've I've been going on and on and on line for a few years now that, you know, uh dopamine and other forms of chemical reinforcement that come without effort, um while there are are examples of those that can be healthy or innocuous, most of them are are pretty uh detrimental, but there's nothing quite like rewards that follow intense, prolonged effort.

It's really interesting that you mention this because I think when we think about self-control, we tend to think about it as a binary. You know, so again, if we're going to use um you know, cake as an example. So, if I'm trying to lose weight and there's a piece of cake in front of me, usually it's a binary. I have this goal to lose weight, I also have this goal to eat the yummy cake, right? And those two goals are in conflict and I have to choose one of them. And that makes the decision actually kind of hard because it's one against one.

One of the things I think really interesting about what you're saying about doing hard things is that those are additional motivations that have nothing to do with losing weight, right? Th- those are additional motivations that fuel the long-term goal. So, I I was mentioning before, it's really important to think about your your whys. I'm using that in plural cuz it's not just the one why I want to lose weight, but it's I want to I want to be healthier, I want to be a good example for my kids, I want to show that I can do this, I want to become the better me, uh

you know, whatever all these different motivations.

Wh- It There's no reason why resolving a self-control dilemma should be a fair fight. Like, why should you give the temptation a a fair one-on-one challenge? Instead, I think you're you're kind of highlighting that growth, self-discovery, confidence, self-esteem, you know, um all of these other things can also, if we can leverage them, we we can become much more um much more powerful against the temptation cuz we just find additional sources of motivation to push through the things that we really don't want to do. And ironically, it's a self it's an upward cycle because the more you do it, right?

The the more positivity you experience, uh and so it's a sort of a virtuous cycle. Whereas, you can also imagine the opposite. If you give up, right? Then you say, "I'm not capable." And all those motivations start to collapse. I'm not going to become that person. I'm not going to grow. I am the person I was worried I was And all these You can just sort of hear this negative self-talk, and you can see it becoming a negative downward spiral. So, I really find what you're saying really interesting like like really like not just the phenomenon, but to really focus on it and say like, "I'm doing the hard thing not just for the one goal, but because I want that dopamine rush. I want, you know, I want my system to learn how to take this on, and I want to prove to myself that I can do it."

As I said, it's it shouldn't be a fair fight. We should stack the deck in our favor. Yeah, if the temptation is limbic, come in with more limbic, as well as high high-level concepts. Spread them out over time is what I'm hearing. Like, "What's the benefit now? What's the drawback now of making the wrong decision?" And then extend that out to like tomorrow, the next day. Spending a little bit of time on these things can can mean a lot. And in the end, what we're saying is a lot of time is really like a minute. Yes, right? Like, it's not like you have to sit down and do a journaling exercise, although I think from your work, it's clear that that can be beneficial.

I do also think that like it should get easier over time cuz as you said, we have these attractor states in our mind. And, you know, the first time we try to pull these thoughts together, it's herding sheep, right? [snorts] So, you're trying to get all these ideas and these motivations and these thoughts and these biological systems, motivational systems, cognitive systems all lined up, the first time you do that, that might take more work, but the more you do it, right? We know the mind likes to practice and be in the same places. I think at more of a time it should become faster and faster. So, this idea of warming up, which I really like, that you mentioned before, the warm-up might get easier and easier and easier the more I do it. Well, the concept of warming up came to me years ago when we would record neural activity in in the brain uh either awake animals or in some cases I had the benefit of of seeing this in humans. I have a friend who's a neurosurgeon. If you look at a an animal or a person doing a task and and you you could use functional imaging, so it's more non-invasive. Um or you could use electrodes, you could use calcium imaging and monitoring the activity of lots and lots of neurons.

You you don't see that like the the person or the animal like does this perception exercise and all of a sudden like the circuit that's involved like lights up. What you see is there's a lot of noise, what we call a lot of hash, not not the kind people smoke, but it's like it sounds like they're on the audio monitor. As they repeat the task over and over, the the signal becomes very, very clear, and you haven't made any adjustments to the equipment. Sometimes you have, and you start getting great signal to noise because the circuit just it's easy to track your

states, and then the signal noise goes way, way up. And I was watching this and going, "Well, these are like simple behavioral tasks or perceptual tasks of like telling, you know, uh you know, a person trying to say, "Oh, you know, the dots are moving up or the dots are moving, you know, on average down." And you just see like the brain goes through this like transition state. And then and then as people get sleepy, it gets a little noisier, and then it comes back again. I was like, "Oh, this kind of like explains a lot of my experience trying to study or to do things." One uh piece of knowledge that I'm really excited about that I'll just pass along, there's a guy down at University of Pittsburgh, Peter Strick, um who's an exerciser. He happens to like doing exercise, but he also maps neural circuits. And he discovered that the brain areas that control movement of the large musculature, when And become active, they actually activate the release of adrenaline when we move and the adrenaline then feeds back on those circuits. So, this is a reminder to anyone that doesn't feel like working out, the warm-up serves to increase these chemicals that then bring more signal to noise in the neural circuits that control movement. So, it makes sense why like after 5 minutes of warming up, you're like you're more motivated. It's it's not purely psychological. Anyway, I just kind of throw that out there. I'm curious about the role of of competitiveness.

Um you know, I when I was a postdoc confronted with being in an area of science where a lot of tools were coming in, it was super competitive, and it was kind of a first come first serve. There was some creative work involved, but like we all knew what the tools were, and we were all like going hungry hippos for these, and I was in competition with really big labs, and that competition fueled me in a way that I wasn't familiar with. I'm not I don't consider myself an innately competitive person about most things. I won't like be the guy who has to win at ping-pong, right? Um certain things I'm competitive about, but not others. But what I noticed was having a an enemy was incredibly motivating. And in the end, they got some and we got some, and we ended up being more or less friends at the at the end, but and it brought out our best. I like to think that it brought out our best.

Do people tend to kind of distribute along a normal distribution, or is it a binary distribution in terms of competitiveness? And to what extent are people that are competitive, like we have the example of Mike Michael Jordan, who apparently was like he was competitive about everything, apparently. To what extent are those people the people we call motivated? Are they just really really competitive? Because a lot of endeavors in life are not competitive, but a lot of them are, right? Getting at the you know, the setting the curve, being the one student who could or two students who can get A+ in the class, like you and I, you know, you went to Harvard, I'm at Stanford, you know, and you know, it's a very competitive environment. It's sort of the apex of competitive academic environments. So, how does competitiveness play into willpower and tenacity and self-control over time? Are those people just better at it?

But what happens when you remove the enemy? You remove the competitor? I think what you're saying is really interesting. Um and I too have heard a lot of these stories and I've always thought they were very interesting. I personally don't know of any direct work looking at competitiveness and self-control. Um the closest work that I can think of in my sphere and and there might be other research on competitiveness outside of the work that I typically read. Mostly has to do with achievement motivation, right? So achievement motivation is a lot like competitiveness in this I think competitiveness actually often comes out of achievement achievement motivation. Achievement motivation is sort of like a recognition for doing really really well on something and it's usually really really well relative to other people, right? So like achievement motivation, you

really want to be the person all the way at the top. Like that's maximal achievement motivation satisfaction if you're number one. If you're number two, you might actually get to that situation where now you're rivals and that fuels you to go higher and higher. We do know that achievement motivation is a motivation like many other motivations that's probably normally distributed.

Uh so so that the desire for achievement and achievement recognition uh will be stronger in some people and weaker in others. The thing to think about I think is although achievement motivation may be sort of um promoted by our particular culture, when I think of motivation, I think of much more of the the myriad or plethora of different emotions that we have the different motivations that we have that might motivate behavior in just as productive a manner. So I'm I'm I'm examining for I'm thinking about for example, we know that belonging motivation is really important for humans. Humans is a social species. We survived because we were in groups and we had others. A human alone is not very powerful, but a human in large groups is very powerful. So we've [snorts] evolved this motivation um to be connected and and socially intertwined with other people. But I'm sure you know folks that are super [snorts] belonging motivated and people who are not so motivated. And the people who are really motivated to belong to a group will do amazing things in order to belong to the group. If they get rejected from that group, they will they will bend, you know, heaven and earth to get back in that group and just do amazing things. So, I and then there are many other motivations too.

Motivations for power, motivations uh for um uh you know, control, uh you name it. There's there's a whole motivations for self-esteem, motivations for for competence. Um and so, you know, when I think of motivations, I try not to think of any one motivation, but sort of think about the aggregate motivation impelling pushing us towards a particular uh behavior. So, again, we were I was talking a little bit before about not giving the temptation a fair one-on-one uh fight, but actually bringing to bear all the motivations that might help you overcome it.

If you know what motivates you, you should use those and activate those when you need them strategically, right? So, if I'm someone who is competitive, then I might use achievement motivation to fuel my desire to do really hard things. Um but maybe I'm not that kind of person. And and you see this all the time, like I do Peloton and you see the Peloton instructor say, like, "If you don't want to see the leaderboard, get rid of it." For for some other people, it's more about being on the bike with other people. And that's what and and staying with the group, not being in front of the group, but staying with the group is what fuels them to do things that they didn't think they could do before. Again, just taking the idea of the self-control toolbox really seriously, different strategies are going to work differently for different people. And so, I think it's really important to explore and not just explore different strategies, but to really to explore yourself. To really say, like, "What really does motivate you? And I'm not sure that we always do know what really motivates us.

I think a lot of times we kind of discover what our motivations are by saying, "Ooh, I like this and I don't like this." But it's only through exposure. So, to go and explore and figure out what makes you tick and then to exploit and use those in your strategies. And again, the constellation of tools that works for me may not work for other people. I'd like to take a quick break and acknowledge one of our sponsors, Element. Element is an electrolyte drink that has everything you need and nothing you don't. That means the electrolytes, sodium,

magnesium, and potassium, all in the correct ratios, but no sugar. Proper hydration is critical for brain and body function. Even a slight degree of dehydration can diminish our cognitive and physical performance. It's also important that you get adequate electrolytes. The electrolytes, sodium, magnesium, and potassium, are vital for the functioning of all cells in your body, especially your neurons or your nerve cells. Drinking Element makes it very easy to ensure that you're getting adequate hydration and adequate electrolytes. My days tend to start really fast, meaning I have to jump right into work or right into exercise.

So, to make sure that I'm hydrated and I have sufficient electrolytes, when I first wake up in the morning, I drink 16 to 32 oz of water with an Element packet dissolved in it. I also drink Element dissolved in water during any kind of physical exercise that I'm doing, especially on hot days when I'm sweating a lot and losing water and electrolytes. Element has a bunch of great-tasting flavors. In fact, I love them all. I love the watermelon, the raspberry, the citrus, and I really love the lemonade flavor. So, if you'd like to try Element, you can go to drinkelement.com/huberman to claim a free Element sample pack with any purchase. Again, that's drinkelement.com/huberman to claim a free sample pack.

One thing I've been playing with a little bit recently in my own life is um >> [clears throat] >> just striving for immense consistency in certain things. Not trying to fail, but not focusing so much on on peak performance, but just without fail, every single night I have a particular practice before I go to sleep, and just no matter what, I show up to it. If I fall asleep, I get out of bed. There are times I'm like, "Ah, I'm not like fully focused on this right now. I'm not I'm having trouble fully focusing on this." But for me, it's really become an experiment in consistency. I think I'm like 2 years and some change now into it. And And so, it's tapped into this different part of myself that I'm not so familiar with, which is like not trying to get the best performance out, right? Um But that's great when it happens, but it's different. And earlier, we were talking before we went on mic, we were talking about abstinence versus moderation. And I'm curious what the data show. Uh and when I hear abstinence, obviously, it sounds like people trying to avoid certain behaviors. But I think we could flip it the other way, too. You know, is it uh you know, is it always the case that um you know, we have to show up to to the thing, or could you know, at our best, or like yesterday I was supposed to do a HIIT workout, and I confess, look, happens to me, too, folks. I was like I was due to do a for a high-intensity interval training workout, and I was like things were getting really compressed, and I thought, "What would happen if I just did the eight rounds of this on the assault bike?" But I didn't go all out.

And I'm going to just do the first two not lazy, but semi-lazy. And I noticed by the third or the fourth, of course, my motivation started to increase. And I was like, "Oh, this is really cool." It was It was informative for me. Because it showed me where the barrier was. It wasn't necessarily about the effort, it was about the concept. So, what What's the deal with abstinence versus moderation? When When can we tap into this as a useful tool? I've got a two-part answer, so it might be a little bit long-winded. I hope you remember both parts. So, the first part is that generally speaking, um psychology has tended to emphasize abstinence or consistency in self-control over the alternative, which is moderation. So, if have a lot of self-control theoretical models which stress the importance of patterns over isolated acts.

Once you have a pattern of behavior in place, it carries a a special uh hold over you that a non-pattern does not.

So, let me give you an example. So, I have an Apple Watch and it tells me if I've closed my ring for the day. And there was a point in time where that number was some huge number because I managed to be consistent for a really long time. And it's let's say it was 500. I had 500 and I wanted that to keep going.

And just knowing that I had that unbroken streak of 500 in and of itself became motivating to me above and beyond the desire to exercise and all the reasons why I wanted to do the workouts, right? So, these theoretical analyses have suggested that one of the things that helps us maintain self-control is the knowledge of the pattern. The pattern itself has strength over us in a way that doing something once every once in a while sporadically does not. So, if you're able to tell yourself, I do this I've done this every week for, you know, this every Sunday for every week of for the last x number of years, that has a special motivational power that perhaps even the same number of things even the same number of times you've done the activity if you've done it more sporadically, it doesn't have that power. Perhaps it could be just because you have the habit. Perhaps the habit locks you in the place and it's possible that, you know, we have like psychological and cognitive things that help us in place. Others have argued that, you know, we like the sense of completeness, the gestalt of having this pattern. Whereas again, the sporadic doesn't have that sort of orderly system, right? Um but one of the things that you might recognize is that patterns tend to lead to really rigid behaviors, right? So, when I was And had the streak going, I was like up at the middle of the night on a treadmill just trying to get my steps in just because I wanted to keep the pattern which was really stupid.

So, you know, they can take a life of their own which in some cases can be good but it can but the rigidity of these behaviors could also be bad. So, it was this idea that there might be um trade-offs associated with abstinence like drawbacks of abstinence that got my student Fung Lay and I really interested in if there were other alternatives. And the most common alternative is some version of uh moderation. So, at its extreme abstinence is doing like never indulging in the temptation or always doing the goal-directed option.

And moderation is generally doing the thing that's good for the goal but allowing yourself to have the occasional lapse. Now, I want to be clear here. This is not the same thing as failing because failing or just you know, justifying something post hoc you you're you're you're not talking about the pattern of behaviors. You make that decision in the moment and say, well, you know, the the cake looks really good. It's sunny out. It's beautiful. I deserve the cake and you eat it. That's sort of like a justification in the moment.

>> [snorts] >> When we're talking moderation, it's more kind of like I have the goal in mind and with the goal in mind, I understand that indulging once isn't going to kill that goal, right? So, so it's not that I don't have the goal in mind and I'm just want the temptation. I have the goal in mind. I'm integrating it with the indulgence and saying this one instance isn't going to destroy my goal. It's a lot like saying, you know, eating chocolate cake once isn't going to make you fat. Or eating a salad for lunch one day isn't going to allow you to lose weight. What matters is the sustained behavior over time. But you have choices about that pattern. You can either have it be completely consistent one thing or you can have cheat days. And so we were really interested in some of the tradeoffs. You think about some of the tradeoffs abstinence, as I just mentioned, leads to really rigid behaviors.

But computationally, like the choice is already pre-decided for you. You sit down, it's Monday, 5:00, that's your exercise time. You don't have a choice, right? If you're following an abstinence strategy, the choice is made for you. It's really easy. So it's computationally simple in principle, if you can hold on to that it makes much more rapid progress cuz you never take a step back. You're always going towards the goal. But there are some tradeoffs with this, like the rigidity, right? So it's Monday, 5:00 p.m., it's your daughter's wedding, but you're getting the workout in. Why? Right? Like that lack of flexibility is kind of crazy. Once the pattern is broken it's all or none. It's gone.

So if you're absent and you have a lapse, the goal is done, right? You can't go back. My point here is that there are some tradeoffs between abstinence and moderation. And we are really interested in trying to understand why people choose one versus the other for what kinds of tasks, what kinds of what kinds of goals, um and with the idea that maybe sometimes we're picking the wrong pattern for the goal at hand, right? So for example if I'm trying to be faithful to my spouse right? Abstinence is probably better than indulgence because the thing about being faithful to your spouse is that if you have the one lapse, you are no longer faithful spouse. Right? Sort of by definition, that's a situation in which you have failed and that goal is gone forever. On the other hand, for a student studying for an exam they can hang they can they can watch a little Netflix or they can study for their exam. Normally those two types of conflicts those two goals aren't in conflict, but if they're if it's the night before an exam, now they're in conflict.

Do they exclusively study or do they give themselves a study break? In that kind of situation, a study break might be okay because the taking 5 minutes for a study break doesn't mean that you fail at studying. But so so we're we're kind of interested in whether people pick certain kinds of strategies for certain kinds of conflicts, whether and also whether certain personality types might prefer certain kinds of strategies. So if I'm the kind of person who likes to keep things black and white, abstinence might be the way to go. If I'm the kind of person who likes variety, then moderation might be better.

Another thing that we're really interested in is why people pick the wrong one. And one of the things that we've been finding, some initial uh findings that we have from our lab, is that when you present people with targets, other people who have engaged in abstinence versus moderation, at least the participants that we've asked generally say that the person who engaged in abstinence has better self-control than the person who engaged in moderation. Which is interesting to us because actually moderation is more difficult.

So you could have said that the moderation person has more self-control than the person who's abstinent because that's the easy that's in principle the easier decision. But this suggests to us is that there's a there may be a bias that when people are saying, "Okay, I want to go on a diet. I want to exercise more. I want to uh do whatever." they might be defaulting to abstinence when in fact they might be better off doing some some version of moderation.

Fascinating. Uh two of the best pieces of advice that I ever got for my academic career but turned out to be valuable for all sorts of long-term goal pursuits um and just life is my dad, who's a scientist, you know, he said, "When I really hit the gas pedal on my academics cuz I was coming from behind coming out of high school." Um

he said, "Listen, you got to be a long-distance runner in this game. You know, you you there is a thing called burnout and you just have to figure out what you can do consistently. And then uh a neurologist at Berkeley who was also in the psychology department, Bob Knight, uh one time I asked him like what's the key to this whole thing? And he said uh um he said, "Find a non-destructive way to reset yourself each week and figure out what you can invest five or six days per week and update that every five years or as your personal life changes." So what he was saying was what you can do as a graduate student is different than when you're a post-doc and when you have a family and and I said, "What's your uh non-destructive thing?" And he goes, "Completely mindless activities, in particular fishing." I don't want to insult any of the fishermen and women in the in the audience. I have a lot of fishermen on my mom's side. Um but he just would go fishing, not think about science, not think about anything. I don't know if he did it with other people or not and that was his reset. And I think it as simple as that advice is, it was really valuable to me, which is why I'm saying it now because he was laying out a pattern. The week is it is a fundamental unit of work and you have to figure out how to reset so that you can continue to come back and be that long-distance runner. Otherwise, you could burn out is real. A physical burnout, mental burnout, and what's not sustainable is like not sustainable. I think one of the things that, you know, one of the ideas that we've been playing around with is this notion that there might be sort of two modes of goal pursuit that people have. One of them is the single goal. Like here's the most important thing in my life and I'm going to sacrifice everything for it.

And again, that's very effective for getting things done. And I think some of the most highly productive, highly successful people specialize in that mode. And and I think our our society's actually really good at advancing that idea. Like they say like, you know, study when you're young, throw everything into it, that's not important, put your put your effort in this. We're really a very goal-directed society. I think we raise our I think you know, we're really raising our kids to be that way saying like, you know, you got to do XYZ. So, if you want to be an athlete, you have to do this, this, this, this, this. If you want to be uh you know, if you want to be a scientist, you have to do this, this, this. If you have a doctor, this, this, this, this.

So, we kind of track them really quickly and then everything becomes about that singular goal. But, humans we never pursue one goal at time. Like, the truth is we are pursuing in our lives multiple goals. So, I have a goal to spend time with you know, to work obviously, but I also want to spend time with family and friends. Um I want to exercise. I would watch out for my health. I want to indulge my artistic side. I want to indulge you know, all these different goals. They they're kind of what my friend Abby calls invisible goals. They're they're goals that we're pursuing, but we aren't necessarily aware that we're pursuing them. And as a result, we're not actually maximizing and giving them their fair due diligence for us to be the well-rounded humans that we want to be. So, you were mentioning balancing work and non-work.

I think this is fundamental, but when we think about what is success, we go back into that single goal mind, right? That single goal mode. And one of the things I got I think that's why people prefer abstinence over moderation. They they think they're thinking about the one goal that is most important to them and they're going to subordinate all the other goals, sacrifice all the other goals that they have for that one goal. But, there might be something really healthy and wholesome about understanding that you're actually pursuing multiple goals and then realizing that you have to divvy your effort among them. And doing so systematically might end up helping all the goals in a way that's better than just pursuing the one and sacrificing all the others. In other

words, the the gain from pursuing all of them might be more than the gain of pursuing the one. And I think the the the philosophies of abstinence versus moderation kind of speak to that that that tension between do I pursue the one that's really important versus do I do I spread my effort among the many?

Certainly in the United States, we love to revere the examples of extreme performance. Michael Jordan, um you know, uh Mike Tyson, um amazing gymnasts, um uh you know, Yo-Yo Ma, like all these people. But if you if you talk to them or people from the Tier 1 operations community, they'll tell you um there was very little balance in uh certainly when they were ascending the ladder, but even to maintain high performance, a very very few people can do that over time and have a uh a stable and healthy personal life.

Some can. Many can't. These days there seems to be a kind of theme of of demonizing people for being too extreme after I find it very selfish on the part of um the public to, you know, like revere these people, glean all the rewards of the incredible, you know, photos of Jordan dunking and the dynasties and all that. And then and then you're like, "Oh, well, he was, you know, compulsively uh competitive or something like that." Like, "What do you want?"

Like, I mean, obviously he did it for himself, hopefully more than he did it for uh for the adoration, but, you know, imbalance also brings extremes. I, you know, we're talking about training a dog, right? I mean, you can get these dogs that can do extreme things well beyond what their their breed represents, but that dog is not going to be like other dogs. Its neural circuits are honed around these training things, and that's what happens when you take young kids and you shape them around a certain behavior, academic or athletic.

So, it's easier to look at those examples and say, "Oh, yeah, I I don't want to deal with that." And so, let's demonize them. I think we should celebrate those people if that's what they genuinely wanted. And we should pay attention to the fact that they became asymmetric in their wiring, literally. And most of us probably don't want that or aren't willing to make those sacrifices. And I think we can be okay with that duality in our heads like, you know, I there there may be goals for which you pursue in that single single-minded way and because they're so important to you, as long as you're aware, you know, so sort of like do I want to be a specialist or a generalist? And you can't be both. So, balancing your time and effort between those two modes I think is really important. You have to decide, okay, this is a this this goal is worth sacrificing for. These other ones are not. And as long as we're aware of the tradeoffs, I think that's good.

My concern is I think we often aren't aware of the tradeoffs. We're only aware of the tradeoffs in retrospect after we've made the decision. So, you know, those who have sort of more balanced their goals, they say, I should have put more effort into the one. I didn't achieve all the things I wanted to and so they're regretful of that. And you also see lots of stories of people saying like I killed myself for this one goal, I did it, but I kind of wish I had, you know, this other and so I think the more we can do it proactively as opposed to retrospectively, the the closer we will be to where we want to be. Again, I think I think there's not much research on this and I think that's [snorts] what's really interesting to me about it. We can have this conversation as a scientist I'm a little frustrated that science hasn't quite gotten up caught up to these insights that we're talking about.

If only, dangerous words. Um I don't spend a lot of time on social media. I have an allocated set of time. I have a separate phone for it, which helps. Talk about moderation. That really helps. So, when people send me things on X or Instagram, I I can't see it when it cuz texts come through a different phone. So, it's an allocated time. That's just a little It's been very helpful. But I have this kind of appreciation for I don't know why there these high-speed cup grabbers. Do you know these people? So, they set up cups or objects.

And everyone's like, oh, it was sped up and they and they'll do other things like run a clock in the background so you can see that it wasn't actually artificially sped up. And I'm like, this is so cool. And then I realize I'm like, how much time did they put into this? And um you know, I hope that they're happy in their high-speed cup grabbing. I don't know what they're sacrificing for that, but it's kind of amazing in this day and age that because we can put everything on display, um there's more and more incentive to become hyper-specialized in something for mere attention. And I hope they're being rewarded handsomely in whatever way, psychologically or financially. But it's kind of interesting. I don't think this existed in the past. There might have been a traveling carnival or something where people would come through and do acrobatics. But we're in a time now where we can reach into our pocket and see the extremes of behavior, including these highly trained behaviors. So it's a very weird time that we're living in. And it sort of gives the impression that one has to be hypertrophied in one skill or or one attribute or else you're not really living. And nothing could be further from the truth.

>> You're making really interesting observations about the current state of our society and and also about the impact it could potentially have on motivation. I think the interesting angle for me in what you're just saying, you know, you're asking whether the cup is these cup folks um these cup stackers are doing this for the attention or they're doing it for themselves. And I would say the the research suggests that they probably do it because they themselves love it. And it goes back to something that you said a conversation we had earlier about doing hard things.

Research suggests that when it comes to doing really hard things, especially sustaining that hard things over time, so you could do something hard maybe once when you're externally motivated, but sustaining that over time is really difficult if you were exclusively externally motivated. Research suggests that your self-control or at least your performance and self-control is enhanced to to the extent that you're intrinsically motivated. That you enjoy it for the task itself. So there's research that Ayelet Fishbach has done and Caitlin Woolley as well, um where they've shown that, you know, if you go to the gym and you only think about all the things that you benefit long-term from the gym, that your attendance at the gym is okay, but if they include intrinsic intrinsic positivity or intrinsic rewards like just listening to your favorite music while you're on the treadmill increases your likelihood of going regularly. Right? So, the idea here is that it's easier to sustain motivation over time, especially when things are hard.

That's when you need to sustain it the most when [snorts] you love what you do. If you can't find something to love, then you might be able to do it short-term, but over time you'll struggle to keep that motivation up. Mostly because the rewards are not tracking with the difficulty of the task, right? That's led me to have some thoughts about how you build self-control and how you teach self-control. And I think the worst thing to do is to make someone like the way that we currently teach self-control. I think a lot is in the classroom where we

make kids sit in the in the chairs really quietly and it's sort of like rule imposed. This is what you're supposed to do. I'm not convinced that that's necessarily the best way to teach self-control only because that's all externally imposed. The child does not want to sit there quietly. The child wants to do their thing. Instead, I think the best way to cultivate self-control for yourself or for others is to do it in a domain that you have intrinsic interest because there's something where you will put you will do the hard thing for a long time, but you'll also be more willing to explore and and find better ways of doing something because you love it so much, right? So, I used to practice martial arts and I loved it. And you know, I I would lose a competition or I would have a horrible practice or I just couldn't do something.

And what kept me going wasn't the some desire to be better or some desire it was really just the intrinsic love of the thing itself. The intrinsic love of the process that kept me in the game when things were the hardest. So, you know, if I were to give advice to anyone about how best to cultivate self-control and to cultivate this ability to do hard things, it would first be make sure the thing that you are trying to do that's so hard is something that you love doing. Because if you don't love it, all of the external rewards are negative. They're all punishments. And that's not going to sustain you. So, unless there's something about the process itself that you enjoy the pain, and that sounds masochistic, but I think most people who do hard things, they enjoy something about the process. That's what keeps us going and that's what gives us the consistent motivation to pursue things over time.

I'd like to take a quick break and acknowledge our sponsor, Function. Function provides over 160 advanced lab tests to give you a clear snapshot of your bodily health. This snapshot gives you insights into your heart health, your hormone health, autoimmune function, nutrient levels, and much more. They've also recently added access to advanced MRI and CT scans. Function not only provides testing of over 160 biomarkers key to your physical and mental health, it also analyzes these results and provides recommendations for improving your health from top doctors.

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You perfectly queued up with this question that I've had in uh about people who have very uh low activation energy, which sounds like a bad thing, but it means they can just like get into action right away, um versus people that you know, it takes a lot for them to get into motion to do things. And in being a scientist and in

being in labs and in running a lab, I can't say that people fall out into two bins or two um you know, distributions on this, but there do seem to be people who for whatever reason I used to try and correlate it with upbringing or something like did they grow up on a farm or like were their parents structured at home, but there are these people who like if there are a bunch of lab tasks, they're really boring. They're like really boring. The first time you do them they might be interesting, but like washing covers, acid washing covers labs and you know, and and like aliquoting antibodies. Like there's if you can listen to something or some music or something like you can make it a little bit more bearable, but it's it's boring. Right? The moment you realize a technician could do it for you and you already know how to do it, you know, there are certain people who are like can't a technician do this? But there other people who just go, "Okay."

And they just do it and they seem to get energy from it. It's really interesting. And then there are other people and I used to think, "Oh, these are going to be the people with better ideas or more creative and they won't do any of this what I call chop wood carry water stuff. I haven't found that to be the case at all. Some people just have low activation energy. You give them a task, they might ask you why, but they just kind of do it. And then they don't waste any effort like no friction. Other people it's like this whole process and I'm kind of pointing the mirror at myself now because certain things I'm very plug and chug about. Other things I'm like, "Really? Like do I have to do this and that?" I will say that as one um you know, the interesting thing about academia that was told to me by my chairman years ago. He said, you know, academia is one of these funny careers because the higher you go up the up the ladder, the more like low-level crap they give you to do in addition to everything else. I actually think that might not be It's a terrible thing on the one hand, but it might not be such a bad thing. And I'll just use one more anecdote. I worked at a in the Stanford Sleep Lab for a summer when I was um in college and uh there was a guy who ran the the project on um co-ran the project on looking for the gene for narcolepsy, which they eventually got. His name was Seiji Nishino.

And he ran the lab. He's an MD and a PhD, extremely talented, and they're hunting for this gene, and it was a big deal. But he would come into lab and do like the most rudimentary stuff with the technicians. And I remember asking him, I was like, "What's the deal?" And he said, "Oh, I just like to show people that I'll do this. And yet, I also just like doing it because it makes everything else easier." And I thought, holy cow, like this guy's running a giant program. And he's in there doing like the most rudimentary stuff. No complaint, no nothing. And I thought, "How do you get to be like that?" And it turns out, for me, you just have to like scruff yourself and make yourself do it. But some people just seem to naturally make the connect. What What is that? Is it upbringing? Is it that some people just analysis paralysis? Or they think they're special? I haven't found the thing. I I can't find it. I don't either. Uh I I don't know that I have a good answer for you. Um I can give you a sort of a scientific perspective, but I can also give you a philosophical perspective that comes from my own Japanese background.

Um So So I'll start with the the the philosophical one. You know, in in Japanese culture, I've been really interested about this concept of ikigai, which means you're doing a mundane task, but you are finding purpose in it. So, you know, your job might be to sweep the the of a temple, and you could ask like, "Wow, that's like as bad as mundane and as trivial a task as I could actually find." But, you know, the I the the idea of ikigai is to sort of thinking about it if if that is your purpose, if that's your piece of the pie, like you're part of this giant system and this is the important cog that you fill, people it actually enhances well-being. That that that they they'll do it

until they're like 90 years old, they'll still be doing it because and they won't give it up because they find so much meaning in the simple task. This infusion of simple tasks, I think, is also related to the notion of rituals, right? So, we a lot of us a lot of traditions have rituals that people engage in and they engage in a perfunctory manner. But, if you engage it in a meaningful way, it has this power to connect us to everyone else who's ever done the ritual and anyone who might in the future. So, sort of expands us to include more people in us.

Um And I'm really interested in this idea that we can draw sacredness from these mundane tasks. Again, this is all speculation. My colleague uh Shira Gabriel, she's at uh Stony Brook Buffalo, she studies what's known as collective effervescence, this idea of these magical experiences that we have when we're in a crowd all kind of doing the same thing. So, like if we all go to a football game and we're all cheering at the same time or we go to a concert and we're all singing Taylor Swift together, like whoever your singer of choice might be, um that there's sort of like a magicness where we become we're doing something that's fairly mundane, but it feels sacred and special to us. It's sort of infusing it with meaning. Just going back to your point, you know, I wonder for some people doing the simple tasks might just be a way of connecting to the essence of the science itself or the essence of the task itself. So, when I was doing martial arts, you know, you're supposed to tie your armor on in a certain way and you're supposed to bow in in a certain way. And in some senses, it's like, "Oh, there's a stupid set of traditions." And you Again, you could just go through them in a perfunctory manner, but if you did them with meaning, uh it's not just the task itself, but it carries this it's the connection that we have to people that came before us and the people that came be after us.

Again, as mentioned, social belonging is one of the most powerful human motivations. Um if we can create these bonds through these simplistic rituals, you know, those Again, these are all speculations that I'm drawing, but it could potentially be really, really powerful. And this this idea that there might be sacredness in the mundane is an idea that I think really interesting to me. So, perhaps, you know, this this PI that you're talking about felt more connected to the lab by doing these mundane tasks that I personally would not want to do.

Um but, you know, perhaps it was a way of sort of saying, like, "I'm still part of the science when I'm pushing paperwork at the higher levels of administration." Again, this is all purely speculation, but I think there is some basis in in science. >> [snorts] >> Yeah, I remember thinking back then, like, what a badass. The guy got Also, he and his and his coworker, um Emmanuel Mignot, eventually found the gene of the It's in the orexin hypocretin system, which has all these implications for hunger regulation, has implications for the treatment of obesity. Like, these They were making fundamental discoveries. And like, there he was. And to this day, I still like revere him in my mind. I was like, He's also, by the way, I'll just throw this out there, incidentally, the guy who taught me that getting morning and evening sunlight in my eyes would set my circadian rhythm, cuz the guy used to work at like heroic hours. He'd sleep like 4-5 hours a night, and he was like, "You just have to stay on a circadian schedule." Turns out you need a little more sleep than that. But, he's still going strong. So, incredible.

As we've been talking today, I I've had a this thing in the back of my mind, which is like, there's something, and this is an obsession of mine, admittedly, there's something about our ability as humans to dynamically regulate our perception in time that is extremely valuable. Right? And it and it's especially salient when we think, "Okay, there's the cake. I want that. Okay, I'm not going to do that." You have to get out of You can do things in space.

In not outer space, but in physical space as these kids did with the marshmallow. You can turn around. You can put something in front of it. You could imagine a cockroach on it. But the powerful tools seem to be when we incorporate some exit from the moment into a future moment. We let Or we could think back. I mean, David Goggins will tell you and I have a friend who's come on the podcast before and Samer Határ is a scientist and he talked about how he was very very overweight and you know, he he he's he's doing great now with his health, but David will tell you too like the fear of being that again is also a motivator. So thoughts to the past linking the present to that and to a future concept. What we're talking about is is mental time travel. And this is a pretty high-level thing that I'm assuming my dog when I put a piece of meat in front of him on the floor can't do unless I give him a command and I take it away if he doesn't obey the command, which is how he learned it so fast. So when we're talking about dynamic time perception, we know that that's harder when we're under conditions of stress.

When we're when we're more relaxed, it's easier to do. So does any of the work that you've looked at in self-control actively incorporate the notion of self-regulation, how calm or how anxious one is? Cuz we hear this like oh Some people don't eat when they get anxious, but a lot of people just become anxious eaters or you know, for people in 12-step for alcohol, it's like never be like what is it? Like angry, tired, you know, etc. For these very reasons.

I think what you're saying is fundamental to understanding self-control. Self-control fails when we are not able to move in dis in distance, right? So I talked about how self-control is distance dependent. When it's far away, it's easy. When it's close, it's really difficult. And so many of the most effective strategies in self-control require either physically distancing yourself, as you've already talked about, or psychologically distancing myself, finding ways to either uh to to activate the mindsets that I have when the thing is distant, so I'm thinking about it as if it was distant, even though it's proximal.

Um or uh finding other ways um to frame it as if it's distant. So, um as I said, in my lab, we talk about, you know, again, when things are far away, we tend to think about things in terms of why, but when they're close, we tend to think about them in terms of how. And so, in my lab, we sort of stress knowing your whys as one way to extricate yourself psychologically uh from the situation that you're currently in.

Now, you mentioned things like, you know, being drunk or being angry or being tired as things that predispose us to self-control failure. I don't know if it's necessarily that it's difficult um or if it's just they bias us in one direction or the other. You know, strong emotional states, um being uh we know with alcohol, it creates myopia. We know that when we're tired, we tend to think more again, more myopically, more here and now, cuz we just want to rest, we don't want to think about the long term. That our mind sort of this attractive state towards being very concrete in thinking about how, and which again brings us actually proximal to the temptation. So, I'm not sure that it's necessarily um harder to do in the sense that like it's that much more effort, and all else is being equal, it's just that the situation has put us in a situation where it's a lot easier think proximally than think distally. So, what are some other ways in which you can think get more distance from a temptation that's not necessarily thinking about why versus how? Um other ways might include and these come from my colleague Ethan Kross, who I know has been a a guest on your show. Referring to yourself in the third person as opposed

to me, Right? So, I might say, "What does Ken want to do in this situation?" versus "What do I want to do?" And just simply referring to myself as other people, not me, but as other people would create psychological distance in the space that allows that gives me just enough to think of it as far as opposed to close. Um I mentioned also uh a study that uh that you know, what would Jesus do? For example, he did this with kids uh Angela Duckworth and um Rachel Carson at the University of Minnesota. They brought kids in and in one condition they just had them do a task that required self-control as they normally would. But in the experimental condition, they for the boys they got they they gave them very I'm sorry, they they gave the children various costumes. They could pick the costume that they wanted to wear the most. It's like the boy a little boy might put on a Batman cape and cowl. And then they were simply asked, "As you do this task, we want you to ask the question, what would that character do?" So, a boy might say, "What would Batman do?"

And they showed that thinking like Batman made them have better self-control. Now, there's many reasons for this, but the reason that they emphasized was that Batman isn't the kid. And so, they created distance by emulating somebody else. Research has suggested that the simulation of someone else's mind, in order to simulate someone else's mind, we actually activate the neural circuitry necessary to have that mind. So, if I ask myself, "What would Batman do?" I literally have to think like Batman. I reactivate the kinds of thinking that I think Batman would have.

In other words, literally turning me and my cognitive system into somebody else. Um so, you know, when you are tired and drunk and mad and everything else, one way if if you can't think about your whys and you're having trouble finding distance from the object in front of you, it's not about not being emotional. It's really just finding some psychological space. And one way to do that potentially is to take on someone else's perspective, someone that you really admire. Incredible. I don't know if the following experiment exists, but uh maybe pieces of it exist in different experiments. I'm interested in the value of words spoken to self in one's mind, words spoken to self out loud, but with no one around, writing things down, words spoken to other people, pictures, etc. as either weaker or stronger motivators for the obvious reasons. And I think all of us are familiar, at least, you know, in the 2000s you would go into an office or a school and there'd be these pictures. It would be like, you know, inspiration when, you know, the moment meets the opportunity and then it'd be like so sunrise or something. Like, and I'm not trying to make light of those better those than like a bunch of other things. But and they're very innocuous too, like in this day and age where no single historical figure seems to be immune from criticism, these have become the like the safe concepts. I'm not sure I have chuckling, but like what is the value of telling oneself like like Andrew, you got this. Or telling someone else like I'm going to do this. I don't know, maybe using AI to create a picture of yourself in the future doing something or having done something.

Surely these experiments have been done. I know some of them your laboratory has done. What is the most potent tool and I have a feeling you're going to say all of them. I think they can all have their place, but as I mentioned before, I think different different things will have better power over others for certain people. So for example, if you tend to be the kind of person who already has so a lot of self-talk going on and the self-talk means something to you. Like like they're meaningful voices to you that you listen to, then self-talk presumably would be very effective for you, right?

So if you're the kind of person where if you're positive self-talk, you literally feel better. If it's negative self-talk, you feel worse. You know, then perhaps strategically trying to change that self-talk could potentially have a really powerful effect on you. Some people talk about visualization. So I mention one one thing I forgot to mention with respect to distancing strategy. One distancing strategy is to take a third-person perspective versus a first-person perspective on the thing that you're looking at.

This doesn't work for me at all because I'm not a particularly visual thinker. I think in words. So for me, words are more effective than pictures. But if you're a much more pictorial person, and we know that this is a distribution that some people are more pictorial and some people are more verbal, um then perhaps like visualizing yourself engaging in the behavior would be more effective. Let me add one more thing. There is research that suggests um that when you communicate something to somebody and then they respond in a way that makes it seem like you are on the same wavelength, that that creates an experience known as shared reality.

People put a special premium in truth value to those interchanges than when you don't have that. So let me just give you an example. On a lot of college campuses today, you will see um banners that say, "You belong." And they're trying to promote inclusion and make everyone feel at home on the college campus. And my own intuition about this is I'm not so sure how effective those are. I think they're a lot like the motivational posters that you're talking about that used to be in the offices.

However, if someone says, "Hey, you know what? I think you really belong. I think um I'm really happy that you're here." It seems it's a very similar message. Uh maybe it might even use the same words. If it's conveyed in a way that makes you feel like they understand you and that you guys are on the same wavelength, that actually has a very powerful effect. And there's some ongoing research in my lab that that actually even though it's the same words, there's something about that exchange of like we see the world in the same way that convinces me that what you're saying is true. And so therefore it has a much bigger impact on me. So I bring this all back to the self-control by saying, "Well, if you know, so you talked about is self-talk more effective than other talking?"

I suspect other talking would be much more effective if you were able to create this kind of reality, right? Where if you had this conversation and you said, "I'm going to do this." And that other person says, "I know you're going to do this." Right? I bet that has a lot more power than you saying to somebody else, you know, "I'm going to do this." And they're like, "Uh-huh, uh-huh, good luck." Right? So, like so there there are because humans are social species, there there is a special power when we can create um a sense of oneness with others that makes our thoughts become real. So, if if by saying it that if I by writing it, my thoughts are becoming real and have more power over um those are much more likely to have an effect.

Again, this is all pure speculation, but I think it fits what we know about psychology. That's incredible. I'm remembering a recent conversation where, you know, we was kind of playing with the idea with someone, you know, like it's the old uh you know, riddle, if a tree falls in the woods, you know, and no one's uh there to uh witness it, did it make a sound? It's sort of like if we have a thought or an experience, um and no one was there to hear it or witness it, did it really happen? And we know it happened, right? We can be alone and we can have a thought, but there does seem to be a sort of loop that closes and gets enhanced, and I'm not trying to be

mystical here when something that we say or do uh is witnessed and registered. Um this can go in multiple directions. I'm uh uh reminded of a uh just very brief story. I have a good friend, his name is Ken Rideout. Uh he's one of these incredible um parents and is husband to his wife and and he comes from a really hardscrabble background and and he's this incredible endurance runner and uh in his 50s, he's like crushing races. And he was doing a race in the in like the the I think it was like the African it was like the Gobi Desert I think is what it was and he's super competitive with himself and everyone else but he he was hurting one day and I think he he ran up next to the guy who was lead leading the race took out his earbud and turned to him and he said in kind of psychological warfare manner he said you know I don't know what it is about me I just don't get tired. And he said he registered the fear on the other guy's face and he just crushed him that day and and I and he won of course in Ken Rideout typical fashion uh he's an amazing guy has a book out that's like really it is super worth reading um because it of his trajectory like David Goggins or these other guys and the fact he wrote a book is interesting right it's not just there's something about externalizing these these thoughts I am sure somewhere in his mind he didn't necessarily believe what he was saying everybody gets tired right even Ken Rideout gets tired but there's something about externalizing it seeing that validated that makes it more true to ourselves.

And that's a kind of a competitive example but there are also beautiful examples of that like you said where someone's like I believe in you like you can do this and it completely changes our notion of what's possible I certainly experienced that in a non-competitive arena so something there I guess that's a a note to the uh to the person or people hearing somebody's goal or wish um to like tune in cuz those are potent moments or potentially potent moments.

I'm always struck that you know our the impact that we have on our students especially our graduate students and stuff um they're not the things I think they're going to be they they always remember these side conversations where >> [snorts] >> you know you acknowledge some small thing that was going on in their life but again for them it was that sort of moment of like I'm bringing to reality some of the thoughts that they were having and hearing me say them or hearing me verify some of these thoughts had an incredibly uplifting and as As it can also have an incredibly crushing event. So, if I'm having insecurities and I'm sort of harping on those acknowledging that those insecurities might have a have a have a truth to them, they could be incredibly damaging.

Um but I'm always amazed by how inspiring it can be. Someone that you really respect, you know, they know you have this goal and then they say like, "I know you have this goal and I think you can do it." Like it it brings That That's what I'm talking about, the shared reality, the social validation of this belief makes it more real and thus has more power. You know, we know that writing thoughts down can be a very powerful thing as well for emotion regulation and and motivation. I think part of that is just the actual sharing part is the fact that now that I've written it down, I'm now looking at it as if it was not me.

Right? So, so I'm now it's not me, it's words on the page and that brings another level of power that didn't have when they're just floating. So, I again, I think all of these strategies that you're talking about, self-talk, writing, talking to other people, I think they're all they can all be powerful in the right way for the right person, but they may also exist on a continuum of potential potency, both good and bad. What I'm about to ask sort of gets into

the realm of like um performance, but I could imagine it being used for any number of things.

You know, music, in particular the music that we listen to at a particular stage of life, um is able to embody a lot without us having to like script out complete sentences. It's sort of a time-space travel of its own, right? There's certain songs, I'm sure for you too. You hear them and I I teleport back, you know. Um is it possible to build these anchors? You know, like like have a song or something that that you associate with a time of like working through struggle that the process is captured in that and then you can reapply it. Like do those tools really work? Cuz there was this phase from about like 1998 to about 2015 when like TED Talks and books were chock-a-block full of this stuff.

It's not clear to me that they work or that they don't work, but music's a powerful anchor. Um so, has anything been explored around around this? Not that I'm aware of. The the the best work that I can link to this is work that I know that's done on nostalgia. Um and nostalgia is traditionally is portrayed in most media as something really negative. It's like a negative bittersweet state, but there research in psychology suggests that nostalgia actually has a very functional process.

It serves a lot of different motivations. So, for example, one of the things that it does is it helps make me feel connected. As as so, a lot of times I I might feel like I don't really know myself. I don't know who I am. And nostalgia is a way of as you meant used the word anchor. It allows you to time travel and anchor and then more importantly see a sense of self-continuity. That I can see how I was there then and I can see how I am now and I see I feel a sense of connection, a sense of oneness. And that can have a lot of positive benefits to the extent that that's what you're looking for. So, you know, to the extent that music makes you nostalgic and I think a lot of the music that we love most has an element of nostalgia to it, I do think it serves a very important distance traveling function, time traveling function. And and you used the word anchor which I really like, too. It it reminds us who we are, where we've been and who we've become.

And we know for humans that's a very that that narrative, that sense of continuity is also very important for existential reasons. That I belong here for a reason, that there's a purpose. And so, motivationally those can be very effective. Now, I don't know if it reinstates the motivations that you had during the time, but I think it at least allows you to connect to the time where you had those motivations. They may have changed, they may be stronger, they may be weaker, but that sense of connection I think is really important for understanding what your motivations are in the first place, right? How they've evolved over time and what they are now like.

To the extent that they're the same, it might be able to reactivate, but to the extent that they're different, it actually might cause deactivation, but not in a bad way, but in sort of a good way in reminding you, "Okay, now what motivates you? Now what's changed? What what do you care about now?" I'd like to just briefly return to the concepts of intrinsic versus extrinsic motivation. As I recall, there was this famous set of experiments also done at Stanford where they had kids draw, kids intrinsic Excuse me, where kids drew intrinsically like drawing. They just observed which kids drew. Then they started rewarding those kids for drawing, and then they observed, at least as I recall, the outcomes being they they observed that some of these kids um drew less or gave up drawing because um the conclusion that was that these kids now were doing it for the the rewards as

opposed to the activity itself. Did those results hold up over time? Generally speaking, the results have held up over time, although, you know, there are some situations in which um they appear at odds with current practices and intuitions that we might have. And the best example I can think of is being paid for your job.

Right? So, so being paid for your job is something that you um it is an extrinsic reward is an extrinsic reward for something that you may or may not be intrinsically interested in. And so the big question is, if you love your job, and then I pay you to do the job that you love, does the love that you have for that job go down? Now, I don't think this is that perplexing if you understand what was actually going on in those Stanford studies. So, they were children.

So, again, the children were intrinsically enjoy playing with markers, and then all of a sudden, in one condition, they were say, "Okay, now I want you to play with these markers, and if you play with these markers, I will give you a reward." A second condition, they said, "Surprise! You just play with the markers, but we're going to also give you a reward." And then the third condition, there was no reward, right? Um and where you saw intrinsic motivation go down is when the child knew before they got to play with the markers the second time that that they were going to get the reward. So, they were cuz they knew they were playing with the markers to get the reward.

It's unclear to me whether that same confusion would happen with adults. So, if I know I love this job and now you're paying me a lot of money to do this job that I love, is it possible that I will confuse get confused and start to think oh, I'm actually doing it because I'm getting paid? Yes, and I think we can think of people who have had that experience. But, you can also imagine that as adults, I know what I love.

And I'm not even paying attention to how much money I'm being paid even though I'm being paid. What matters here is the confusion. Why am I doing what I'm doing? And you could imagine with adults if I'm really clear why I'm doing what I'm doing that that confusion might be less likely to happen um than than if I'm not as clear about what I really really love. Now, I will say what I just said is very controversial and I'm sure the psychologists who are listening to this are going to be all up in arms about how that's not can't be true. Um I think there are multiple theories about how intrinsic motivation works and I'm drawing for those expert readers expert listeners from the attributional approach um and what matters here is the conclusions one draws from one's actions. And why am I doing this? As that depending on how I answer that will dictate how my motivation flows. If I'm doing it because I'm trying to get the extrinsic rewards, then it becomes extrinsically motivated and my motivation drops. But, you can imagine again with adults those who really know that that they love the thing and they're really certain they love the thing, they may be a little bit more resistant to that.

Interesting and and as adults we can also um connect dots and expand our wise. You know, say well, I love doing this thing, get paid for doing it, and uh those resources can help me provide for others uh who I also love. So, it's sort of exponential. Um I remember a salary discussion with my chairman, not at Stanford, but when I was down at UCSD. I won't mention who it was. You'll never figure it out, folks, cuz there were several chairmen during my time there. And I'll never forget during a salary negotiation, he said two things.

He said, "A, you can't make more money than me." Which seemed fair. He's, you know, running the department. I was a junior professor. And he said, "And never forget, you're going to make far less money than you deserve for most of your career. And then you're going to make far more money than you deserve at the end of your career." And I remember thinking like, "That's the worst argument I ever heard to somebody who can't afford housing or whatever." Anyway, Stanford always treated me well. But, um and in many ways he was probably right.

No one Nobody goes into academic science to make money. It's just not what you do. You can look at anyone running a lab, certainly in academia, and you can be sure that the amount of work that they're doing reflects their love of discovery and and and doing science. I I feel very comfortable making that statement. But, in a lot of careers, people do make a lot of money for something that they intrinsically loved. I'm thinking about performing artists, for instance. And um for my friends who are in that world, I I think it can create a lot of dissonance. Like, uh because they'll start taking tours and they'll start doing album deals simply for the finances. And they get used to a certain lifestyle, which brings me back to this chop wood, carry water notion and the ikigai. Is that how you pronounce it?

>> ikigai um notion earlier. You know, it's Several of the people who I've observed have incredibly long, super successful creative careers. I've been fortunate enough to to speak to some of these these people and know a few of them. And 100% of them will say that they still engage in a lot of mundane tasks throughout their day. Yeah, they have a lot of hired help and things like that, but they're still picking up after their kids. Some of them are still edging the lawn. They're still doing these things because when they didn't, they thought that all their time would expand into doing their creative work, and they found that wasn't the case. They actually had lower motivation. And I'm sure there are exceptions to this, but I don't know, there's really something to this um like staying in the groove of what what you were doing in the early to maybe mid portions of your career when you were like climbing the rungs. That's it's almost like a it's like a mental muscle.

Yes, it's it seems to me a little bit like just stay I guess I mentioned before like staying connected to the to the process, to to the way that you know, I used to do things. I will say we have to be really careful though because I think this relationship between external rewards and intrinsic motivation can be exploited. So, there's some research suggests that when we know somebody loves the job, we don't feel the need to pay them as much cuz we know they'll do the job anyway. Right? So, whereas if you took two people, one who is intrinsically motivated and one who's extrinsically motivated, you have to pay the extrinsically motivated person a lot more money to do the same job than the person who's intrinsically motivated.

But it begs a lot of questions about fairness. Should you really be paying two people different amount of money when they're doing exactly the same task just because they have differences in motivation? And in some respects, you're almost rewarding the person that you probably don't want doing the job because they don't they're just doing it for the money as opposed to they really love what they're doing. Um I think a lot of employers would like to believe that they're or like to have employees who are intrinsically motivated cuz people who are intrinsically motivated will often do the extra step, they'll do the hard work. But again, there's this there's this always this concern that they could be exploited because we know because they derive some

value from the work itself that we might have this perception that they don't need to be compensated quite enough. So, there is this exploitation effect that's really dangerous and pernicious.

Are there any elements of Japanese culture that you wish you saw more of in the United States for let's just say your students and for young people in general but maybe adults as well and vice versa that in the context of your work because they are very different places culturally certainly there's overlap too but numerous times across our conversation on and off microphone we sort of touched into some of these really incredible concepts in Japan and Japanese culture certainly we have them in the United States and elsewhere too but you're in a unique position to answer this if you're willing and I'm always interested in how concepts from other cultures and our own could be you know looked at. Well, I should say first and foremost I'm Japanese American. I'm Nisei so I was born here so I have never lived in Japan so I think a lot of Japanese listeners might say oh he's not really Japanese.

I'm definitely Japanese American. My connection to my culture mainly comes from food because I like eating and cooking mostly eating and I also as I said I used to practice martial arts I used to I used to practice the Japanese martial art Kendo which is sword fighting. I've never actually thought about this question so so the question that you've asked is is is really tough one for me I'm going to have to just sort of think on the spot.

I think for me um one of the things I again psychology I think is starting to come to grips with it but a lot of the work on mindfulness I think is really interesting and important but I don't know that we recognize enough is sort of the importance of breaks opportunities to take your foot off the gas again I'm not so sure it's Japanese culture the the society that they're good at that either you know the stereotype is that they work all the time so maybe they maybe they have just the same problems that we do but from the outsider's perspective at least the notion of mindfulness suggests that there are times where we need to not be so goal directed and so driven, but instead just enjoy the moment. But, it's not even enjoy the moment like I'm going to enjoy this chocolate cake. It's like just enjoying being here uh in this moment. Um I think that's an interesting idea that I think in psychology we are wrangling with. And there's a lot of research in this area, so maybe perhaps it's not quite answering your question. The other notions that I think are interesting is it's just sort of the notion of uh it this notion of wabi-sabi, that there's beauty in decay and non-perfection. And again, I think that's an idea that can be foreign in in the in the in the in the western cultural space where, you know, like if we think about our landscaping or we think about, you know, what we want, you know, the way that we dress, it has to be perfect, right?

Like, you know, so we get all this cosmetic surgery or we, you know, buy all these clothes, and if there's one wrinkle, we have to, you know, change clothes or whatnot. Like, we we always we're we're you you mentioned the word optimization before that. We things have to be perfect. Um where isn't in Japanese culture, there's a beauty in the imperfection. In fact, you want you actually intentionally build in the imperfections to have beauty. And I think again, with in the context of this conversation that we just had, you know, embracing the suck and and starting from the place of not being perfect to try to strive for something better, um again, might be an idea that we could incorporate. Um and and we also already talked about ikigai, this idea of finding connection and and and and expansion and um meaning purpose in something really mundane or ritualistic or

simple, I think, is also really interesting idea that might sort of explain some of the lack of happiness that we're currently experiencing in our own culture, where we're constantly future-oriented as opposed to and we're always looking for bigger things as opposed to finding beauty in the simple things that we do.

Like, the most mundane tasks that we do might be the most important things that we do, but we just don't code it that way because we're our eyes are on the prize downstream. And I wonder if that too might be an interesting idea worth exploring. It's interesting to think about your answer in the context of the the mundane or the chop wood carry water type uh thing plug and chug whatever people want to call it because therein seems to be at least part if not all of the operations that we're applying to the big lofty goals just on repeat with this thing that this concept like I'm going for this big whatever trophy degree founding a company building this like when we think about external things but even for people who who have like a really big family concept beautiful, right? But I've seen a lot of people crushed under that pressure too.

And then they end up with a kid who doesn't fit into their family concept and it's like completely destabilizing for all their ideas they thought they could script it out according to their family album from the past. I don't wish that you know these hardships on anyone and yet they're kind of like the stuff that make life great too in a weird way. Yeah, that that that brings us back to the idea of wabi-sabi like beauty in the imperfection in beauty in the decay and yeah, like we can embrace what is not perfect which seems you know just sort of thinking about my own life like wow, that's in some sense that's totally foreign. You know, you're taking pictures and it has to be the perfect picture or you're you're saying this perfect family like we have these mental models of what the goal is and we we only achieve it when you're there.

Um it's interesting to think about like other like being giving some degrees of freedom in that and and finding meaning in that. I think that's really interesting idea. Yeah, it's actually one place where social media has um in my opinion has shown a bit of humanity uh contrary to the stereotype like you know, I see a lot of social media stuff and sure like you'll see incredible feats of artistic or athletic or whatever and they'll get like tons of views and likes But every once in a while someone will come along and very authentically like confess a failure or come along and and just, you know, express a hardship that they're going through or a win that they that doesn't really fall within our normal notions of what a win is and it's like an avalanche of interest in those. So, I think there's a there's a natural um kind of uh magnetism to these like just human elements. So, I appreciate you being willing to take that answer uh to answer that question excuse me on the fly um because uh you know, it's not within your uh your PubMed profile, but I but you you're I do believe that the the people we are comes to the science we do and and I numerous times throughout today's discussion I've detected these elements of like who you are in this and it's impossible to to separate so So, thank you for for the consideration. And as a final question, I'm actually just really curious what you want to do now. Like what what is the the experiment you're working on now or the dream set of experiments that you think can really move the needle forward in your own concept of this work cuz clearly you're you're very focused on it and we're very grateful that you're doing this work, but yeah, like what what where's your What are you most excited about right now? One is we tend to think about self-control again at the tactic level. What do I do to overcome this temptation? And I think largely overlooked is this idea of what do I want to do again cuz you don't you don't get your goal from a single behavior. It's through repeated patterns of action. So, to really come up with better ways to understand repeated patterns of action in the lab or in the field. I think it's a major challenge that the field has to take on and hasn't

and I think one of the reason why we haven't studied it is cuz it's so hard.

That's why we go back to these one-shot deals. I think that's one of the most important things to think about. Um another is and again we talked about this two modes idea, am I pursuing the one goal or am I pursuing the many? I think in psychology we have spent a lot of time focusing on the pursuit of the one. And we haven't really done a good job of sort of embracing the pursuit of the many. To the extent that we have it's usually like two goals, so like work-life balance, we'll look at how people navigate those. But as I mentioned before, we have more than two goals at any given time. So, how do we integrate all of these goals? How do we pursue them all the time? How are we juggling all these balls and keeping track of them?

Are there goals that we are that we have that we're not even aware of um, that we are actually pursuing? Really interested in that. Um, and then and related to that is sort of fitting goals into the broader constellation of all the things that we want. Like connecting goals to these big underlying values and motivations that we have. That link is not really well understood. So, we talked a little bit about getting our ducks in a row.

Seeing like the whys of a particular like when you think about your goals, the the broader motivations of what motivates them. How how did that come to be? Like, did our system just know that these things were aligned and now retrospectively we're making the connections or does making the connections have an important impact? So, not just multiple goals but also levels of goals and how they connect to more fundamental motives and how we know that whether goal is right for us. I think fundamentally requires understanding whether they resonate with these broader motives that we had. And again, as you mentioned also like like getting things aligned. Like that alignment idea. I don't know that we really understand how people do this. It's magical.

When we get it right, we do amazing things. How do we know it was the right thing to do? Like, there's no textbook, there's no wiring, there's that so what are the cues? What are the signals? How do we discover what we really want? Those kinds of things I think are the future of our science. I don't know that it's going to require a lot of methodological development, but I think those are the big questions I'd like to see us address.

Awesome. Awesome. I look forward to seeing what you and your colleagues discover next. And I want to thank you. Um thank you so much for coming here today, sharing uh work that you've been doing in your lab. When I discovered uh your webpage and saw a few uh things you had done um previously, I was like, I really really want to sit down and uh and talk to Ken because I I can tell that not only is the work embedded in something that we all grapple with, and that's extremely important to life advancement, no matter how ambitious or non-ambitious somebody is, but it's also clear that you're bringing in a real understanding of just how dynamic our lives are. It's like not one goal, and and studying these things in isolation has served us well, I think, in the past in building a framework, but I think it's just terrific the way that you're throwing your arms around all of it. And um and as I mentioned before, it's clear whether you intended it or not that you bring a lot of humanity to this in considering yes, there are answers, they vary, you need a dynamic toolbox, and yet there's evidence that certain things really work. So, I know I'm going to incorporate a number of things that you shared today, and I know our listeners will as well. And so, thank you for doing the work you do. Please come back again and update us as things evolve.

And um once again, really appreciate you. Really honored to be here. Thank you. Thank you for joining me for today's discussion with Dr. Kentaro Fujita. To learn more about his work, please see the links in the show note captions. If you're learning from and/or enjoying this podcast, please subscribe to our YouTube channel. That's a terrific zero-cost way to support us. In addition, please follow the podcast by clicking the follow button on both Spotify and Apple. And on both Spotify and Apple, you can leave us up to a five-star review. And you can now leave us comments at both Spotify and Apple.

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It's entitled Protocols, an operating manual for the human body. This is a book that I've been working on for more than 5 years and that's based on more than 30 years of research and experience. And it covers protocols for everything from sleep to exercise, to stress control, protocols related to focus and motivation. And of course, I provide the scientific substantiation for the protocols that are included. The book is now available by pre-sale at protocolsbook.com. There you can find links to various vendors. You can pick the one that you like best. Again, the book is called Protocols, an operating manual for the human body. And if you're not already following me on social media, I am Huberman Lab on all social media platforms. So that's Instagram, X, Threads, Facebook, and LinkedIn. And on all those platforms, I discuss science and science-related tools, some of which overlaps with the content of the Huberman Lab podcast, but much of which is distinct from the information on the Huberman Lab podcast. Again, it's Huberman Lab on all social media platforms. And if you haven't already subscribed to our Neural Network newsletter, the Neural Network newsletter is a zero-cost monthly newsletter that includes podcast summaries as well as what we call protocols in the form of one to three-page PDFs that cover everything from how to optimize your sleep, how to optimize dopamine, deliberate cold exposure. We have a foundational fitness protocol that covers cardiovascular training and resistance training. All of that is available completely zero cost.

You simply go to hubermanlab.com, go to the menu tab in the top right corner, scroll down to newsletter, and enter your email. And I should emphasize that we do not share your email with anybody. Thank you once again for joining me for today's discussion with Dr. Kentaro Fujita. And last but certainly not least, thank [music] you for your interest in science.