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Context to the nugget conversation

Tom speaks about how kids learn and how they keep changing the nature of experiments they do to make the learning “less brittle”. He speaks about his insights from the Infant Action Lab in New York University where he saw how children experiment their way into learning and what we can learn from that.

Transcription

Deepak Jayaraman (DJ): I think changing track Tom the one piece that really blew my mind was the way you described the term baby steps. In my mind I had understood it to be taking small steps. But you go on to say it is not just that it is babies are a lot wiser than that. They do this with a lot of thoughtfulness and you talk about the notion of variable practice in the way they mix it up. Could you talk a little bit about this nuance behind the term baby steps and how we can apply some of those principles as we learn something new?

Tom Vanderbilt (Tom): Sure. Yeah, I thought it would be interesting because I was writing about beginners to think about infants because as we all once were, infants are beginners in life. So, how does it look to be a being that has to sort of be a novice at everything except maybe, sort of breathing and one of... so, I went to New York University something called the Infant Action Lab and one of the things they study quite a bit is how babies learn to move and there is a process they go through where they will first just try to sit up a little bit then they might start crawling doing these various half crawling, then they will try to make this move toward walking and it is very interesting in terms of a learning process because they sort of violate a lot of the things you hear about, they don't really have a specific timetable in mind or a goal. When researchers have tried to figure out where babies are even walking to they really can't identify, they seem to be just be walking for the sheer pleasure of walking and to practice it in a sense because... and there's even some question as why babies learn to walk when they can really often get around pretty well by crawling and in a sense learning to walk it provides that much more learning opportunity because you can see more of the world, you can reach other destinations, you can interact more directly with a caregiver. So, I almost think there's a larger hunger for learning they are growing on and importantly we don't give babies drills in how to walk or exercises. We just sort of leave them in a room in the house and they try it on their own and through this process of just simply trying and there are a lot of... speaking of 10,000 hours I mean it takes five years or so to become a proficient walker. So, there's clearly a lot of work that goes on even though we have sort of forgotten about that but as part of that there's an immense failure rate. The research that I spoke to you had filmed babies falling 30 or 40 or even up to 70 times in an hour while trying to walk and then they would simply shrug it off and get up and start walking again. And so, there's something about... and their whole practice of learning is very sort of seems very random and playful and experimental and they are not, they are never really

trying the same thing twice because that wouldn't be a good way to learn for them because walking is often not the same thing, moving around, and there's a famous Russian movement scientist named Nikolai Bernstein who called it repetition without repetition and this means when you are trying to solve something like walking or how to juggle you don't simply want to do the same thing all the time, because that is a very brittle practice. You might find out the way to juggle three balls perfectly if they always land perfectly in your hands, but the minute there's a little bit of variation as there usually is, if you stuck too closely to one drill, you won't have the flexibility to try to solve that problem in a new way. So, that is just yeah, I think babies just have this and children in general just there's a lot we can sort of take on about their learning process that would bring us benefits. Obviously, we know how to walk but there's many other things that we can sort of take that spirit and another element that would be just a lack of pressure. Certainly, parents are often eager for their children to start walking as soon as possible but, you know, babies aren't really aware of that. They are not aware of I must learn this thing or I am falling so much, I am terrible, I am embarrassed; they have none of that, they simply have the freedom to learn in a very sort of fun, low pressure environment which adults often do not have.

DJ: Fascinating. You know, juggling I was particularly curious about your piece on juggling because when I was in the UK about couple of decades back, in London, I remember going to a juggling show in Covent Garden in Central London, and I remember walking up to one of the jugglers saying I want to learn juggling. He told me why don't you just come to my shop in Camden Town, which is one of the neighborhoods where generally every other person has a piercing in some part of the body. It is sort of where all kinds of people, interesting people hang out and one of the early lessons that the guy gave me was when you are juggling just ensure you have a different background, don't do it against a plain wall, one day do it against the sun, one day do it against a colored wall, then you'll get comfortable spotting the balls amidst chaos. If you sort of learn it in a pure environment against a plain white wall, one day somebody might ask you to perform in front of a crowd of 10 and you won't be able to spot the ball because you are so used to seeing it against a white background. So, it is just a simple tip but now when I go back to what you just said about, just mixing up things a little bit I go back to that piece of advice.

Tom: No. Yeah, it is a great point and something that I incorporated as well and other things as well, if you always began with your dominant hand will sometimes switch up to your right hand. And what you are saying it can help you I think push through the plateaus that do come along in trying to learn something. I mean because what the learning curve is a sort of a capricious beast, there's very rapid progress in the beginning often, but then you sort of hit this first plateau and the brain has essentially sort of run out of solutions to how to get to the next step. So, I think, part of the way to kick-start those solutions is like you say to change the environment, change the things that you are throwing, change the way you are throwing them, change the speed at which you are throwing them, that is another tip I was given; don't often throw at the same speed or the same height, just practice solving the problem in as many different ways as you can rather than simply coming up with this one perfect solution because the world is very often is very rarely so perfect, you know, maybe a chess board is an environment where there's no randomness or everything is transparent but, you know, most of the world is not like that.

DJ: You are true and I think the other piece that I still aspire to move to five-ball juggling at some point. I have done a few patterns in three and a few maybe a couple of patterns with four; five is sort of my long-term aspiration, but the one thing that really, I found fascinating was learning each pattern was like riding cycling afresh, right? You keep falling, falling, falling till you find balance. Similarly, you just keep dropping the balls and the new pattern suddenly clicks. So, it is just that sort of the 0-1 nature of learning something I found quite intriguing unlike some of the other pursuit which have a little more linear.

Tom: Yeah, and in what you say speaks to the idea that that struggle that we are having until it clicks, that struggle is the learning and that once it clicks well, then we are not really learning anymore. It is good to sort of keep checking in with that skill every once in a while, and make sure you still have it but the moment your sort of brain isn't hurting anymore is the moment that the learning has stopped and that is an interesting signal to perhaps move on to a new trick. I mean, there's nothing wrong with learning one trick and then doing something else but that sort of thing we often forget about I think is that doing something poorly, performing something poorly does not mean that learning is not happening, that can be when the most robust learning is actually happening and I think it is... we get so hung up on performance sometimes we would rather stick with a safe let's say juggling routine that we know very well rather than go through that whole struggle again of trying it, yeah, but, yeah.

Reflections from Deepak Jayaraman

DJ: I always thought that baby steps referred to the small size of the experiment. It is fascinating to hear Tom talk about how babies also randomize the environment around them so that the learning is robust and applicable across multiple situations. Worth reflecting on that as we think about how we learn. That is a new dimension all together.

At this podcast, it has been great to learn the context behind some phrases that we use without thinking too much about them.

- 1) Let me sleep over it (Matt Walker spoke about this in our podcast conversation)
- 2) Why don't you take a walk (Jennifer Goldman Wetzler spoke about where this term comes from and the impact on conflict management)

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Tom Vanderbilt - Nuggets

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About Deepak Jayaraman

Deepak seeks to unlock the human potential of senior executive's / leadership teams by working with them as an Executive Coach / Sounding Board / Transition Advisor. You can know more about his work [here](#).

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