TakingFlight\_Ep5\_TempleGrandin\_Final\_\_V2

Tue, 7/27 5:32PM • 48:56

**SUMMARY KEYWORDS**

autism, people, students, cattle, big, problem, thinking, autistic, important, work, temple grandin, horse, cows, disability, rats, book, temple, learned, called, kids

00:00

You know, being autistic really wasn't the problem for me in my career, it was being a woman. But I had to make myself really good at what I did. And I had a very strong urge to prove to the world I'm not stupid when I was in my 20s.

00:16

This is taking flight, a show of people redefining disability by challenging the world we live in. I'm parallel rockin On today's episode, we're going to talk about cows and autism. And who else could that be with other than the iconic Dr. Temple Grandin. Not many people can claim to be pioneers in two fields, and certainly not in two fields is seemingly different as bovines and autism. However, the lessons learned through empathy, humanity and courage throughout an illustrious career often bleed through the specific topic of conversation with a spot on the 2010 time 100 list of the most influential people, a double helix metal, multiple honorary degrees from around the world, inductee into the Hall of grey washed singers of the National Cowboy and Western Heritage Museum, member of the American Academy of Arts and Sciences inductee into the National Women's Hall of Fame, author of dozens of scientific journal articles in Animal Sciences and books on autism and disability, a TED talk and an Emmy and Golden Globe Award winning movie of her own name, and one very starstruck, humbled and honored podcast host. Here's my conversation with Dr. Temple Grandin. You know, I did about an hour and a half interview with with temple which was, which was fascinating. You know, it was quite the experience for me for someone who has known about her since I was a kid being in my industry. And I sent her an email and said, Would you talk with me for a little bit and I got a phone call from her. And so I picked the phone shows Hello, this is Temple Grandin. And I, you know, for me, it was a little bit of a freakout moment. They have her just on the phone, and I really didn't see the humanity in her. And she was a pleasure to talk with. And she's funny. And she's certainly smart. Yes, very smart. Meet Jim cool. Jim recognized Temple's unique capabilities, and immediately hired her in the 70s. They traveled the country together and became dear friends

02:16

for artistic, great, great eye for camera work. Took sensitive, beautiful pictures of kids with cattle, livestock, help teach kids how to groom their, their calf or their horse or what have you when just gal she knows about hogs and cat, she, Ben and horses and a whole whole spectrum. But I've got a kick out of when she'd go to the Emma county fair and help the kids groom their, their animals to show them properly. And it puts a lump in my throat.

02:53

Well, you know, I

02:54

think that coming in as a young person, you want to come into the field and save people's lives. Right? Of course you want Yeah, and you want to make them better, right? You want to fix problems. And so you know some of your early lessons about different than, rather than less than and thinking of people as people first and all of those pieces just back in. The

03:17

other thing is that what I'm seeing now is a lot of students with a label, they aren't getting taught basic skills, right. And I just got a book deal review from a guy who works at Microsoft for years. He had an upbringing a lot like mine, while learning how to work. For example, he worked at a convenience store when he was a teen. I mean, no, he learned how to work well. And then the other thing I'm finding these because they don't understand money. I learned that from my allowance son. And I learned I could buy five comics with 50 cents. But if I wanted to 69 cent airplane ahead, save for two weeks, I've learned that seven and eight years old. And that's not complicated stuff to do. That's just how kids were raised in the 50s.

04:00

Yep. And you know, one of the things that we ran into with with the work I do at Mansfield Hall and all of our students are somewhere on that continuum that you talk about, whether it's autism or Asperger's or just quirky, nice kids, we were having a hard time finding them internships, and we found that to be an area and I don't know if you see this in Colorado, but we found that to be an area of discrimination that Firstly, a

04:21

certain amount of discrimination one, I'll tell you what I learned to do. I just saw my work. I never disclosed being a woman in a 70s in a man's industry was a much bigger barrier. I would just lay the drawings out on the table, showing the pictures shown the trade magazine articles and let the work sell itself. Now I have some accommodations. I need an even though they were called accommodations, but when I had to run a piece of equipment, I made sure I had a checklist. That's easy. And I would always in the project meeting get very clear what the what the parameters are the things I had to design. I said I'll do the design, but I need to get some cost parameters. Can I have the field across the street that land belong to you Because I want to write

05:07

I rewatched the movie last night just because I love it anyway. And I thought, well, this would be a good, exciting thing to do before I get to actually meet you in person. And so it just still blows my mind. And the one thing that I just, you just said it, you know, you were coming up in an era where autism wasn't even a very popular diagnosis or much understood at all. Really, nobody knew what it was in the beginning. And at some point in the movie, I was watching it. And I was thinking, Well, wait a minute, what's more difficult being a woman or having autism at this point, I mean, you were out there with all those men, the woman

05:39

in terms of career woman was a much bigger barrier. And they put bull testicles on my car, just like it showed in the movie that happened. And I was kicked out of Scottsdale feed yard that happened. And the autism was a minor problem. Maybe autism helped me because I, you know, really went after things, you know, like going up and getting that editor's card. But the thing I learned really early on, you just show the work off the interview. For me, it was laying a workout on the table. And I can show you some of my thinking in pictures book, I've got most all my drawings in there. And I'd have my big sheets of paper and just lay them out on the on the people to look at and here's all my drawings. And I would just lay those out shown to people. And that's all I had to do. Here's Jim who will again.

06:31

So the first project I did with her was in about 1975. I wanted to build livestock facilities. And a fella told me that there was a very unique woman that was working for chorale industries, but had been at ASU School of Construction. And she knew a lot about a livestock handling facilities. And he knew a lot about handling cattle. And he had a lot of good things to say about her. So I got her number, and she only live five or six miles from where I lived. And it just so happened and I called her and she took the call but was quite reluctant to. It wasn't Oh yeah, sure, I'm happy to meet. So I, you know, was patient and persevered. And either on the first or second or third call, she agreed to meet me at a restaurant. And she had been working at a slaughterhouse in Phoenix here, and to learn how to stun cattle on etc, etc. And I guess make money in handled cattle. And that is pretty bloody dirty work. Okay. And she came in the restaurant dressed like that was stuffing her hair and everything and but that I wasn't, it didn't have any effect on me. So anyway, we got to talking and she was cautious and wondering what in the hell I wanted, I'm sure. And so that was my first meeting with her. And I got to know her a little bit. So that was the first meeting.

08:17

So you said that was around 75? I mean, there wasn't a lot known about autism. I mean, were you aware of this specific disability at that time? I mean, have you interacted with people with a similar profile like that before? Was she sort of the first person you would come into contact with that had that type of disability?

08:36

Well, I wasn't particularly aware that temple had a disability. Yeah, I'm not really aware with that. Now, I don't I better probably around temple amount as much as anybody there was, at least in the beginning years. And I'm not sure that I feel that way. Although I have no no technical training or anything. I mean, I've been around a lot of very unique people. And temple certainly being one of the most interesting, creative and valued that I have met. But I had heard the word I was vaguely aware, I'm not in that field. And I was interested in her. There was nothing about her that caused me being less than interested. I was a little shocked at her, her mannerisms and her dress in a restaurant setting like that.

09:29

But beyond that, you just didn't you don't see her as someone who has a disability. No, actually

09:35

I see her. Just the opposite. I saw her then, as I see her now and over the many, many jobs we did all over the United States, as a person with unbelievable talent, talents that are hard to get. What did you think of the movie? I'm assuming you've seen it. I honestly have not Do you have it? No. Oh is the name of Temple

10:04

Grandin, Claire Danes who I don't know if you know Claire Danes is but she's a pretty famous actress plays temple. And she I think she was nominated for a Golden Globe for it. Well, that's

10:13

great. Well, I'll make sure that my wife and I

10:17

got a kick out of it. I'm sure it's, it's good. You're probably in it. I'm an academic. So the one of the first things I did, believe it or not, and I hope that in this area where my specialty is in disability and autism, I felt like the first thing I should do is understand a little bit more about your work. So I read assessment of stress during handling and transport. Okay. I was just really interested. So I, you know, I grew up in Wisconsin, and I'm in Wisconsin right now. So, you know, I've been reasonable around a fair number of cows. And I think anybody that has been around a cow knows that they're unusual animals. The things that struck me about the paper that I hadn't thought about was just the idea of the novel illness and how novelty is can be the biggest amount of fear that any animal has.

11:05

Well, you see, the thing I've told the people with autism, no sudden surprises. The other thing about novelty, is if the animal is allowed to voluntarily approach it, then it's attractive, when you shove it in their faces scary. Okay, let's say a student's going back to school. He needs to know that he or she needs to know that, you know, they're gonna have a desk spaced apart, eat lunch at your desk, let's not have that be a surprise.

11:34

At what point did you start looking at it and saying, Wow, these, these cows are a lot like humans? Or was it the other way around these humans are allowed I

11:42

remember when I first started working with cattle in my 20s, I thought everyone's visual thinker, I didn't know my thinking was different. And so it was obvious to me to look at what cattle were looking at, like shadows or coat on a fence or vehicle parked near near something. And I didn't really understand why other people didn't seem to see this. And I wasn't always perfectly in my 40s when I really realized the extent of my difference in my thinking. And it was one I talked to a speech therapist at an autism conference. And I asked her, I think about a church steeple. How did it come into your mind? And I was just shocked that the way it came into our mind was just a pointy thing like that. Now the words that's all came into our mind, where if I say the, you know, church staple to me, or maybe factory or some other thing I see specific once. People that are visual thinkers will start naming the churches. And there's a reason why I picked this church steeple, you don't own it. And you see them when you're driving around when you're in church, don't see them. And people don't pay that much attention to them. If I asked you, you about your own dog, yes, people, most people can see that. But ask you something you don't own. Even I see very specific images. And the person who's maybe an art major or something like that, they'll start naming off the churches, they start naming them off, as they come up in their mind, like PowerPoint slides, where the really verbal thinker just gets these two kinds of lines like this. I was shocked when they first told me about this

13:16

that looked like my church steeple. I had another question about some things that came out in that paper. And I think that the general one and this may sound like a dumb question. I mean, I have my own opinions. But why is it important? I mean, why? I don't want to say just about the humane treatment of animal because I get that. But there's some sense of the moving article and the distress. And why is it so important to keep animals because I'm sure some of those cowboys were like, they're fine. You know that, who cares if they move, but you recognize that there's a deeper level of distress, they were feeling Why is that important? Just in general?

13:54

Well, when you know, certain situations or cows will move when their separation distress and protect their calves away, they'll move. If you pinch them too hard. With a restraining shoot, they're going to move saying Ouch. And we'll use that as a measurement to make sure you're not doing really bad handling, the they can suffer. Animals have the capacity to suffer. They've got a motion so they feel pain. Now there's some things we can't do on make computers and things like that. Because there's one fundamental difference between us and the animals is the size of the cortex. We have a computer sitting up here on top way bigger than an animal it's got in terms of processor power. When it comes to emotions, a lot of us stuff, all mammals are pretty much the same.

14:40

Have you studied animals in the wild? Like, very you know, how does a cow in captivity or a domesticated cow experience fear? Are they anticipating their death? Do they know where that they're? No, they

14:52

don't know they're going to die that I had to answer that question when I first started is do they know they're going to get slaughtered. So I'd go to the slip point. In Arizona at nine o'clock the local feed yard, and I found that they behave the same way going the vaccinating sure is they did go into the swift plant. fact the swift plant only had a five foot six inch fence that the cattle were very capable of jumping now, the 99.999% never do.

15:16

Yeah, one of the things that I was curious about was one of the quotes, I think it was just on your Wikipedia page. But it's not an uncommon quote for someone on the autism spectrum. The part of other people that has emotional relationships is not part of me. Well,

15:32

I'm very logic driven. You see, I think a brain can be more emotional, or brain can be worth cognitive, or thinking, you seem to be to do complicated social behavior, it eats up a ton of processor space. So a little bit of an autistic trait would give someone advantage, they are really good saucon Valley engineer, you know, there's some people running some very successful companies, you know, you can argue about whether or not they're autistic. But Autism is a continuous trend, at which point you slap a label on one, the slightly geeky, become autistic. And I get really excited about noise, interesting things to do to that, that turns me on, or something that's really innovative, really clever and innovative, that that will turn me on. But on, we need people who know how to just do stuff, we wouldn't have any computers without electricity. Tesla who invented the power plant was probably just right. neinstein Einstein, no, you see people argue about Einstein. Let's just look at the facts. There was no speech and delayed Shrek. He had delayed speech. In most school systems today, the behaviors he had, he would have had an autism label slapped on him. You see, the problem is it's not a precise diagnosis like COVID, where you use the right test, you can absolutely say you happen to go right. When you're working with cattle. Is it empathy? Well, I cannot visualize, you know, sort of how an animal is going to, you know, perceive different things. And one of the big things I've worked on until you're using a restraining shoe pull an animal vaccination. I've really, you know, to hate me a munia squeeze in this too tight, we've got to adjust the hydraulics, you know that that's absolutely not okay. Yeah. So your idea is that if you do it, right, it's more humane. And, again, not to do a right, I want to emphasize that. And one of the things I worked on, you know, I worked on implementing McDonald's on its back in 1999. That was really interesting. Because when they McDonald's first got faced with having to deal with animal welfare. That's all let's just delegate it to the lawyers and to the public relations department. And then I took high level vice presidents out on their first trips, and when they saw some bad stuff, they go, Whoa, it was just like, Undercover Boss. There's some stuff here that we have got to fix. And it was no longer an abstraction. You see, that's why it's so important in any corporation for managers get out of the office and find out what's going on the front line. Just the other day I was being asked about, you know, human rights issues with various industries. Well, and there's bad stuff, fishing, you know, in other countries, yeah, they better get out there and find out what's actually going on on the front line. And OBS was is just a spreadsheet, they can make decisions that are really unethical because the quality of meat differ based on how humane animals treated. Yes, if you get cattle all excited and stressed out and fearful right before slaughter in beef, you will get tougher meat does actually paper Robin Warner in Australia on that in pigs, you'll get pale, soft, watery meat. And one of my former students Lilly Callaway, Edwards has done a paper on that. Wow. Yeah, they does affect the quality of the main

18:42

that is really interesting. Yeah, cuz, you know, that's the one of the cows over in Japan the wazoo? Yeah, no, don't they massage

18:52

those animals? Isn't that? Well, yeah, that would just be a few specialized one said the others that they raised without being massaged. But some of the Japanese, he has a very high level of marbling.

19:03

So we don't do a lot of massaging here. The other thing I was just curious about is because it's your field, is there something in the field in terms of the cattle piece, that is the most interesting thing you've learned or the most interesting fact about? cows are

19:18

not really interested in animal visual perception. I've got a student right now she's doing a project on how horses perceive novel objects. And she used the children's plastic playset. Well, you know, it's about four foot by four foot by four foot in size as a slide and swing on it, walk the horse by it, really afraid of it in the beginning, then get them used to what walk it on by walking by they rotate the playset and almost becomes a totally new object. Now these were experiments well done in a walk. But when you rotated that playset, let's say a galloping horse, Georgia, you probably get dumped off. But think about this stapler, imagine it was a lot bigger. It looks different oriented this way. Then oriented display. And that's why it's really important when you're training horses to show them all sides of something. You see, because it's a visual memory. You see, when you have a verbal memory, you got to say, that's just the kids place on the horse didn't even know what to place. These horses never seen one before. They know what it was. But when I was rotated that slide sticking out the other direction, it almost became a totally new object wasn't quite as scary because it still had some of the same features that had before. But one of my other students had won a huge hatboxes that you keep a cowboy hat in. And she had gotten on our horse with that thing. She had set it on the ground around her horse. And that horse had seen that hat blocks. I mean, I don't know, 50 times or something. And one day, she said that hat box on a picnic table, and it's somehow in the horses brain turned into something else in the horse. Mm hmm. Or will it look like something different sitting on the picnic table? Because it's purely a visual memory? You say they're not thinking the horses go? Well, that's just the hatbox. You say we we have an additional layer of processing that they don't have.

21:09

Right? Does that apply to people with autism or your autism characteristic, so

21:14

I am a visual thinker. Now let's talk about some of the different kinds of minds in the autistic brain, I guess that there's three kinds of specialized thought not just object visualizer like main, who thinks in pictures, which is shown very clearly in hbo movie, then you have your more mathematical mind, these are going to be a programmers, this is what's called the visual spatial mind. And they're more mathematical, they think in patterns. And the third type is going to be word thinker. These are the individuals they like history, like a lot of facts, and things about words.

21:47

There's a saying in psychiatry about personality disorders, if one then all, do you feel like those are pretty discrete brains? Or do you think that someone with autism shares a little piece of each? Well, the

22:01

thing on like, they've done research on these different kinds of thinking, and just people they just got, like, out of art departments and out of engineering departments of universities. And there definitely are two kinds of Visual Thinking. There's the object visualizer, like me, describing thinking in pictures, who thinks in pictures, and then there's the mathematical mind. And it's more like patterns, graphs, mathematics, programming, it's a different kind of thought. And it's been verified in the scientific literature. And some of that is in the autistic brain, which was published in 2013. And then, as I've researched the literature, and there's a lot more literature now, and research that supports that idea that object visualization and mathematical visual spatial thinking are two different things. Now you're gonna have some people and mixtures of both. But you're never going to find a person who's a super good object. visualizer, like me, who's super good at math. And one of the things that may is actually couldn't do algebra. And thank goodness and 67, it wasn't required. Because I want originally to be a biomedical engineer. And I couldn't do the math. I had to go into a field where I didn't have to have all that math. I've done tons of engineering work. And there's a place for visual thinkers and engineering things because there's been big mistakes made like the Fukushima nuclear power plant. Well, not really good idea, and you live next to the seat and not have watertight doors, right? You see, when they count when the engineers calculate risk, I'm just going I see the water coming over the seawall. I know what's going to happen when those doors bust out. And your emergency cooling pump that has an electric motor doesn't work anymore, in the seawater, in the sea water, and I don't know how to design a nuclear reactor. But you need people to make like may scream and you got to put watertight doors in there and sump pumps and right, I don't want to get leakage some of the doors and I got to keep that stuff dry. What do you see her as her specific talents?

24:08

Well, she's got many talents. Okay. One is she is quite artistic, in my opinion. Her photography, I remember, she has to do some photography of livestock. And one picture she had was a calf drinking out of a pool in the mountains, and the mountains were reflected in the pool. That was one. One is an unbelievable work ethic, which I admire greatly. Tremendous endurance. You just couldn't tire her out. And she worked when we were on our job. She worked right with crew. She didn't just stand there and point nine she pitched him at a good heart. When the boys got hurt. She got to know the crew very very well over the years. I mean, they Superintendent just died like Last year, you remembered him well. And last time I talked to him, and he asked house temple. I mean, you know that people never forgot her, especially the people that liked her and recognize the great value she brought to the things we were trying to do. And I am jumping forward here, Perry is that at some point early on, I mean, then all the travel was by pickup truck. So there, you're in a conventional cab pickup truck for 1012 hours driving from here to Oregon or something like that. And you talk about everything I became, and temple I did not do much of the talking. But I listened to the temple carefully. And it became obvious to me that she was studying cattle and livestock. But she was also trying to understand a lot about how the human brain work. And she could learn a lot about livestock. It might parallel to what the human mind was doing. And she could help kids that had her problems, because she was open to me about problems she had growing up burial. Just just like you and I are talking. And I wasn't shocked, or or I just listened. I found her fascinating. Yeah, let me tell you one other quality that she's got. And I don't know that I've ever heard this. temple has unbelievable courage. I'm telling you that if there was a crisis, or you were in a tight spot, and I shipped them hidden and nowhere, and something happened and all the navigation went out, and everybody was struggling to stay alive, she'd be one person you'd won on that lifeboat. And she is not intimidated by anything or anybody or any livestock livestock. I've seen her jerker cattle surplus tenant right out of the saddle. nanobeam physically, say get down off, that hurts, you're doing it wrong. And jump in the saddle. I'm doing good curry.

27:14

Now, the people that I know with autism, and I talked to a couple of them yesterday and said I was gonna be talking to you today. I mean, you're an icon to them, you know, I mean, like, the path that you pay for them is beyond for them. You know, I mean, you're you're the one of the biggest celebrities they could think of, and one of my students said, I always say Temple Grandin when someone says if you could have lunch with anybody who would it be? And she's she said, I always say Temple Grandin. So she was excited to hear that I was talking to you. My question is, given the fact that you do have some fan base, right? I mean, you have people who are just, you know, at your talks, there's 1000s of people who show up. Do you see an increase in the number of students coming into the cattle industry, based on your work with autism?

27:54

There's a lot of students when I first started, there were no women in the cattle industry, except in the officers and secretaries. That's totally changed. Now. You've got women managing feed yards and ranches and stuff like that. Now, that's, that just completely changed. And, you know, being autistic really wasn't the problem for me in my career, it was being a woman, that I had to make myself really good at what I did. And I had a very strong urge to prove to the world I'm not stupid when I was in my 20s.

28:27

Those were very happy years for me. And when I think of the 43 years, I was in business for myself, I think most about those years, even though we did huge jobs at coast to coast. It was sort of semi semi but temples jobs were always very fascinating. And I have to say like my roughneck crew, which was Dave, American, Hispanic quite redneck boys from farm backgrounds. They all came to a doctor and they can't they don't like to we all like my son is a lawyer for them. Department of Justice and a marine Colonel and he, he was a little boy, when she got to know Teflon. Of course, he likes to know that we all consider you're part of the family. She was part of our team.

29:14

And the other thing is, my 50s upbringing helped me and we only were taught manners, you know, kids sat down at the table. And when I made a mistake, and maybe stuck my finger in the mashed potatoes, mother would say use the fork to give the instruction that was done with all kids in the 50s. And then learning money, like hello allowance and like get five comedy comic books wanted. But if I wanted that little more expensive airplane I had to save for it. That was being taught very, very young. And the other thing I'm seeing now is kids are teenagers. They got an autism label, and they're good students, and they've never gone shopping. This is ridiculous. They're not learning basic skills. And the other thing is work skills. There's a grandfather come up to me. And they discovered their autistic when the grandkids get diagnosed, and granddaddies had a decent job, get a paper route today job. Now we need to getting these kids working before they graduate high school. Now we need to watch the jobs with too much multitasking. That's gonna be a problem. Do you think you can over accommodate a student? Yes, I think you can. I've seen situations where a student came into college thinking he was going to have a one to one eight, are you not? The other big problem I see in college is students that don't ask for help soon enough. When I failed my first math quiz, I went to the professor and he tutored me I was in a small college. And when I was in graduate school, I messed up my first statistics class, I got tutoring for not from another graduate student, I did something about it before I trashed the class. I just talked the student last night, she trashed one of her classes. And I said, Why didn't you Trump it? Should they don't do something soon enough about a problem. Now she got a deonar transcript?

31:01

Well, I think that there's you know, in a book that I had written that addresses the fact that there seems to be this big gap between people who don't know how to do college, right? It's not about that they're not smart enough to do college that they don't know how to do college. And one of the things that good friend of mine always says is that the three most important questions to ask if somebody is ready for colleges? Do you know when you need help? Okay. I already answered that one. Yeah. Do you know where to get help? And then the third one is, do you know how to use it meaningfully on an ongoing basis? And then if you answer no to any one of those three questions, college is gonna be hard, while the

31:39

other prompt, you know, like blame executive function for everything. And I think that's a bit of a cop out. My, my science teacher got me turned around high school, I was a rotten student in high school, he, he gave me interesting projects, and then studying became a pathway to the goal of becoming a scientist, that was really important.

31:57

I was endeared by the relationship you had with your with your mother, I was curious about it seemed as if it were these how she's portrayed. And maybe you can talk about her a little bit, that she's sort of made you live the different than not less than, and wanted to accept you for who you were, and encouraged you to kind of go in the direction that made the most sense.

32:18

And mother had a very good sense of how to stretch. But she always gave some choices. And okay, there's been problems. Now autistic kids don't want to wear masks, I suddenly got to practice with them at home. And there are some choices, you have to wear one, but there's quite a lot of choices, I'm not going to give you 100 choices what I even try some of the different kinds. And then you can buy one on Amazon, it's got a cute pattern. Once you figure out what type of mask you tolerate the best. So there's choices. It's stretching, just outside the comfort zone, you don't drop them in the dependent bortoli, which don't do, you don't take an 18 year old girl shoving a super crazy busy store at Christmas time. And all this multitasking, that's gonna be setting failure that's multitasking, that that's going to be a problem is working memory issues. She always encouraged my ability and art. And she encouraged me to do pictures of many different things and use different media that was always encouraged.

33:15

Do you give her for your success? I mean, because I mean, there's certainly a ton of resilience in your life. Do you give her the credit for getting you on the right path? Or was it well,

33:24

she she got me on the right path in the beginning. And then there was Mr. Carlock, my science teacher and then later on, there was a really good contractor. He was a former Marine Corps, Captain Jim old, he'd seen some of my drawings and he seek me out to help him get his construction company started. And he built the dipping that project to the shore and the moving we for 10 years, we did a whole lot of jobs together, on and he kind of put together a diverse team to want to do the construction work. And that's where, you know, certain people see ability, you only saw my drawings and no, that'd be good at doing these things.

34:02

One thing that you said before that I had as a theme of the a lot of the conversations I had is that the you know the continuum from I think you said geeky to autism, right? And we ever heard of retreived as quirky to autism. And then where do you make the diagnosis? I

34:18

just I'm curious about that. Well, that's the that's the million dollar question. And what the kid what tends to happen, I've talked to tons and tons of parents is you got the kid that speech. And autism gets the most services. So regardless of the cause of speech delay, that putting autism label on them, that happens a lot of states. Then you have the kid that's diagnosed around eight, because he has no friends. Those are kind of the two patterns I see in terms of public school diagnoses. And you see in order to get a service, they have to have a diagnosis. Then they get insurance, you have to have a diagnosis. So that's pushing it. And the other thing is over the years, they broaden the diagnosis, you know, originally back in the 80s You had to have speech delay in order to be labeled autistic. Then the early 90s, the DSM had Asperger's where it's basically geeky, socially awkward with no speech delay, and then 2013 and merged everything together, now you got a big bog hole of a mass going from, somebody ought to run a Silicon Valley company, to somebody who can't dress themselves. And we call it all the same thing. They need very different services. Now, I want to emphasize on the people that are non verbal, that some of these people can type totally independently, and they describe living in a sensory scrambled world, especially with vision being scrambled. And they can't control their movements. Do you see their stimming, the repetitive movement? It's done deliberately. And then there's some of these they cannot control the movements. And a really good book on that is how can I talk if my lips don't move? But to my capacity? I've met him he types completely independently?

35:57

I mean, where do you draw the line between someone getting a diagnosis? And not? I mean, that's, that's sort of the the area I work in with these college students who are sort of in between, right? You know, some of them?

36:08

Oh, that's the problem. It's a judgment thing. You see, it's a continuous trade. It's like, hates a continuous treat. When even all somebody short, for example,

36:19

would you err on the side of giving someone the diagnosis or not?

36:23

Well, the thing is, is, is I'm seeing sometimes the label holding some kids back or autism becomes their total identity. And the thing is interesting, I've been out to the Silicon Valley to the big tech companies, I've been to them. And there's estimates that anywhere from 25% to 50%, you know, maybe have some traits on spectrum of the programs, and they actively avoid the light. But I think it's a problem when I have eight year olds walk up to me, and all they want to do is tell me about their autism. I'd rather talk to them about their telescope or, or they're doing robots, or they like public speaking, or they like, you know, some other thing. Now, autism is an important part of who I am. But it's secondary to being a professor, I am the scientist, a designer, those things come first. You're getting so far into what that I don't think it's a good thing. There's a lot of discrimination, I heard some very bad things where a guy got denied a pilot's license, because he made the mistake of disclosing another guy. These are relatively recent, this is the last five years, I lost the outdoor kind of technical job, I can't say what it is the privacy concerns, been in it for five years disclosed and got laid off. So you can you know, if you're just mildly autistic, I wouldn't disclose to an employer, I would just say something like, I need a quiet place to work. Or on. I don't multitask well. So or we've got it, I've got to take this machine apart and clean it. Let me just make myself a pilot's checklist. You know, I'm just suppose those sorts of things. But that's it.

37:55

I had a guest who was blind, and he designs websites for people who are blind. It's really fascinating. I didn't really know. All right, well, that's good. Yeah. And one thing he I said, when did it become passionate about being blind and working on this piece of websites? And he said, You know, I wasn't interested in the field of assistive technology at all. I just got so frustrated that there wasn't good services that I switched. And he said, I'd rather be known for someone who's really helped create good software than the known through someone who's blind.

38:27

Well, that's right, create the software comes first. The software comes first. And I think that's the same way that you know, the tech people think about, and autistic traits are a true continuum. I know the brain only got so much processor space. So what do I allocate it to social, emotional, or writing code? There's a trade off there. And there's a really interesting paper called genomic trade offs by autism and schizophrenia at a steep price for a human brain. Because the same genetics that makes our brain big is exactly the same genetics involved with autism, schizophrenia, and their opposite traits on autism is overgrowth. schizophrenia is a skimpy network falls apart now, unless in late adolescence, then then you have a hard time telling what's thought from what's actually happening in the world you're mixing up imagination with reality in terms

39:18

of your legacy is, is the mention of autism important to you? Or is the work that you've done with cattle more important?

39:25

Actually, right now, some of the thing I'm really working on new book on visual thinking, visual thinkers are really getting left out of our educational system. And right now, my big priority now is COVID. All my trips have been canceled since March. I want to emphasize the importance of visual thinkers and getting screened out of our educational system. The algebra is a big gatekeeper. By the way, I teach math. Now, it's totally incomprehensible to me. I know how to do my old sixth grade math that was taught in the 50s. And that you need for skilled trade. I don't need anything more than that. But I do need the old fashioned up to sixth grade where they used to Chet, and I looked at some books on Amazon, and some skilled trade stuff, they use the 1950s style. The book was not copyrighted, 1950. Do you like teaching? Yeah, I find I actually do like teaching. And I don't think teaching gets as much credit as it should. going online. Well, I did one lecture one line, that was terrible. One thing I learned is the only way to do it is to put the lectures online, you know, pre recorded, and then take the class period, and turn it into discussion. And then I discovered that's called the flipped classroom. Well, I figured out to do that before I even learned the head name. And then you got those discussion boards. And there are a lot of work to do on right. And I spent anywhere from 20 minutes a night, to an hour and a half a night, almost every single night when we get to our last discussion boards. And then I've talked to students I've really horrible online classes where there's no discussion really on the discussion boards, just listen to canned lectures. But a good online class is more work than in person was probably at least twice as

41:06

much. What do you think online learning is better or worse for students with disabilities?

41:10

I it depends on what you're teaching our labs online, our disaster. Okay, we got cattle repro limb, well, that doesn't work on line on lectures online. So what we've done in our university, we managed to keep it open most of the time is our labs or in person, our freshmen classes in a gigantic engineering classroom, all spaced out. So at that one class is in person, every all the elections are online. And we managed to keep almost all our labs online. And that's really important. Do you think professors need more training and teaching? Well, the third problem, the basic problem, we've gotten an education right now is that in a lot of universities are professors more rewarded for research and bringing in grant money than for teaching. Teaching doesn't get as much credit as it ought to get. And I think teaching is really super important in developing students. And helping students to get out there and be be successful. I put a lot of work into my online class. I'm not gonna say it was the best one, but I know definitely not the worst one, because I heard all about some of the worst ones.

42:17

There I remember one time or her explaining me in the San Francisco Airport, the theory of relativity, you know, I mean, I was absolutely in shock. I was looking at all the people going by and templates, just getting right into it. And and to explaining all these things, I always that that is the memorable occasion, I was sort of dumbstruck. Our parents don't

42:44

seem the parents of today, and I'm a parent of today. So I'm doing my best not to not to redo this problem. This seems like they don't want their kids to struggle too much.

42:54

Right? Well, the problem is is is it needs to be learned from mistakes, then you learn how to do it properly. And it's just a piece of printer paper course of my generation was a piece of typing paper. Pretty much the same paper you just called it. Different machine was prints on now today. There's a very interesting experiment that was done by Kelly Lambert at the University of Richmond in Virginia. And it was about resilience. And she did it with rats. And it shows a very, very basic thing. And there were two groups of rats living in a group a group pan, and one group of rats gets their Froot loop treats as a really bad food sugar cereal rats love it. So they just chucked a Froot Loops on the floor and let them just eat them up. But then these other rats, she buried the Froot Loops in piles of sawdust. The rats had to dig for them. They had to dig and find their traits. Then after they live this way for now a few weeks or so months. On then she presented them with an impossible puzzle, a fruit loop inside of a container that they could not open. And she timed. How long did the rats keep trying? The ones that had dug for their traits on spent more time trying to do the impossible one. The other thing that's interesting is the ones that had to dig for the treats were less stressed when they measured stress hormones. Now what the OTS call that is just the right amount of challenge. We all have Froot Loops are under solders, they weren't under steel. But it's something there's such a thing is making something too easy. And then making them work for it. But work for it where I mean the rats get the Froot Loops, but they had to do some digging to find them. What's your favorite food? Well, I really like dark chocolate and I like raspberries. Those are things I really like. I like steak out and say

44:50

I was I was hoping you were gonna say that first. But steak burgers. You know. One of the things that I had read I don't know if was one of your books or where But you were saying that you weren't that religious or you take more of a scientific approach to religion? Well, I

45:05

talk about that if you want to read about that, I'd recommend just reading, thinking in pictures, because that's all in there.

45:12

When you're sculpting. I was just more curious about this. And I don't know how accurate was but you were asking the question of do you know where they go? So when you were saying, Do you know where they go? Was that on a more cosmic level? Or was it on a spiritual level? It wasn't trying to understand life and death? And do you have any more thoughts on what happens? Well, I just figure that let's worry about doing things that are good here.

45:36

I think she's a pioneer. Absolutely. I'd use the word pioneer. Again, I would use the word that I believe that she has great, great personal courage and wasn't afraid to delve into anything. Physically, she had courage, but she has moral and ethical courage, and she wants to help other people. And she has that scientific curiosity that is so wonderful of your habit, and that when she doesn't understand something, and feels it can be understood with with work and effort or research. She's the one in there all night ferret it out, I don't doubt that the work that she's done, that I am no doubt very unaware of, because she's not a braggart at all. And I have not seen her that much since she went on to Illinois, and then to Colorado, which has been many, many years now. But But I think she would definitely be remembered not only by the wonderful things she did for livestock, because she did a lot for them, too, so that they would not be abused, they'd be handled properly. There's no cruelty that was always emphasized to my men. So I think that their their temple has done a hell of a lot for people humans and and especially kids, I think she's just really contributing American and world citizen I, I have all the respect and admiration in the world for

47:12

I used to look for all these secret meanings of life. I don't do that anymore. I figure if somebody sends me an email and they say that their kid went to college because of my electric book, alright, that's doing something that's a positive contribution. And, and right now I'm getting really into this stuff about Visual Thinking because I don't want to see two people like me screened out at jobs and I was just addicted to video games and things like that. I want to see him getting out and having a good life and, you know, be successful.

47:48

A special thanks to Dr. Temple Grandin for taking the time to chat with me today. To hear this podcast and other amazing conversations with people redefining disability. Don't forget to subscribe to taking flight wherever you get your podcasts. For some fun bonus material and some other goodies head to apparel rock calm. This podcast was produced by Auto vieta sound engineering by Sean Henninger and Greg Williams. The music by my buddy Andrew Parker ringu. Check out more of his music at APR music calm. Today's show also features music from film score composer Sean hettinger from the band memories spelled with two eyes. For more of his music visit memory music calm or neon moon studios calm. And thanks to our sponsors Mansfield Hall, a residential college support program for students on the autism spectrum in Vermont, Wisconsin and Oregon, and virtual Hall providing virtual academic and social support for students attending college across the world. I'm here the rock. See you next time.