



**Transcript of “Kevin Kelly: Self-Quantification,  
Transhumanism & Technology of the Future - #218”**

Bulletproof Radio podcast #218



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Dave: Hey, everyone. It's Dave Asprey with Bulletproof Radio. Today's cool fact of the day is that scientists have figured out for sure now that your thoughts do control gene expression, and that's actually how your genes turn protein out of or create proteins. What's impressive is that the original idea for this came from a video game. Today's guest on Bulletproof Radio is a really well-known guy, a guy I'm really honored to have on and it's Kevin Kelly. Kevin is the co-founder of Wired Magazine, my favorite magazine for 2 decades now, and he's currently a Senior Maverick at Wired Magazine. He runs the Cool Tools website which is website that has access to all sorts of amazing things you'd never think of.

Kevin, I wanted to thank you personally for telling me about the 500,000 BTU weed burner that completely outburns everything else. I've always wanted one of those and I have weeds that are calling my name. Welcome to the show, by the way.

Kevin: You're welcome. I am so delighted to be here. This is a great privilege. I'm really looking forward to this conversation.

Dave: You're such a fascinating guy. It's hard for me to know where to start talking with you because you're one of the founders of the Quantified Self movement. We'll start talking there. You've had your photos published in Life Magazine and you've done an incredible variety of things that are just fascinating. The real thing I want to tease out in our interview, just all of the questions is what's powering you? How do you get the energy? How do you do this? Where does this come from? Let's start with Quantified Self.

Kevin: Quantified Self was something that Gary Wolf and I started 6 or 7 years ago. It came out of actually us noticing that there were a lot of tools being invented through sensors and things like FitBit. We were wondering how far could this go because it seemed like the idea of being able to measure yourself was immensely powerful. As these things start to, the first couple came along, we realized that nobody was even talking

about them, nobody was reviewing them to suggest which ones were better.

We decided that we would do two things; we would start a blog and try to gather this stuff together and put it back out and secondly, we would have a meet up and announce to the world that we were gathering all the people who are quantified selfing. We didn't even define what that meant. We just said, "Quantified selfers, show up." It's like, let's see who come. Remarkably, the first session which was here in this very studio that I'm in, there was about 25 people who showed up and just said, "I am quantified selfing. I am measuring myself."

Among those people, this guy who I just heard about named [inaudible 00:03:11]. There were others who are now very active in the movement, and they were all doing something or other tracking things, using technology to help them track and measure themselves, so they can understand themselves better. That is really the genesis of the Quantified Self. It's not really even something that I was doing a lot of, mostly that I was interested in the concept and the leverage that this would generate.

From that day on, we've had monthly meetings in the Bay Area and we've gone worldwide, with large conferences. There's tens of thousands of people who are now involved to some level of not just measuring themselves, but thinking about how we can do that better.

Dave: It's fun, the whole industry. I remember in 2003, I started working with biomonitors. I was working with a startup with a stick-on heart rate monitoring. It was Kleiner Perkins [inaudible 00:04:08] company and I was a consultant to them, but I designed everything that happened after the signal came off the body; how does it get to the Cloud, how does it get processed in the backend, and then what do you do with the data. What I want to do is video games and what they want to do is cardiac monitoring for outpatient care. It was such a gap. I didn't know back then about what you were doing with Quantified Self, and I think that might've been pre-Quantified Self.

Kevin: Right.

Dave: I would've been at that meeting if I'd heard about it.

Kevin: Right, exactly.

Dave: The first time I went to a Quantified Self meetup, I was like, "Oh, my God. These are my people." There was a hundred people at a loft in San Francisco. I'm like, "This is so cool," because everyone's talking about this and they're sharing the same way like an early 2600 hacker meeting was like, going way back to the computer hacking scene. I'm like, "Look, you can do this to the phone companies now and they don't even know." Bringing that whole culture into like, you can do this to human body and your body doesn't even know that you're tricked it; it's something that hasn't been done before. It's transformative.

Kevin: Yeah, exactly.

Dave: You inspired with Quantified Self to get these people together, pull them into your studio, and have them start talking about it. Did you think of a time that it would grow like it has now?

Kevin: No. It was total experiment. I was certain that this technology was on this inevitable rise to become smaller, cheaper, faster, better but our own little meetups and our own little involvement, we had really no idea. In fact, I've been surprised that other people didn't really [pile on it 00:05:49] and try and do it better or faster. There weren't really a need to because we were growing organically and we weren't really pushing it. We're being pulled along.

What remains to be seen is the degree to which this will continue going and how far will it go. For instance, recently, I've been trying out the idea of wearing one of these little devices called a Narrative. It's a camera that was based on the work that Gordon Bell was doing at Microsoft, and it takes a picture every minute or every 30 seconds, whatever you want automatically and sends it to the Cloud, and then the Cloud [inaudible 00:06:34] and it takes out a representative image of the scene that you're in and it goes on to your phones, so can flick through it and get the highlights of your day or whatever it is that you're trying to replicate.

The next version of this, we'll do audio and eventually, video. That is a Quantified Self. It's not so much quantification, but it certainly is recording your livestreaming. The usefulness of it, we're still trying to figure out what's useful for it. We're at the point with the Quantified Self where it's very clear that it continues to go forward and it's more and more, but it's not really clear exactly to the degree that we want to do ... How much are we going to do all the time? There's actually a really interesting tension, and the tension is between how much of this gathering of data about ourselves do we want to be automatic and invisible to us and how much of it do we want to be aware of, so we can change our behavior?

There's a certain degree where you just want it all invisible and just collecting data about ourselves which is really easy and we get it all, but then it's harder to affect change in behavior if that's what you want because you don't see it. There's another aspect where you actually want to have to do something or become aware of it, or have it impinged on your consciousness, so they can affect behavior change. Behavior change is not the only reason why we're collecting data, but that is one of the primary ones.

How far we go and where we go next is probably not as clear as what we saw a couple of years ago. Rather than the scale of it, I'm much more interested in the cultural role that it plays. How much do we wear this stuff, our clothes, or the Google glass, or not wear it. That's going to take some cultural education, some time, so etiquette. For instance, when I went to a party or if I go to someone's house, do I wear it or not? Do I tell people about it? There's still some things we have to learn about this and we can learn it. The evidence of cell phone rings shows that we can actually tame these things and evolve social etiquette about what's appropriate and what's not. That to me is a real interest, is the quality of the next step rather than how widespread it is.

Dave: Your point about the usefulness of the data is a really important one. I felt like there was a time in Quantified Self where there was almost a data fetish and I'm like, "I got the data." I'm like, "What did you do with the data?" I studied Information Systems. I was CTO of Basis [the wristband 00:09:46] company. Even then, I'm like, "I don't really care if I

take 10,000 steps because it doesn't change your life to take 5,000 or 10,000 steps. It's not meaningful data. We shouldn't even give that to people because it's useless." Unfortunately, it's the easiest to track and people believe if they take more steps, then it makes them better people. I think you can sell that. There is some value to moving, but it doesn't correlate to calories and there's all these technical things about it.

What I learned in the process of working on hacking my nervous system response is this number, around 350 to 400 milliseconds, and I'm forgetting the exact name of it, but in the early days of the computing industry, you had to go below this 400 millisecond response time or you didn't have a responsive system. IBM refined it down to about 350 milliseconds, and it's named after some guy. When you're looking at creating behavior change, if you have real time signal processing which means probably local, not Cloud based, and you can get a signal that says you're doing something wrong within that very narrow window, you can very rapidly ... which is why like heart rate variability or this ... My latest thing, I'm a fan of the Pavlok. This is a new device.

Kevin: I don't know that one. Tell me about that.

Dave: I'm an investor in a company, a very small investor, but more just a supporter of the company. What it is is, it's got electrodes on the back and it talks to your cell phone. If you don't go to the gym when you said you'd go to the gym, it tells your Facebook friends you didn't go to the gym, and it lets them press a button to shock you. You might say, "That's incredibly masochistic," right? It's not. The shock is mildly uncomfortable, but your nervous system hates the shock, but as an adult [mind in there 00:11:34] you don't really mind that much.

Also, the humiliation or knowing that your friends know and they're the ones pushing the button, but you don't know which one did it, it's incredibly motivational for behavior change. You can create a version to smoking and you could do these crazy things. Is this really Quantified Self or did it go ... It's not just quantifying, it's doing something and furthermore, if you locked it on and it was part of the prison system, you could do evil things with this. If you're the guy who pushes the button to shock yourself when you do something you didn't want to do, it's like a

clicker training a dog. Parts of your nervous system can be trained that way. I'm fascinated by that.

Kevin: Does it really hurt or is it just like a pinch?

Dave: It depends on who you are. I do electrical simulation trainings, so for me, I barely feel it. Most people, they swear, it's a pretty significant shock for most people but not enough to cause neurological damage or heart problems or whatever. It's static electricity and then some. Not as much as a dog collar which really will hurt.

Kevin: I think you're right. In fact, one of the conclusions about what we know about the Quantified Self so far is in fact, people are horrible. Humans are horrible in terms of processing data [inaudible 00:12:48] of any sort. You actually don't really want that quantification. That's not a very good interface, that in a certain sense what we want to come to this is to re-sensitize, to reorganize, to make new senses for us to feel these things in ways that we could. Evolutionarily, we have never evolved to be able to actually accurately perceive our blood pressure or our glucose levels.

If we take these devices and then, first we'll quantify them but eventually, we want to reprocess them so that we feel them in a different way like you were just talking about feeling a shock, but that's really crude. That's very barbaric. We could do it in other ways where you actually can maybe it goes through brain centers of something where you can actually do something about that. That's the end goal really is, is to bypass the quantification, entirely make it all internal and had the machines do it, but have us feel it or wear it, or in some ways embody it. I think that's where it's going in the long term.

Dave: That goes so far beyond the quantifying into the biohacking realm. I've been fantasizing for 10 years about having a 3D tongue printer. They have those things that blind people can use. Your tongue has the most things. If you hook that up to electrodes, your sense of touch is so much better than your sense of hearing. I just finished 7 days of intensive neurofeedback training where for hours a day, I have 8 channels, creating sound or I'm basically bringing a lie detector against my own



brain. I've done that 8 times because it's really helped me be in charge of my brain.

The feedback mechanism is so crude compared to our sense of tactile stuff. If my watch was getting my blood sugar, my blood pressure and it was sending a little signal to somewhere that I can easily pick up, I would have so much more bodily awareness than I've been able to cultivate using my native sensing network which is pretty crude. It's pretty refined in some ways, but it's not labeled well. You get these signals but you don't know what they mean. Teasing that out is a whole lifetime worth of learning and I'd like to learn that faster.

Kevin: Did you get to listen to the, I think it was the RadioLab broadcast of Birdman?

Dave: Not yet.

Kevin: There was a guy who was born blind, not very uncommon. He has no eyeballs, really no ...

Dave: Oh, the echo location guy.

Kevin: Echo location.

Dave: Yeah.

Kevin: He learned like many born blind children to click and listen to it. This is a surprise to me, this apparently is often, usually discouraged for social unacceptable behavior. He and his mom said, "No, let him go forward." He'd learned even as a kid to see, literally see the sound. They did some MRIs of his brain and it showed that in fact, areas of the brain that we use for vision had been remapped and used for sound, so he could ride his bicycle, he could walk down the street and tell you, "There's cars here." He was seeing. He couldn't see far. He can only see as far as the sound would go, but within that realm of where the sound was, he was literally seeing like you see, but with sound. That is just amazing. That does show some of the plasticity of the brain that it's capable of.

- Dave: The brain will change relatively quickly when you stress it. One of the things that's come across my radar there is that none of the things that changed the brain feel very good. It's like lifting heavy weights. You can't even make it an [opiate high 00:16:31] when you're done with it. You're going to grunt, and swear, and sweat and you're going to get that [crosstalk 00:16:36].
- Kevin: Interesting. That's the first time I've heard it. That's a very profound thing, that exercising your brain may be like exercising your body in the sense that there's an element of pain there. It must hurt a little bit. Things break, and that's a sign that actually progress is being made. I've not heard that before. That's a very interesting idea. I wonder if people are struggling, people like myself who struggled with Calculus or other things, that would make a big difference if you were told that at that time, that in fact if it didn't hurt a little bit, you're not really going to learn it. That's not a message I heard growing up.
- Dave: I think there should be a message, because it's metabolically expensive to grow new synaptogenesis or myelinogenesis, the two big processes in the brain. You have to have a lot of fat and not be used for some other process. Of course it's going to take ... Your brain is going to go, "Could you think about something else? Maybe think about that attractive woman over there or you think about those cookies over there." It's going to distract you because it's less work to be distracted than it is to have to lay down new neuropathways. There should be a push and a struggle. We tell people, "You got to work it out at the gym," but then you're supposed to just effortlessly learn Calculus and maybe, you're supposed to fail a few times.
- Every night, with my 5 and 7-year old, at bedtime, I tell them, "Tell me something you failed at today." Then, I praise them for it. I tell them, "That's good. That means you're trying really hard. Tomorrow, you can turn that into a win and you can tell me how you won." I want them to look at failure as like, yeah, that's what it is because maybe that'll make it, so they can lay down new neuropathways better or maybe I'm just messing them up. I sure hope not.

- Kevin: The idea of failure is one thing. There's even this other metaphor of exercising your muscles and the way that the muscles are built up through these small tears. When we want to say [inaudible 00:18:39] you're failing all the time although in a certain sense, you are, but there is this sense in which the hurt you feel is due to a very positive process. We can say the same thing in learning and intellectually that we will have some hurt, but that is actually a sign not much a failure, but actually a sign that there's a positive process happening.
- Dave: When the brain delivers hurt to your consciousness brain, the unconscious brain delivers hurt through feelings of failure. The biggest example of this to me was when I was doing Dual N-Back training. This is the kind of training ...
- Kevin: I don't know what that is. Dual what?
- Dave: Dual N-Back training.
- Kevin: Okay.
- Dave: It's a kind of training where you're trained to remember something you see; a physical location on a grid while you hear a letter. You're trying to remember, what position on the screen at the same time you heard something. It's mixing your visual and your auditory memory. It looks like simple challenge. You got a 3x3 grid and you'd just have to remember what lit up when you were hearing this letter, but it scrambles your brain. It's the only thing ever that's been shown to increase fluid working memory. You can actually raise your IQ oftentimes by 10 points in 20 days, your measurable IQ.
- I had the chance right at the beginning [inaudible 00:20:06] to fly around the world and train hedge fund managers. These guys are like, they control billions of dollars. They're super high performers. They're type As. The number of them who would complete 20 days of training was essentially near zero. The reason for this is after the second time we did this, these enormous feelings of failure and frustration come up. What's going on is their brains' going, "This hurts. I don't want to double

my working memory. I'm going to have to do that if you keep torturing me."

For 14 days, you [beat 00:20:34] yourself against the software feeling like a total jerk for even trying this and probably mad at that Dave Asprey guy for suggesting it, and after 14 days, their score goes [inaudible 00:20:41]. All of a sudden, you can remember, "Oh, that square was lit up 7 moves ago and I heard the letter E 7 moves ago," but you have to go through the pain. Pain equals ... There's something else I could be doing anything on earth that's better than this right now. It's that act of overcoming the pain of failure there in my mind that finally got me through it.

Kevin: Right. That's actually where teachers become really valuable is that they can promise you or guarantee you or persuade you that there is something, a payoff at the end which is something if you're doing this alone or even a self-help book, you don't really necessarily have that assurance and so it's harder to keep going because it's hard to believe in a certain sense that there will be payoff, that it just doesn't continue to hurt, hurt, hurt.

When you have a mentor or a teacher who can say to you, "Look, I've seen a thousand people go through this, and this is the stage you're at. You're going to feel really, really terrible right now, but believe me, at the other end of it, over the hill, there's a nice valley and you'll be great."

Dave: It's also the role of the community and the [inaudible 00:21:52] that you built is Quantified Self. I imagine there are probably thousands of people now who probably wouldn't have kept track in their data except they told everyone that they're going to show it the next month at a Quantified Self meetup. They just stuck with it and measuring their food or whatever else that they were doing.

Kevin: Yeah, it is true. Community is another accountability of some of those kinds of things. Things [that fit 00:22:14] that another devices have tried to do with having you to be accountable [in some sense as to what 00:22:20] you're doing, and I think that's a very, very powerful force. It's part of this whole movement to the social dynamics, the social media,

the social technologies which is that people together can be much more powerful than you alone. We're rediscovering that again, and again, and again, and again.

Dave: Let's shift gears a bit. You wrote a really impactful book called, What Technology Wants.

Kevin: Thank you.

Dave: It was widely lauded and in fact, I have a copy of it in my book shelf here. The famous Jay Abraham actually told me that I should check it out, and just reminded me to open it up again. What does technology want? For listeners who don't know about that book, in a summation, what's the thesis behind, What Technology Wants?

Kevin: Even though technology pervasive in our lives, there's a recognition from most people that it's the main driver of culture right now. Most of the things that we're worried about in the world are caused by technology. Most of our problems are caused by technology as well as most of the new opportunities. Yet, we don't really have a very good theory of what technology is. We have something very similar to the theory of biology before Darwin which is like, this is one thing after another. The biologists would have this curiosity cabinets and they would put in all these fabulous biological specimens but there is no framework for understanding how they were related to one another.

Technology, for most of us is like that. We've blazers, we've got GPS, we've got nanoparticles; this is one thing after another. They're all in your curiosity cabinet. [I sort of set out because I'm trying find it 00:24:16]. Was there something that ...Was there a framework or were there something that with unified technology that would help us evaluate new technologies when they came along. I'm not so crazy myself in trying to have all the latest things. I like to keep a little bit of distance and I wanted some help in trying to frame all that was happening.

I felt what I would do is go around to all the philosophers and technology experts and interview them, and have them tell me what it is

and I write a book. It turned out that there wasn't a theory. I began to cobble this together and what I came up with was the realization that basically, the same dynamic that runs through this world of technology is the same dynamic that produces us. It's evolution accelerated. It's the self-organizing aspect of evolution.

[Inaudible 00:25:20] after technology was to see it as a system. There's a pen and there is a flash drive, and there is this camera. None of these things are alive in any real sense of the word, but if you take the system of the factory that made this pen and the tools to support the factory and the tools that support the tools that have to make the tools to make the factory; that network of all these technologies that that depend on each other, that thing itself is almost lifelike. I call that the Technium which is indistinct from technology as singular species.

There is this web, this internet so to speak of all the technologies in the world and they're all dependent on each other. None of them can stand alone. I can make a stone ax in the weekend, nobody here could make this thing by themselves even all your readers together as smart as they are could not do that. We have this very large interconnected network of technology and that is the Technium. That thing not only exhibits some of the behavior that we expect in evolution, but my argument is that it has a system, like any system that has its own agenda. It has its own tendencies. It has its own Technium. This network of all the technology we've made almost a civilization level itself has certain tendencies or urgencies, certain biases that when all things being equal, technology will want to go in certain directions and it does things.

A great example that I might suggest is current technology of the internet. It wants to copy things. Copying is an inherent, vital, essential, primitive aspect of what happens in digital technology. It wants to copy and make copies of itself whenever you're sitting right now making multiple copies of this as it goes through the internet. You can't copying. It wants to copy. You have to work with the copying. You can't prohibit it. You can't outlaw it. You have to figure out, how can we make and reward people for making things even though copies will be ubiquitous?

That's an example of what I'm looking at and what technology wants. I went through and said, "There's some large scale trends, large scale tendencies in technology as a whole like it wants to continually increase in complexity." It wants to increase in specialization. I can make several different predictions that I think are going to be pretty much on which is that you take any device we have today and I would say in the future, they'll be more specialized versions of it. Cameras, we continually make even though we have cell phone cameras, we communicate more and more specialized varieties of cameras, super high speed cameras, super high speed underwater cameras, super high speed infrared cameras which goes on and on, and on.

Those are the kinds of trends I try to look at in terms of what this technology wants. It wants increased specialization, increased complexity, increased mutualism which means more technology becomes dependent on other technologies. Also, we become more dependent on other kinds of technologies. It wants to increase in diversification. It wants to increase in energy efficiency. There's lots of long term scale things that technology is leaning towards and my message to readers and to everybody is that we should embrace those trends rather than fight them or outlaw them. We should embrace and try to work with that rather than trying to deny them or prohibit them.

Dave: Does that mean that you're a transhumanist?

Kevin: It does, I think. It means that we ourselves are in our invention. We are our first invention. We're the first animal we domesticated. We have made our own humanity. We have made ourselves technological. We are deeply, deeply dependent on technology to the point of cooking has, which [inaudible 00:30:08] stomach that was a technology when invented, it changed our entire face, jaw, or teeth, our digestive habits when we domesticated animals and milked them. We evolved very quickly, genes or lactose digestion [in adults 00:30:26]. We're continuing to do that.

As we have more and more technological power, we will continue to remake ourselves into something, so humanity is really not a destiny. It's a process. I would say with new technologies from genetic

engineering to AI, we are continuing to make us and remake us, and I believe that we're going to make ourselves more human. When we think about what makes us human, it's just not our hairless bodies. It's the fact that we've remained ourselves. That is the definition to me as humans, is the animals that has remained themselves. We're going to keep making ourselves and remaking ourselves, and that's my definition of transhumanism which is that it's something a trance that we're in the motion of, we are in the process of.

I'm not a transhuman who wants to chop my head off and freeze it or download myself into a computer. I'm not eager to do those, but in the broader sense, we're going to continue to reinvent ourselves.

Dave: Continued reinvention is something that is a core human drive.

Kevin: Exactly.

Dave: I completely agree with you there. I'm also of the same opinion and probably, it's also my good transhuman friends, but I'm not that interested in freezing my body. I'm also not interested in mummifying myself because those seemed like [inaudible 00:32:11] technologies to me. They're both a quest for the afterlife or something like that, or a quest for immortality. I'm all over the quest for immortality but I like to do it in my meat rather than that or frozen stuff.

Kevin: This again to another area, I think there's some fundamental misconceptions about competition and ability to download ourselves. The matrix, the competition it works on is actually very, very important. There's a famous hypothesis called [Church-Turing hypothesis 00:32:49] which says that basically all universal competition is universal. It doesn't matter what matrix, what substraight you do the competition on. It's equivalent. If you look at the original theory, it says it doesn't matter assuming you have infinite time and space, but limited time and space is the definition of reality.

The problem is is that in the real practical terms, the substraight that you're doing competition on does matter. This is my prediction that the only way you get really humanlike kind of intelligence which is only one



of many millions of kinds is if you have a very humanlike substraight like a brain. It says that if you don't have the gray matter, you have a different kind of intelligence which to me is the real value. That's the reason they have AIs, not because they can humanlike, but because they can be unhuman like or inhuman like, or alien. That's the power. We want to have different kinds of thinking. We want to think differently.

That's where the power is going to be because there's going to be problems that we have as a society that we cannot discover or resolve with our own kind of intelligence. We need other kinds of thinking. That's what we make an AI for, is because it's going to think differently. It's so easy to make this human brain that we don't really want and need to do that. If you make a brain that can remember all the things like Google, by definition, it's not human. The hope of downloading ourselves into the computer unchanged is a little bit [scattered 00:34:44]. It may be possible to transfer something, but you're certainly not going to be thinking the same way that you did before.

Dave: You might be thinking about [inaudible 00:34:54] and soon they'll be different.

Kevin: Right.

Dave: It's that whole trans that would point ... not exactly a transhuman. You're something else.

Kevin: Exactly, right.

Dave: You might not maintain your humanity. Going back to Bill Joy's famous white paper and he was the CTO of Sun Microsystems which has since been eaten by Oracle, Bill wrote a [seminal 00:35:14] white paper that I believe Wired published probably when you were at the helm. You wrote a paper about the coming dangers of technology and this was long before we had the Cloud the way we do today and some of the other 3D printers. In fact, there's a 3D printer behind me right there. Are you concerned about what technology wants is really not being negative for us?

Kevin: Actually not in general. I've one or two things that I do worry about. Bill Joy's article is mostly about an interesting subset of technology which are robots, computer stuff, nano and genetics. What's interesting about those 4 are basically those are all the ones that have software application in it. They can self-replicate, and self-replicate, and self-replicate and that can rapidly cascade almost out of our control. This is something to legitimately be concerned about because it's not just making a bomb or something.

It's making something that can continue to replicate and accelerate in a way that can veer out of our control very quickly. AI of course is one of those. [Inaudible 00:36:36], Stephen Hawking, and others have raised concern about AI going out of control. There is a legitimate concern although I think it's overblown. I'm very optimistic about it because we have existence proof already which is children. These things are going to be like our mind children. We can guide and instill in certain principles that when we let them go, they can be guided themselves and even pass the guidance on.

We know that in theory, this can happen. It's a matter of us doing it, and actually, we're beginning to do that right now in trying to instill ethics and morality, [so it speak into, let's say driver 00:37:24], computer driven cars, they have to make decisions, sometimes make choices. The interesting thing to me is that by doing this, it's like having children that make you better. I think we're going to become a better ethicist in the moral dimension because we have to teach these very dumb computers how to do this. We're going to realize that we're actually never really good at it.

We think that we're superior as we're driving down the street but as you know, the whole trolley dilemma is a dilemma. There's no real answer and we think that we have this all sorted out but we're actually very sloppy about it. I think that by having to program another generation of creation to do this, we're going to become better at it ourselves. That's my one answer to Bill Joy's where we're going is that, I think yes, I think it is a very big challenge, but it's a challenge that's good for us because I think it will make us better in the process.

- Dave: That is a very eloquent answer. I'm still blown away by the number of different projects and things that you've done, that had really brought [inaudible 00:38:41] impact and I'm torn because we're running towards the end of the interview and I want to ask you about the WELL which is one of the first intact online communities and you played a hand in that. I just want to talk to you about Out of Control, your book about decentralized emergent systems that Wachowski, I say the name probably wrong, the guys who wrote The Matrix, the best movie ever basically cited this as one of the things that inspired them to write the book. Of those two stories, which one our listeners can they care about the most because I don't know.
- Kevin: Let's talk about Out of the Control and the WELL, and The Matrix, of course. The WELL just briefly was the one, the original pioneering online communities and we started in '84, '85 and I learned a [humendous 00:39:29] amount about the online world. One of the biggest surprises for us was how fast people online really wanted to meet face-to-face, and how that kind of virtual relationships really drove physical, real life relationship. I was in some ways, [buoyed 00:39:50] by that because I realized that these were not substitutes for the rest of our lives. These were actually augmentations to it, and that was one of the lessons I [think about in 00:39:58] the WELL and the WELL community.
- Dave: I was a member of the WELL back then, not in '84 but going back to probably '91, '92 timelines.
- Kevin: I was still very, very active then. It was at its peak. Out of Control was a book that I felt where it was really trying to deal with this idea of decentralization, [decentral control 00:40:23] and how you can make something smart from a lot of dumb things. The metaphor that I used was the hive mind, the beehive that actually has a longer memory than individual bees and is a much more being as a super organism that the individual parts, and how the emerging internet was beginning to resemble some of those kinds of things. The aspect of the book that the Wachowski brothers or siblings were interested in was the third movie where they had this organic swarm thing that was at the [bases 00:41:10] of the world.

What we've seen playing out, the book's 21 years old at this point is how more and more of both businesses, institutions, and the net itself is they're moving very, very steadily towards decentralization. That's the big trend in our culture in the last 30, 40 years is this decentralizes, this leveling of the hierarchies into the power of what you can do with a decentralized systems. I want to make one clarification about that which is that there is a limit that while Wikipedia is really fantastic, Wikipedia and Uber are the two classic emblems and icons of this, the Wikipedia is better than any encyclopedia that we had before, but it's not the ultimate encyclopedia.

While a completely decentralized bottom is by far the best way to start anything and it will always take it further than you think you could go, but it won't take you all the way. Wikipedia itself is beginning to have other levels of hierarchy added on to it. They freeze articles. They do all kinds of things from the top down to make it before. Eventually, and [if given some time 00:42:41] even the Wikipedia will be some kind of combination of Encyclopedia Britannica high-end editing and the bottom because you need both.

Uber and all these other ones that are becoming decentralized, they will over time accumulate, vetting of drivers, and all those kind of stuff that come from the top down. You need both to get to where we actually want to go, but the decentralized bottom up will always take it further than you thought you could go. It's always the best place to start. We haven't yet finished exploring to see how far that will go. That's the big drive right now in the world of almost any kind of technology is how much can you do with this decentralized bottom, and the answer is, far more than you thought.

Dave: As a technologist, I played a real role in the rise of the data center business model which is basically mainframe of these giant, centralized data centers. With the last five years of my career in tech, I was talking about what I call the ambient club, the idea of get it out of the data center. It's much better if all the files are on your iPhone than if you have to download them each time you need them because of this thing called Physics and all of these.

What's then the biggest surprise for me as a technologist, to some extent a technology futurist is how slow the decentralizations happen. The things that slow it down are usually governments and control institutions. They make really inefficient systems because they want to be able to control them. When you talk about what technology wants and you look at these emergent behaviors, are we going to just break them with regulatory stuff?

Kevin: Make no mistake that there's going to be a lot of conflict. The established ways of doing things will rebel and fight against, and try and stop this. There's winners and losers, and in the legal realm especially, the legal is always playing catch up to technology. It will always run ahead. I think there's certainly going to be push back, but I think the real solution to this is actually to continue to decentralize and defragment the lawyer system. The law is really interesting because it's a code.

We know, the technologists, we know the code. Part of what we want to do is actually to try and accelerate every vision in how we make a legal code in order to try and make it run a little bit faster, because it is way, way, way behind but I think that is a friction. There's going to be a friction that will be around for at least a century. In a certain sense, what a code has always done, a legal code is fix what is being done socially. What we want to try to do is accelerate that process.

What we saw in the copy world, everybody was copying and the law just absorbed the fact that there was a social consensus that certain amounts of this was okay. That has to be brought into the law, but this takes so long, so we need to accelerate the ways in which we can capture the consensus into law, and to make it more flexible. The [sunset 00:46:18] guys and there's many people thinking about how to do this, laws that elapse themselves after a certain amount of period, have to be renewed.

Tim O'Reilly works with the Government 2.0. Government has been ignored for better or for worse. I'm one of the people who tend to ignore it. I really admit that we could do a lot better at devising a way to have governance that works. Talking about pain, it's going to take a lot of pain to do that because Government's all about resolving inherent conflicts. It's all about compromisers. There's just a lot of things, but we can learn

how to use technology to help us do that. The law will always be behind, but we can actually make it not so behind.

Dave: Got it. The law won't hold technology back for that long.

Kevin: It is always holding it back, but we can make it hold it back less. In a certain sense, you [would 00:47:37] allow it to be a little conservative. That's okay to have a little bias where it's like saying, "Hey, wait." We move a couple of those waits, so I just say, "Hey, wait, wait."

Dave: Well said. Here's that really big question that we're getting to and people who've listened to this whole interview by now know that you're a deep thinker and you've had an unusually large impact on many different aspects of society like very broad things that are still way ahead of the curve. How do you do that? What drives all of this stuff? There are very few people on the planet who can lay claim to a number of things that you've done like this. What's behind that?

Kevin: That's a good question. I'm going to work in ... [I want to mention 00:48:39] one of my latest projects which is a graphic novel that we kick started two years ago and it's about angels and robots. It's about a young, coming of age story for a young girl who's figures out that the newest conscious robots are going to be, and sold from angels of which there's a million different species who want to shortcut the normal process of getting bodies and jump into these robots without being [adequately 00:49:11] prepared morally or constitutionally.

What I try to do this ... There are some tricks and people like Brian Eno, someone who I know has taught me some of these really good rules. The thing that I am [always 00:49:35] inspired by, maybe that's the word is stories about things that we thought were true that turned out to be falsely wrong, the things that we thought were false, and were true later on and the ability to change our minds. In a certain sense, nothing gives me more satisfaction than having my mind changed.

What I'm trying to do is to surprise myself to change my mind and that entails constantly questioning my own beliefs and assumptions, and the assumptions of others. There's a little bit of a ... Maybe it's a game,

maybe I guess you would call it of trying to view things from a different angle and that's the lateral thinking that they talk about which for me is this pleasurable and ... The ultimate motivation is I find a pleasure in learning about things, questioning things, trying to imagine what if, the way the science fiction writer might.

It's a joy. It's propelled by joy. It's simply the joy of discovery. Coming in from the angle is actually one of the reasons why I travel a lot and why I think travel is so important for me, anyway is that I go somewhere far and strange, and by being out and looking back in is another opportunity to try and see things from a different angle. Brian Eno has this thing he does with bands. He'll say, "Okay, band. Pretend that you're an [African 00:51:28] factory and you're making music." Suddenly you're [seen in a different role 00:51:33].

Marvin Minsky does this, another thinker. He pretends he's a Martian. He's not assuming anything is true, not that humans are better than anybody else or anything. He's assuming he's a Martian coming in and questioning things as if he was an alien. That playfulness, maybe is the word, is what I seek and what gives me pleasure of trying to not take things too seriously even the things that I believe really strongly and subjecting them to, "What if that wasn't true? What if the Quantified Self was a total fad? What if technology ... Which [inaudible 00:52:26] doesn't run for another year, then what happens? What if it runs for a thousand years?"

It's a playful approach, this stance of fun in a certain sense to that opportunity that we have to try to imagine what could be and not just what is.

Dave: Very, very cool. I was wondering if you'd have a Quantified Self Answer. I actually monitored what I was doing and I can tell you what makes me tick. What I heard there was joy and a sense of playfulness and this continuous questioning from different perspective are the things that are really motivating you.

Kevin: Yeah, it is. For whatever reason, when I was growing up, I was really interested in art and science which I think is actually, to me, my wife's a

scientist, and if you ask what drives them, it's just curiosity. It really is. Each time they do an experiment and it doesn't work, it's like, "What is going on? I have to know. I need to know what is going on." A lot of the pursuit can be propelled with money to make a drug, but in fact ultimately it's curiosity about how things work that really them individually.

For me, I couldn't decide whether to go to MIT or to art school because I was interested in art and photography. It was a way of investigating the world. Play is underestimated as both a driver and as a prime motivation, and I would like to honor that.

Dave: Very well said and incredible to get a chance to ask you that question. We've passed briefly at the Quantified Self conferences and said hello and all, but not really had a chance to sit down. What an amazing answer. There's a question that I've asked every guest, all 200 and something on Bulletproof Radio at the end of the show and it's; given all of the things that you've experienced and all of your knowledge which in your case is a very unique set of things, what are the top 3 recommendations that you'd make for someone who wants to perform better at whatever it is they're here to do? Whatever they want to do, whether they want to be better parents, they want to get better [inaudible 00:55:15], it doesn't matter.

If you want to perform better, these are the 3 most important piece of advice you have to offer.

Kevin: The 3 most important pieces of advice, okay. One, I kind of hinted that already which is that I think you are ... This was a quote from Tim Leary which was, "You're only as young as the last time you changed your mind," to stay young can change your mind. Esther Dyson has another quote, a friend, a prominent investor in D.C., funder. She says, "Keep making new mistakes," and this goes back to the kind of thing that you're talking about, about teaching your sons failure. Her contribution was new mistakes. You can make the same mistakes, you want to make new ones.



Dave: She's an incredible woman. I pitched her when I was Basis, and she was so helpful. I was really grateful for her as a human being. Good thing to quote her.

Kevin: Keep making new mistakes. The third one is a little bit more complicated to talk about. There was an [axiom 00:56:47], something that people repeat that is true to some extent which is this idea of Joseph Campbell, Follow Your Bliss. Rather than follow the money, follow your bliss. I was [persuaded 00:56:59] of a contrary view by a guy, Cal Newport, I think his name is wrote a book called Too Good to Ignore. What he says is that, "The way you get to your bliss is my mastering something," and rather than you find your bliss and then you master it, you get to your bliss by mastering something and that mastery helps you to move towards your passion.

A lot of people or young people are often paralyzed in the beginning because they don't have a passion. They're saying, "I need a passion. I need a passion. I need a passion," and they don't have a passion. Fearfully, they can't go forward. In the very beginning, what you want to do is you want to become so good at something that people can't ignore you. You really want to give your heart to something and it almost doesn't matter in the beginning, just give 100% even if you aren't sure what's your passionate about, just decide that you're going to master something.

In that mastery, you can move yourself to something that you are just passionate about. Mastery is a way to arrive at your passion. That's much more practical and ultimately satisfying way to approach the possibilities of the world which is don't wait until your passionate about something, begin now with almost anything and try to become so good at it that people can't ignore you about it.

Dave: Wow. I have never heard mastery as a path of bliss. Out of 200-something people, what a very eloquent way of putting that out. Thank you for that thought. I've never thought of it, but it makes so much sense just right on its face. That's a gem.

Kevin: I'm sure in your own life, you've probably recognize that.

Dave: I do, yeah.

Kevin: You probably became really good at something, but it's not where you ended up. It's where you started and you became so good at it that you can then move into the next state. That idea of that wherever you're going to start is probably not where you're going to end. Start by becoming really, really good at something. Put that 10,000 hours in whatever it is. It may not be where you end up with the greatest satisfaction, but you'll get there by that being so good.

Dave: Very, very well said. [People who finished 00:59:31] hearing this interview, I'm sure they're going to want to hear more about your work and normally, I can name a URL and tell people where to go, but you've got so many different projects underway. Where should people go to find out more about all the cool stuff that you've got your hands in?

Kevin: I'm pretty Googleable. My e-mails been public for 25 years. So, [kk@kk.org](mailto:kk@kk.org) is very easy to find, but my website, [kk.org](http://kk.org) has a bunch of stuff, cool tools where we review one and recommend one really great cool tool every weekday. I've a site called, True Films where I review the best documentaries. I've been doing that for at least 15 years. I'm pretty active on Google Plus for weird reasons where I actually post stuff and reply. I don't [read 01:00:26] much Twitter, but I do have and is broadcasting. I'm pretty accessible at [kk.org](http://kk.org). Anything you want to find out is there. Thanks for asking.

Dave: Of course. Thanks very much for being a guest on Bulletproof. Thanks for all the things you've contributed to the evolution of technology. You've had a meaningful hand in a lot of the things that have been a huge part of my career. Hats off and thank you.

Kevin: Thank you for the privilege of being here and chatting with you. I'm honored to be on your show. It was really a great conversation. I had such a good time. I appreciate all the work that you're doing within Quantified Self in the greater arena of technology. More power to you. Keep going. Keep making new mistakes.

Dave: Awesome.



Kevin: Great.

Dave: If you enjoyed today's show, you know what to do. Go on to iTunes and click "Like" and tell someone how cool this way. Later, why don't you check out Cool Tools and check out what Kevin's up to because he's one of the great minds of our generation, at least in my geeky opinion. Have an awesome day and thanks for listening to Bulletproof Radio.

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