



Transcript of “Learning Should Not Be Easy with Andrea Kuszewski”

Bulletproof Radio podcast #74



Warning and Disclaimer

The statements in this report have not been evaluated by the FDA (U.S. Food & Drug Administration).

Information provided here and products sold on bulletproofexec.com and/or upgradedself.com and/or betterbabybook.com are not intended to diagnose, treat, cure, or prevent any disease.

The information provided by these sites and/or by this report is not a substitute for a face-to-face consultation with your physician, and should not be construed as medical advice of any sort. It is a list of resources for further self-research and work with your physician.

We certify that at least one statement on the above-mentioned web sites and/or in this report is wrong. By using any of this information, or reading it, you are accepting responsibility for your own health and health decisions and expressly release The Bulletproof Executive and its employees, partners, and vendors from from any and all liability whatsoever, including that arising from negligence.

Do not run with scissors. Hot drinks may be hot and burn you.

If you do not agree to the above conditions, please do not read further and delete this document.

DAVE: Today's cool fact of the day is if you purposely post more status updates on social media, you'll reduce your feelings of loneliness even if you don't get any responses from your friends. Your feeling of loneliness is more strongly related to how many times you post rather than how much of a response you get. I guess that's a replacement for the bartender from years ago.

Hey it's Dave Asprey with Bulletproof Radio and I'm excited to introduce you today to Andrea Kuszewski. Andrea is a writer for *Scientific American*, *Discover Magazine*, *Qualcomm Spark*, *Wired UK*, and she writes a blog called The Rogue Neuron. She recently wrote a piece, a couple years ago, about how to increase your intelligence that is driving major amounts of traffic to I think it's *Scientific American*, Andrea?

ANDREA: Yes.

DAVE: Awesome. By the way, welcome to the show. I'm kind of getting ahead of myself.

ANDREA: Thank you. Good to be here.

DAVE: You write about so many cool things that I don't even know where to start interviewing you today, but one of the things that stood out was obviously increasing intelligence. How could we not talk about that? But you write about heroism and extreme altruism and morality and a bunch of other things that maybe don't line up necessarily with increased intelligence. So I want to talk about those things for sure.

ANDREA: Okay.

DAVE: First though, let's just talk, why do you study intelligence? Why did you write about this? What's the deal on increasing intelligence?

ANDREA: Well, it's always been kind of a goal of mine to push myself to my highest potential. You know, to achieve as much as I can. I've always been one of those universal self starters, self learners, I taught myself to read at age 3, not because I wanted to, it just happened to work out that way, so I was reading at a very young age, and I was always taking in lots of information. So learning became a way of life for me.

So as I got older and I started working as a therapist with kids on the autism spectrum, so kids with Aspergers were kind of my specialty and these were kids that had a lot of potential, but there were a couple of things going on where they were kind of impeding their progress in certain areas. So my goal was to take these kids that have all this raw potential, and how can I get them to surpass all of these limits that are standing in the way of progress and getting them to push themselves beyond what anyone thought they could achieve?

And so that's where I kind of started my whole career and that's kind of the main theme throughout all the work I do is trying to find a way to help people reach their highest potential in every way. Intelligence, creativity, you know, fewer sociopaths, more heroes. We need that. We need more of that heroic courage in the world. So really, that does tie in with reaching your highest potential.

And when you think about humanity in general, where do we want to see humanity, what do we want it to look like in 100 years and how do we get there? It doesn't have to be fancy with new technology, it can be as simple as being conscious of how you live your life and choosing a path that is going to get you to the place where you want to be and doing it deliberately.

DAVE: That's some pretty big words. So we need a sociopath reduction strategy?

ANDREA: Yes. Yes.

DAVE: Alright, I fully concur with that. I've never heard it put that way and it's a part of why I write the [Bulletproof Executive](#) too. I believe that when people's brains are turned on all the way, they do less mean stuff and the world's a nicer place. Do you have anything more specific about making less sociopaths?

ANDREA: Well, it's a complicated subject and it's one that I'm currently working on right now that's my main area of research. So, looking at sociopaths right now, we look at what were they like as children and can we identify people that are going to be future sociopaths? What are the traits that they have? What are the deficits? Why do they go down this path of destruction of the entire world at their own benefit?

DAVE: Oh you mean like propensity study of political science or something like that?

ANDREA: Well you say that, but I do have a theory about presidents, but in any case. Yeah, so when you look at one of the traits that they have and people seem to think that sociopaths, they have some kind of a mutation. There's something wrong with them. That something happened that made them evil. And really it's more of an adaptation. So they have the traits that they have, and they have the inability to handle the world around them with what they're given. So they have poor emotion regulation. They have very low exhibited empathy. It's not that they have an inability to empathize with people, they can, it's just that it's so intense for them, they don't know how to handle that appropriately so what they end up doing is just like shoving all that off to the side.

So I mean, everyone experiences this to some degree, so it's kind of like a spectrum of sociopathic traits you know? So if you go through a bad breakup and you're really depressed and you're like screw relationships, this is horrible. What you tend to do is you isolate yourself emotionally from things. You shove those emotions aside and

you disconnect from people and you get that cold callous demeanor for a short time as you're getting over this breakup, but as you're healing, you reconnect with your emotions and everything works out normally. But with sociopaths, imagine doing that at a very young age, maybe go through some kind of trauma where it's so debilitating that they have to completely disconnect from those emotions because their ego is so fragile, they can't handle connecting to them and still surviving. So really it's a survival mechanism.

DAVE: Do you believe that there's any relationship between the sociopath side of things and Aspergers or ADD? Are they related in any way?

ANDREA: Well, they're related in the fact that there are some concurrent traits. So when people are often like "Oh! Cold callous behavior! Not showing empathy so, therefore, you know, people with Aspergers are sociopaths." That's not true. So there's like a necessary sufficient group of traits that must be present in order to qualify as a sociopath. So not showing empathy is only one of them. Another one of those is having a very low emotion regulation which you know often, Aspergers, they have the same thing. But another feature is a sociopath is always up for the preservation of themselves. They put everything in the world through a filter of "how am I gonna benefit." When they do things that seem to be charity driven or they're doing something that appears to benefit someone else, you know that in some way they are benefiting more either through social capital or...

DAVE: So if you let someone with Aspergers when they're a kid read Ayn Rand, does that make them a sociopath?

ANDREA: It could steer them in that direction, yes! And I'm not saying that no people with Aspergers are sociopaths, I'm sure they overlap as most things do.

DAVE: So you probably don't know this, but I had all the symptoms of Aspergers although I was never diagnosed until my mid 20s and I was diagnosed formally with ADD based on spec scans and behavioral studies and things like that.

ANDREA: Right.

DAVE: So I'm sort of asking these things and for anyone listening who doesn't know that, I know a little about emotional regulation and hacking the brain to make the brain turn fully on because you actually can handle all of those inputs including emotional and environmental sounds all of those things after you've basically upgraded your performance on many different levels. So I'm not making fun of or saying that people on the spectrum have anything negative or sociopathic about them, but it's very interesting to hear how you explain the overlap there because it's true.

If you can't regulate your emotions or you don't know how to do it or you don't have the energy in your cells to do it and you also have just a hard time dealing with all of that, all of a sudden then if you get that push in the direction of do everything for yourself, you may not understand that you're impacting others in a harmful way.

ANDREA: Right.

DAVE: Very well said. Thank you for walking through that. I know that's a little controversial territory and turning that stuff off's important.

ANDREA: Ex-altruism, you know extreme altruism, what I'm looking at is the relationship between that and sociopathy. And they are actually very similar if you look at the exhibited traits. When you're looking at the whistleblower type of personality. Edward Snowden. Classic example. Some people look at him and say he's a traitor sociopath look what he's doing, releasing government secrets, but if you look at what's the motivation behind his behavior, what's driving him to do that? It's his inability to see injustice and not be able to do anything about it. He's willing to sacrifice possibly his own life, his own well being, he scrapped his career, he's in hiding. Why? Because it's for the greater good and that's the difference. They

exhibit a lot of the same behaviors, but the drives are different. External preservation versus internal for the sociopath.

DAVE: When will I be able to read some of your work on this? When will our listeners be able to because this is going to be fascinating and very topical.

ANDREA: Well I have written an introduction to this topic for Scientific American, it's on their guest blog from last year so you can find that by looking it up. You can just Google it, it's Walking the Line Between Good and Evil, but that is actually a book that I'm planning right now and I'm laying out the framework for that, so that is going to be for the next year of my life, that's going to be my major topic that I'm highly interested in talking about. So you will be hearing much more of that in the future.

DAVE: Well when your book is ready to come out, I'd love to have you back on the show to talk more specifically about that stuff. But on this show, let's switch gears and talk about some more things about intelligence and mental performance because I know you've got a lot to offer there and all the Bulletproof listeners are super super into that.

Alright, first thing. In 2009 the study suggested that after short interactions with women, men have lower mental performance. Any thoughts on that? Because I'm feeling kind of dumb right now.

ANDREA: You know it's not surprising because mental performance, partially, it's about attention allocation. Concentration. Motivation. So when you have things that are competing for not only attention but competing for your motivation, yeah you're not gonna be performing as well. Another factor is any kind of emotional stimulation is going to interfere with your cognitive pathway. So when you have an influx of and it can be induced in many different ways so extreme physical exercise to the point where you can't even think straight anymore, you know. Running a marathon or I'm not just talking about a slow jog. I'm talking about hitting that point where you're hitting acute exercise...

DAVE: Like crossfit maybe?

ANDREA: Yeah!

DAVE: Okay.

ANDREA: And actually that brings up another topic about training. How do you train for that? How do you train to endure these kinds of things that would normally impede learning and then surpass that and still learn in spite of? And if you're able to do that, that's only gonna bring you to a higher ability.

So if you think about emotional trauma, you know, you have a fight with your spouse and then you have to sit down and take a physics exam. How well are you gonna do on that? Probably not as good as you would have otherwise because what happens is that emotional stimulation, it literally blocks off the cognitive pathway and you aren't able to use your prefrontal cortex like you would normally. So when you think about males in front of females, what's happening? Oh, emotional reaction. And that's going to diminish that capacity somewhat.

DAVE: So I use heart rate variability training with my executive performance coaching clients and just with myself in order to sort of teach myself to turn off the fight or flight response.

ANDREA: Yeah.

DAVE: Now the response though that guys get around women, well sometimes it's fight or flight, I suppose you're not used to dating. But lets assume that you're comfortable around women and you still experience that. Is that sort of different

than an emotional fight or flight? Or is this like I'm happy to be around people or are we primarily dealing with the sympathetic nervous system here?

ANDREA: I don't think that would be the fight or flight then. That's more of attention allocation. You just can't stop yourself from focusing so much on that.

DAVE: You have to stop looking at those. It is too much work.

ANDREA: Yeah. Multitasking. So if you're trying to multitask, you're not going to be performing as well. So while doing research, I try to eliminate as many external stimuli as I can. You know, visual. I try to be somewhere by myself. Auditory, block off as many... I try to reduce everything down to the lowest common denominator. I don't have as many things competing for my attention.

DAVE: I love that you're talking about the tricks that you use. What are the other things you do to hack your own brain to increase your own intelligence?

ANDREA: Well, there's five things. The article that I wrote was basically the five principles of increasing intelligence and they're just things like eat better food and get more sleep, these are actually ways that I approach life. And I actually do practice what I preach. And so all of these five things are things that I do on a regular basis and I've been doing them for a very long time, and when I would teach my clients with Aspergers how to improve their performance, I use the same principles for them, so it really is a way of looking at life.

So the first one is seeking novelty which is you know, I'm in the field of psychology generally cognitive neuroscience but I'm constantly reading about philosophy and physics and many many other fields both in how they relate to mine and how they don't relate to mine. You know. Because there's expanding your horizons and looking at fields that are very different from your own, it helps with just in general increasing the number of synapses in your brain. Think about that. And the more

connections you have, the more they build on each other and you're just going to increase your performance generally. So seeking novelty is a big one. And incidentally of the big five personality traits, that is one of the only areas that actually correlates with intelligence is you know, that novelty seeking, that openness to experience is one of the only traits that actually does correlate with higher intelligence, for a good reason!

Okay so...and the second one is challenging myself. So, once I learn how to do something, once I master a skill, once I get to the point where I'm fluent at it, I will immediately move on to the next challenging activity. So when people do these...I'm pretty tough on brain training games, you know, I'm pretty hard on them.

DAVE: You should be.

ANDREA: I pretty much say the only thing brain training games will make you better at... is brain training games. If you do the same one over and over because once you know how to do something... it's no longer challenging. Our brains are not built for being smarter. They're built for efficiency and survival.

DAVE: And for avoiding pain, right?

ANDREA: Yeah. So how do you do that? Your brain has learned to adapt to the environment so that it wants to survive. It's not gonna be expending energy if it doesn't have to. So it gets like, lazy. And it looks for ways to be efficient. And it finds efficiency very quickly and so once you're aware of this, it's kind of like you're hacking your own efficiency in a way that you want to prevent that efficiency from happening. As soon as you get to the point where you notice you're getting fluent, you need to bump it right back up again and start challenging yourself again.

DAVE: Okay, so this is gonna sound masochistic but it's not. It's a legitimate scientific question. Should I wire my brain training game up to an electric shocking dog collar so that instead of being "oh look i got a higher score" that I'm actually

avoiding pain because the brain's wiring to avoid pain is larger than the little dopamine spike you get from that extra star on the brain training game?

ANDREA: Well then you're kind of messing around with classical conditioning on a step too. We don't wanna start associating learning with discomfort and pain.

DAVE: It's a fair point.

ANDREA: Yeah. But as far as the discomfort, you bring up a good point though, is that learning is not easy. It shouldn't be easy.

DAVE: Yeah.

ANDREA: It can be fun and it should be rewarding, but it should not be easy. It's really difficult. So these are people that are like give me the couple things I need to do! Wouldn't it be easier to take nootropics rather than actually reading books and learning things? And I'm like, well it would probably be easier but I don't think you're actually gonna get smarter just by doing that.

DAVE: It's an either or though.

ANDREA: No and I'm not knocking nootropics but there's a way that they can be used to enhance and but popping a pill is not gonna make you suddenly know physics if you've never studied it. It doesn't work that way.

DAVE: Provigil followed by the view probably isn't going to change your life in a major way.

ANDREA: Exactly.

DAVE: Very fair point.

ANDREA: Yeah.

DAVE: Okay, so do you take any smart drugs or cognitive enhancers?

ANDREA: To be totally honest and I've actually come up with this before, so it's not a big huge deal, but I do have ADD, and I do take adderall for that, but I have not taken any of the other nootropics but for me, people are like "Oh you're taking smart drugs, that's why you're so smart" it's like "Well no, it's actually more about managing dopamine and things like that."

DAVE: Oh yeah.

ANDREA: And it's a specific neurochemistry. I try to explain ADD to people, now I'm not hyperactive, so for me it's just attention allocation. So I'm living on a hallway with 100 doors and at any given point in time in a normal person, there's 35 doors that are opening and closing and you're having to navigate your attention between all this information, and for me it's like having 85 doors open all the time so there's stuff coming in from every direction and I'm having to fight between do I choose this or this or this because there's such a flood of information. And so when I think about hacking my own mental health, I understand that this is what's going on. My goal is not to reduce the number of doors that are open, my goal is to be able to effectively manage all of that information. So by managing my dopamine levels and norepinephrine and things like that, I'm actually able to benefit from having ADD because the information's there, I just need to find a way to organize it make it work for me.

So one of the things when I talk about hacking your own mental health, when I see clients with Aspergers or with ADHD or any kind of what we would call a disability,

like a mental disability, the goal should not be making them more normal, it should not be toning down their traits. The goal should be managing the higher traits that they have, to the point where it's effective. Now obviously you might have to dial it down a little bit, but the goal should be keeping the traits as saturated and as high as possible while still being able to control it. So really the control is the big factor. Not dialing it down to more subdued.

DAVE: It's interesting you say that. In my work with performance coaching, one of the areas of concern I have is around neurofeedback and I've done a ton of neurofeedback and I think it's one of the things that gave me the ability to maintain my own ADD skills and not have to deal with all of the things I used to deal with on a regular basis cognitively. The ability to focus my attention as much or as little as I want but still be able to absorb way more information than the average person. I've been concerned that neurofeedback has the potential to take A students and make them into C students. It also makes F students and makes them into C students. It also creates an average brain if you do it the wrong way. If you train your brain to look like an average of 1000 brains, it may not be the direction we want to go. Do you have any thoughts on the risks or rewards of that sort of brain training?

ANDREA: I'm not as familiar with probably the kind that you're talking about, but I do believe that the way our education system is set up is so that they do want everyone to train into that middle category. You know, the outliers are not really encouraged or nurtured. They're kind of put into "here's the bell curve and here's the center and this is where most people tend to thrive and so since we are...we need our school system to be efficient, we need standardized tests. In order to standardize things you have to be able to throw a lot of information out there and be able to score quickly and get in norms and all this other stuff, so what ends up happening is... the people that are in the tails of the distribution kind of get left out of that. They try to squeeze everyone into that middle and the really exceptional people are not getting the kind of environment that they should. So that sort of relates to what you're saying.

DAVE: Okay. So what other technologies do you use then? You're not using neurofeedback, you take Adderall, I'm surprised that you haven't tried Provigil because it has a dopamine effect. Adderall made me tweak by the way.

ANDREA: I've never heard that.

DAVE: Adderall I was like, "don't touch my skin!" So that didn't make me so happy, but yeah, it might be...

ANDREA: That's the thing with Adderall, everyone thinks that if you take it you're gonna be smarter, but it doesn't work that way for everybody. If you have any kind of anxiety disorder or any kind of sensitivity to stimulants, it's really not gonna work for you. You're gonna get paranoid and anxious and it's not gonna have the effect that you want. For me, it's like I've never gotten the jitters from caffeine ever, no matter how much I drink, no matter how much coffee I ever had, I don't get that buzz from coffee like some people do. I feel more alert, definitely, but that's just my neurochemistry. So Adderall works for me. It doesn't give me that central nervous system problems like some people get.

DAVE: Now you take it with [Bulletproof Coffee](#), right?

ANDREA: I have taken [Bulletproof Coffee](#). Yes.

DAVE: And Adderall at the same time and you're still good to go with that.

ANDREA: Yeah.

DAVE: Wow, you're hardcore.

ANDREA: Yeah. And I'm generally, you know what? People, they characterize me as intense, but I'm very mellow as far as my temperament. I'm not one of those hyper

bouncing off the walls kinds of people so yeah. It doesn't make me get that high feeling like maybe other people would with sensitivities to that.

DAVE: Cool. Yeah you don't come across, and watching on video people can see this on YouTube but most people listen to this when they're driving, right?

ANDREA: Yeah.

DAVE: You don't come across as super hyper. The dark makeup...just kidding you don't have vampire makeup on.

ANDREA: No, the people that are always so hyper, I'm always like oh my god it just looks so exhausting to be in that intense all the time. Although you know, to each his own, right?

DAVE: So for your neurochemistry, even though you're on basically legal meth, it doesn't affect you in that way because we're all different.

ANDREA: Right.

DAVE: Which is kind of an important thing. When it comes to things like nootropics, what do you think about...what age should people be looking at these things? Like, is it ethical to use nootropics when you're 12 if you don't have a condition like ADD or Aspergers? Or 8 or 16? Like, what's the age?

ANDREA: Well, the problem that's going on with your brain like that is it isn't fully formed until you're in your twenties. I think what I've last heard was like, 25 is when your prefrontal cortex is finally starting to become fully developed, so when you think about these heavy duty meds that are really messing around with those levels, and some of the changes could be permanent, you know.

DAVE: Yeah.

ANDREA: We don't know yet. They haven't been around long enough to really know. As far as ADD meds, I'm absolutely on board with children being prescribed them. I've worked with kids when they were not on them and then worked with them once they started medication and let me tell you it was like night and day. The parents were crying, they couldn't believe what a difference it made in this child's ability to actually learn information and take in information rather than you know, too much going on for them to handle. So for them it worked. And not every child that's diagnosed with ADD has ADD. Hyperactivity is not the defining feature. Everyone thinks hyperactivity is a defining feature and it is not. It's attention allocation. Some people also have hyperactivity as an additional trait. It's their way of like, it's like an effect of having ADD. It's one of the side effects for them is the hyperactivity. But not everyone gets that. So when you see kids that are hyperactive, sometimes they're just hyperactive. Sometimes they're just ill behaved or they don't care or they've learned that behavior. Whatever. So not every child that's hyperactive is gonna do well on ADD medication. So that is an important thing to remember. So I am pro drugs for that, for kids. But not everyone that's being diagnosed with it I think has the disorder and that's actually doing a disservice to those kids who actually do have it and need it because they end up getting that stigma of you're just drugging your kid and you can't get them to sit still, or getting them to have higher grades, so as far as that, that's my opinion on that. As far as the other nootropics like...Honestly I wouldn't be prescribing them to children before their late teens at the very earliest. Early 20s. I couldn't even imagine seeing a child on the anti-narcolepsy drugs. I just...I have no idea what that would do to them, but it can't be good.

DAVE: I worry about that because I'm probably the biggest cheerleader for Provigil there is for people who aren't on the spectrum or you know, dealing with the specific cognitive dysfunction. And I get the question a lot on my forums. I'm like guys you're PFC, your prefrontal cortex, isn't formed until at least 23. The earliest you should even think about it is that age. So if you're in high school, there are lots of high school students who illegally and unwisely borrow ADD from their friends and that has one set of effects but at least we kind of know that. But some of these other

things, just don't mess around with it. Let it grow the right way and then start messing around with it. That's a message that anyone who's listening to this who's in this age group really should listen to. Be patient.

ANDREA: Wait until your twenties! Wait until your twenties really because we don't know what it's going to be doing to you, but we do know the prefrontal cortex is not fully formed and not fully matured until your twenties. So, it's like, there's reasons why certain medications you can't give to children under 3 or children under 12. There's reasons why they have those warnings. Because in those cases we know that those chemicals are gonna be interfering with brain development under a certain age because we know that through chemical trials. These other things are still so new that we haven't gotten to that point yet, but we do know that they have an effect on the prefrontal cortex and we know it's not fully formed yet, so why mess with that at this point when...do you need the anti-narcolepsy as a high school student? No, you don't need it. That's for increased performance and that's where you want to buck up. Learning is difficult. Put forth the effort. Don't mess with your brain at that point.

DAVE: It's funny that people are willing to pump iron. They're willing to deal with physical pain. But stimulating the brain to change is just as painful to the brain as it is to lift something to your tolerance with your muscles.

ANDREA: Oh absolutely.

DAVE: So, and like you said, you adapt pretty quickly with the brain. Is there something that people should do whether they're adults or teenagers in order to grow their IQ? Like a very specific either training methods or nutritional things? Like, what are the things we can do if we don't want to go down the smart drug path?

ANDREA: Well I mean, one of the simplest things you can do is constantly pushing yourself beyond what you think is possible. So beyond your comfort zone. You know, people think that the goal is for things to be easy and that's actually the

opposite is true. The goal is for things to be difficult. Not so hard that it's impossible, but just hard enough that you don't think you can accomplish it but you can. So you wanna put your goals just past the point that you think you can achieve it, and when you do that, it triggers dopamine, you're more motivated, it has this positive feedback loop and then you're constantly growing your cognitive ability. So, it's not pleasant. It's actually painful, so what I like to tell people is that you know, you should learn to fetishize the pain of struggling through learning something new and that really is the sweet spot. When it's difficult and you're struggling and you're in this mild discomfort all the time, then you know you're really onto something and you're in the sweet spot. So you've gotta come to recognize the pain of learning and liking it and accepting that.

DAVE: Here's a statistic that might interest you. I tend to coach people who are kind of at the top of their career. CEOs and hedgefund traders. And people...entrepreneurs...people who are wanting more focus and more attention and I recommend Dual N-Back training which is a free, open source kind of software and I know you've written about it and you've talked about it before, the one that's proven most to stimulate your brain. Most of them don't finish it and I tell them 20 minutes a day for 20 days. Anyone could do this. Your kids in high school could do it. In my own experience with that thing, I felt like such a failure because it was so hard! But I couldn't remember this thing from just 2 points back and really, it's such a simple thing but because your brain isn't wired to do two things at once like that, I find that even amongst kind of these...I guess they would object to being called elite people, people who are seen as being elite thought leaders, ultra successful people, they don't wanna do it either because of that brain pain where it's internalized thought is like sweat but it's internalized as I suck.

ANDREA: Yeah.

DAVE: Have you ever been on the I suck, I'm a failure, I'm no good when I push my brain? How do people navigate that?

ANDREA: Well that's sort of the one factor that everyone forgets about is motivation. And that thing about the Dual N-Back test, you know the very first study

that came out that actually showed a transfer of training a working memory test in the Dual N-Back and actually transferring that to gain intelligence in a generalized intelligence test that came out in 2008 and they tried to replicate that, so other people are training them in the Dual N-Back and trying to get that transfer of the increase in intelligence and some people were successful and some weren't and they're like "oh look, not everyone can replicate it so therefore it's not working there" so when I looked at it, and I found that the people that were able to replicate those results were people who did the Dual N-Back training, but it was framed in a video game or it was framed in an activity that was a Dual N-Back and it would still train those working memory tests but it was done in a way that was motivating for the people taking it. And they found that those who rated it as more motivating to engage in, so after they finished these tests and they interviewed them and they said "How'd you feel about it? Was it hard? Was it difficult?" So people that rated it both as difficult and enjoyable had the highest increase in their cognitive ability at the end of that. So it has to not only be difficult, but you should be enjoying it. So that's where I say you need to fetishize that pain. That's where the seeking novelty comes in. That's where doing new activities because novelty, we like novelty, that's always fun anyway because it's something new. We're bored with it. Who wants to sit down and say if you do 12 pages of long division every single night you'll be able to raise your IQ by 2 points and someone will say totally easy I'll just do that every night. You're not gonna do that for more than a couple nights because who the hell wants to? I wouldn't want to.

DAVE: Right.

ANDREA: But if they say do these series of games and it'll be something different and it's fun, you're more likely to do that. But if it's framed in terms of daily activities. So all these things that I do to make myself smarter, it's not just that I sit down to play a game, I sit down to do a task, what is the Dual N-Back doing? You have stimuli that are competing for attention, you're having to hold things in working memory, well looking for new stimuli, weeding out the things that are signals from noise and all this stuff. So that's what it's actually doing fundamentally. So how do you take that concept and apply it to everyday activities, you know? So I say when I want to concentrate I reduce all the stimuli down to me and my computer or what I'm thinking, but what if my goal now is to you know, train my brain a little bit. Maybe I'll introduce...maybe I'll work in a coffee shop and force

myself to do the same kind of work with stimuli around me that's competing for my attention. That kind of thing. So I am still kind of doing the same kind of activity, but in a different environment and it's a natural environment and so if you push yourself to engage in activities that mimic the same kinds of effects that you get from the Dual N-Back, you're more likely to follow through on that.

DAVE: There's something to be said for novelty and there's also kind of changes in the brain structure that can happen. You mentioned I think on Google plus a while back, something about the physical evidence of structural brain differences from people who wake up early versus people who stay up late. So, alright, we're talking about pushing the brain and training the brain into doing uncomfortable things.

ANDREA: Yeah.

DAVE: I'm a night owl. I study computer science, which means I literally would stay up until 3 or 4am if I let myself and be quite happy that way.

ANDREA: I've been in that. Yeah.

DAVE: I just sleep in for a long time. I have kids so that's not how I roll, I just sleep less. But, okay, number one. Do you wake up early or do you stay up late?

ANDREA: Oh, I'm a night owl.

DAVE: Well you have ADD I would've bet that.

ANDREA: Yeah. And my boyfriend's a programmer so this household, it's like going to bed at 4, waking up at 11, that kind of thing. And you know, it just works best for me. That's just how I work best. But you know, for a time I did have a job where I did have to get up at 5 o'clock every morning and I had to be at work from 9 to 5 and

then you know, I had to force myself to be on during those hours, and that was really difficult. I was not performing optimally.

DAVE: Was it good for your brain to learn to do that or was it just painful?

ANDREA: In that case I think it was painful. It was akin to shock. So the goal is to kind of like, do it so that it's not impossible. And then you struggle, struggle but can never get there.

DAVE: Yeah.

ANDREA: You wanna put the life raft just past your fingertips and then okay then you get it and then you push it back a little more and then you get it, so completely, like I went from going to bed at 4am to waking up at 5am and that was just really difficult and I don't think I benefited from that. If I had extended it an hour each night over a period of two weeks...

DAVE: Yeah.

ANDREA: That probably would have been better.

DAVE: That's a little more natural, like treating jet lag basically.

ANDREA: Yeah, yeah. Exactly.

DAVE: I went and I taught myself to wake up at 5 or 5:30 every morning for about two years I'd wake up and I'd meditate for an hour because I figured out an hour of meditation replaced two hours of sleep. So as long as I was getting a certain window of sleep, I was able to save time that way, but it still took discipline and that's not my

preferred wake up time today and the idea that I could teach my brain to do that and still be on during the day was kind of amazing. So I was wondering if you had come across research or in your own life had played around with brain plasticity and wake up time.

ANDREA: I haven't seen anything on that specifically, but the way I look at it, you gotta choose your battles here.

DAVE: Oh yeah.

ANDREA: There are plenty of areas in my life where I can challenge myself and push myself. Sleeping is one of those things that I don't wanna mess around with. I really love sleeping. I used to fantasize about napping when I was in college. But I also get insomnia so it's kind of a catch 22 there. So with my sleeping I don't like to mess around with it too much.

DAVE: How much do you sleep?

ANDREA: Usually around 6 or 7 hours a night normally.

DAVE: Okay.

ANDREA: I always want to get more sleep but sometimes it's not possible.

DAVE: It's not possible because you just wake up or it's not possible because you have stuff to do?

ANDREA: Both. Usually I have a hard time falling asleep, so often times I'll be lying there awake and I'm like oh I'll do some work while I'm awake and the stimulates

my brain even more and then I can't fall asleep because I'm thinking about all the stuff I'm working on and it just perpetuates this negative feedback loop and so I struggle with falling asleep and then I end up automatically waking up a certain time everyday. So how much sleep I get depends on how successful I am at actually falling asleep.

DAVE: Got it. So it's a going to sleep thing. It's funny how much of an impact. I've found that in my own life, there was multiple sleep things that I managed to overcome with training, breathing, or amino acids and neurotransmitter modulation and things like that. And when I deal with like, super high performance people, same thing. Either they have a hard time going to sleep because they're so focused on the stuff they're doing and they like it or they're worried about it and they keep running in their mind, or they wake up in the middle of the night thinking about stuff and they can't go back to sleep, so it's always either trouble going to sleep or I wake up and I'm laying in bed for hours and hours and I think each of them has different behavioral roots and the way they learn to do that and the ways they're doing it and sometimes different biochemical roots that can be as varied as food versus stress levels and things.

ANDREA: Yeah.

DAVE: Let's talk about food for a minute. Food and sleep and what it does or doesn't do for growing IQ. Like, how important is food for your brain and what are the recommendations that you think are most important for keeping brains strong?

ANDREA: Food is important, and I'm not a nutritionist so I can't give too much specific information, but I was at one point, back in the early 2000s competitive weight training was my thing, so I was on a diet where I was eating very lean protein, complex carbohydrates, a certain amount of fats and I was very, very militant about my eating. 6 small meals a day, no processed sugar, all this stuff, and I had the easiest time sleeping and waking up. It was like I never slept better in my whole life as when I was and I was physically exhausting myself in the gym too and I still just had the most restful sleep. I could wake up at 5, I was learning better, but what I found is that if I'm eating a lot of sugar or if I'm not paying attention to how

much protein I'm eating, or if my diet gets off track, I will start to feel sluggish and I can't concentrate. It ruins my concentration. It ruins my ability to learn new things. And so I remember because I'm aware of this now, if I have to pull an all nighter or I know that I have some really important stuff going on that I need to really focus on, I will make sure that one of my top priorities is my diet. Making sure that I'm eating regular meals, cutting out the sugar, cutting out the things you know, no white bread or flour or anything like that, and I do this because I know that's going to help my brain function at the optimal level and when I do pay attention, it does make a difference.

DAVE: Are you gluten free?

ANDREA: I am not. No.

DAVE: So you have ADD and you know food affects you. Have you gone hardcore gluten free to see what would happen?

ANDREA: You know, I haven't because you know... I've read some evidence about how it helps... some of my clients years ago were on gluten free diets and I remember I would track their behavior and I collected data on their ability to learn on gluten free and not gluten free and for me I didn't really see an effect with them, so I guess my experience with watching that it didn't really have a significant effect so I never really felt compelled to try it myself. So who knows.

DAVE: Got it. Do you subscribe to the Gluteomorphin sort of dietary breakdown where gluten turns into an opiate like substance in the gut that can effect the brain? Have you come across that?

ANDREA: I have come across that. I guess my experience isn't enough that I can really comment on that fully.

DAVE: I know you're not a nutritionist either, so I don't really wanna go outside your...

ANDREA: The biggest thing for me was really cutting out sugar. It's had the biggest benefit that I've noticed.

DAVE: Is that do you think because of cortisol? Sugar raises cortisol and makes the stress hormone?

ANDREA: Yeah I'm sure that has to do with that.

DAVE: Okay.

ANDREA: And I'm also very sensitive to blood sugar crashes too. So I notice that if I keep my blood sugar as steady as possible, then I'm able to function at my best too. So if my blood sugar gets too low, I get really grumpy.

DAVE: Yeah.

ANDREA: I wanna kill somebody. So I try to maintain the even blood sugar levels at all times so, any kind of really high sugar content foods kind of ruins that for me.

DAVE: What about intermittent fasting? Either [Bulletproof Intermittent Fasting](#) or not? Have you played around with that? Does it work? And do you have any thoughts on that in mental productivity?

ANDREA: Yeah, you know I've heard a lot of people doing that, the fasting. I've tried it myself and I've found that I cannot function by fasting, just me personally. And I'm sure that has more to do with just my own neurochemistry than whether or not

fasting works for other people. I have friends that do it on a regular basis and it seems to work for them. I wish it would work for me but I find that for my peak performance I need to keep a steady intake of food at some level. The absolute fasting is difficult. It's hard for me to concentrate.

DAVE: I've found with my client base who are not necessarily normal people, that a few of them do normal like [Bulletproof Intermittent Fasting](#), but even then people are in good shape and all, they start to crash a little bit around lunch time and they get a little cold and distracted and cranky. And they still have a few hours before they're going to eat. So when they switch to eating only fat in the morning, like you do with the Bulletproof Intermittent fast, they maintain the energy level because the calories are still there but the body doesn't turn on any of the sugar metabolism or protein metabolism types of things.

ANDREA: Right, because the fat takes longer to metabolize so it stays in their longer.

DAVE: Yeah so for me, I can do...now that I'm where I am metabolically, I can handle a full on fast. But I'm still more comfortable and just more focused if I have an ounce or two or more of fat in the morning and I still seem to get the benefits of the fast. How about things like [Alpha Brain](#)? Things that raises acetylcholine. Have you played around with those at all?

ANDREA: No, I have not.

DAVE: Okay cool.

ANDREA: Yeah.

DAVE: So I don't wanna get you on a long list of smart drugs to ask you about.

ANDREA: Yeah as far as like, smart drugs, I just wanna emphasize the point because so many people ask me about nootropics. So many people because my area in grad school my focus was intelligence. And the fact that you could increase it. So when people ask me about taking nootropics, “Do they work, can they just...these principles that you're giving me to get smarter, they're really difficult and they take time. Can't I just take smart drugs instead? Wouldn't it be easier?”

And I say it will be easier, but you're probably not gonna benefit. So when you look at what they actually do, it's like these drugs, they prime your brain for learning. They prime your brain in order to make connections. Make those synapses and actually grow your cognitive ability. It doesn't do it for you. It gets you all primed and ready for it, like having all the best gear you know, and having all the best equipment, you know getting a good nights sleep, all these things, you have everything working for you and then you set out to learn new things. And really that's the function of the nootropics. It's getting your brain in the optimal state for learning.

So you can't pop the pill and then expect to know particle physics if you've never studied it. It will make you better able to learn that subject once you put forth the really difficult effort to learn that material, but it's not gonna magically do it for you. It's not magic, it's science.

DAVE: It's funny to me that we as a society believe it's okay to take creatine and glutamine before you go lift heavy things in order to increase your training efficiency...

ANDREA: Yeah.

DAVE: But not when you do the same thing before you sit in a classroom.

ANDREA: That's when I think it's okay. I'm not anti-nootropics, but you can't expect it to do all the work for you.

DAVE: Yeah.

ANDREA: Like taking a weight loss drug. I just take a pill and the pounds are gonna melt off me. Well not really, what it's gonna do is it's gonna make your curium more efficient maybe or your workout more intense you know, but you actually have to work your muscles. You can't just sit there and expect your muscles to magically grow, but they will grow better if you do take creatine. You know, so people need to kind of like, reframe how they're thinking about nootropics. It's not in exchange, it's not instead of, it's in addition to.

DAVE: That is so well said. And you've inspired me to write something about that on the blog.

ANDREA: Well good!

DAVE: I'll link it back to you when I do that because it's such an important point. And people say "Oh you're cheating or you're doping and I'm like okay fine, I'm cheating or I'm doping, of course I told you what I was doing and it's not against the rules so I'm doing it."

ANDREA: Right.

DAVE: But if I'm doping and I don't go into the race, who cares? You didn't achieve that goal. So you've definitely inspired me to share that message in writing. Now there's a question, Andrea, that I've asked every guest on the show towards the end of the show because we're running up on our 45 minute limit. And it's based on your entire life. Not just the work you're doing or the research you've done. What are the top 3 recommendations you have for people to help them perform better? Basically

to kick more ass? Don't stick just to your research, it could be have good parents, whatever it is.

ANDREA: Oh, in life?

DAVE: Yeah. Share some wisdom with us.

ANDREA: Okay. One major thing is don't listen to the naysayers. One of my very good friends, Scott Barry Kaufman just wrote a book called *Ungifted: Intelligence Redefined* and it's basically saying, you know, people are always telling you you have what you're given with. You have your genetics. You have your family socioeconomic status. Whatever you're given and that's what you have to work with and that's pretty much determining where you're gonna go in life. And so what ends up happening is people get this attitude where well, I came from a poor family or I was labeled as special needs and I was told this and that and this is where I'm at right now, and so they give up on setting these high goals for themselves and they believe that they can't achieve these things that they seem to believe are impossible and I say you can achieve almost anything that you set out to do.

I'm not saying that it's 100% because I will never be the next Michael Jordan and I know that, but I can certainly become a hell of a lot better at sports if I set goals for myself when I put it out there. So really, not setting limits on yourself. So really, not seeing yourself as you know, dealing with whatever you've been dealt with in life. Think of it as what is your potential? What could you do? What is possible? Daring to dream that impossible dream and it sounds so cheesy, but really, if you don't ever set high goals for yourself, things that seem impossible, you will never ever reach them. So that's the biggest thing is really kind of setting high goals and not giving into limitations. That's the first one.

Another thing...oh boy. Constantly pushing yourself with learning, and not just sticking within your field. Seeking novelty is such a big thing. So I'm a novelty junkie, you know. It's impossible for me to have one full time job where I'm only doing one thing. I've tried it multiple times. I can't do it. I have to always be doing multiple

things and that's what makes me happy. But through doing that, I feel I have such a richer life because I'm reaching out and expanding my horizons in so many different fields. So being multi-disciplinary is going to become a bigger and bigger trend in the years to come. So constantly thinking in that direction rather than narrowing such a small area or study, I think always thinking multidisciplinary is a good thing. So did you want another one?

DAVE: That was two things. So we've got one more in there. One of the 85 doors that's open, just pick that one.

ANDREA: Okay. You know what? Considering my research on heroism and ex-altruism and sociopathy, I guess having the courage to stand up and do something. Even if you're the only one doing it. So it's really difficult to stand up for what you think is right. It's difficult to be the only person when everyone else is kind of telling you that you're wrong. But if you believe in yourself and you believe in what your cause is, having the courage to stand up for that. Because if you are right, in time, people will eventually come over to your side, but that intermittent time between when you first step out and everyone else starts getting on board with your idea, it's a very difficult time period. And a lot of people, they kind of fail during that because it's hard. So just having the courage to stick it out and have faith that if you're on the right path, other people will join you eventually. So, being courageous.

DAVE: What an awesome list. I appreciate you coming up with those. And I've seen a lot of people squirm trying to think of those on the spot, but that's one of the reasons that people come up with creative amazing answers. I'm always amazed at how few repeat answers come through, even after we're nearing 70 or so podcasts.

ANDREA: Wow.

DAVE: Just that people, they've walked their own path, so thank you for sharing that. You know, I really like those answers. Now, there's another question for you. Where can people find out more about your work? Where can they sign up to get notice of your new book and things like that? Where should they go to find you?

ANDREA: Okay, well my personal website is in a state of construction, right now. But if you go to my [Google+](#) profile, so if you just look for me and if you could link that up in one of the places...

DAVE: It'll be in the show notes and when we release it, we'll put links to everything you mention here.

ANDREA: Okay. Yeah, so if you go to my [Google+ profile](#), you can find links there to my blog, to all the work I've written. There's links to everything on there and I will be linking up my new blog to that profile. So looking for me on Google will help you find everything that you need.

DAVE: Alright! Andrea Kuszewski, thank you so much for taking time to talk about such a wide, diverse number of topics. I had a great time with you today.

ANDREA: Oh, you're very welcome. I had a great time too. Thank you so much for having me.

Featured

[Andrea on Google Plus](#)

[Andrea on Science 2.0](#)

[@AndreaKuszewski](#)

Resources



[Walking the Line Between Good and Evil: The Common Thread of Heroes and Villains](#)

[Dual N-Back FAQ](#)

[Why Interacting with a Woman Can Leave Men “Cognitively Impaired”
Ungifted: Intelligence Redefine](#)

Bulletproof

[Bulletproof® Coffee](#)

[Alpha BRAIN™](#)