Shrink Rap Radio #387, January 23, 2014, How Technology is Changing Our Minds for the Better

David Van Nuys, Ph.D., aka "Dr. Dave" interviews Clive Thompson

(transcribed from www.ShrinkRapRadio.com by Paula Bautista)

Introduction: On today's show, I'll be speaking with noted journalist Clive Thompson about his new book, Smarter Than You Think: How Technology is Changing Our Minds for the Better. Clive Thompson is a longtime contributing writer for the New York Times Magazine and a columnist for Wired.

As a child growing up in Toronto of the 1970s and 80s, Clive Thompson became fascinated with the first "home computers" – the ones you plugged into your TV, like the Commodore 64, and programmed using BASIC. He was hooked, spending hours writing video games, music programs, and simple forms of artificial intelligence. The obsession stuck with him even as he went to the University of Toronto in the 1990s. The internet erupted into the mainstream and he began reporting on how digital tools – everything from email to digital photography to instant messaging – were changing society.

Clive started out pessimistic about the impact of the Internet on life. He worried, like many social critics before him, that society and civility would fall off a cliff. But over the next twenty years he realized that when everyday people were given remarkable powers of self-expression on a global scale, amazing things happened more often than not: Wikipedia, Youtube, "response" conversations, collaborative art, crazy new forms of writing like TV recaps, collaborative problem-solving, and the ESP-like awareness that comes from the status-update universe.

Today, Thompson is one of the most prominent technology writers, respected for doing deeply reported, long-form magazine stories that get beyond the headlines and harness the insights of science, literature, history, and philosophy. He specializes in writing not merely on the inventors of technologies, but about how everyday people use them – often quite unpredictably. In addition to The New York Times Magazine and Wired, he writes for Mother Jones and Smithsonian. He's one of the longest-running bloggers, having launched his science-and-tech blog Collision Detection since 2002. In his spare time he's also a musician, performing in The Delorean

Sisters and writing original music as part of the duo Cove. He is married and lives in Brooklyn with his two children. Now, here's the interview.

Dr. Dave: Clive Thompson, welcome to Shrink Rap Radio.

Clive Thompson: Glad to be here.

Dr. Dave: Well, I'm thrilled to have you on the show. I'm a long-time technophile myself, having bought my first personal computer in the early 80s, before the birth of the World Wide Web, when the operating system of choice was CP/M (I was told that was the one I needed), and punched cards and Fortran ruled mainframe computers, and I think my first personal computer had all of a hundred and twenty-eight kilobytes of RAM, if I recall correctly. So, for me, that was the beginning of an obsessive love affair that has continued to this day, except in recent years I've become more aware that there's a dark underbelly to much of this. You don't deny the shadow sides of computing, but you're a bit of a contrarian, concluding that the good really outweighs the bad. Do I have that right?

Thompson: Yeah, absolutely. And it's funny – I've had a reverse journey on this to most people. A lot of people started off being really excited by technology and got more and more pessimistic as time went on. I went in the reverse direction. I'm a bit of a nerd from way back. I mean, I'm 45, so – I actually learned how to program Fortran on cards in high school, believe it or not.

Dr. Dave: Wow.

Thompson: For some reason, the Computer Science class still had a time-sharing agreement with the University of Toronto. And I guess they had an old PDP-10, one of those computers the size of a washing machine, and they had been teaching Fortran on punched cards, for, I guess, a decade. And probably the…you know, we already knew this was kind of obsolete; they already had the little Commodore 64s you could plug in to your TV and program in BASIC. But they would – this is the curriculum, so I actually learned Fortran on punched cards, and I got to say, it's kind of a blast to have done so, because now I run into programmers in their 70s and we have something fun to talk about. Anyway, the point is, I got interested in programming back when I was a kid, and I thought, "Well, this is a lot of fun." Even though I studied Political Science and English, I kept on doing computer stuff in my spare time. So when I graduated I wanted to become a journalist, and I knew that I really wanted or – this is the early 90s – I knew I wanted to write about technology and how it was going to affect society, because I could see all this sort of connectivity coming along.

Dr. Dave: Yeah, great decision. Great decision.

Thompson: Yeah, (laughs) it was the right call.

Dr. Dave: (laughs) Yeah.

Thompson: But I started off in the mid-90s really, really pessimistic about the effects that technology would have on society. I mean, I was, like many 25-year-old men, (laughs) I thought I had everything figured out, and I was pretty misanthropic. I thought the average person was pretty stupid, and it would be terrible if you let them online, talking…you know, they would sync all their stupid stuff and culture would just go down the toilet.

But over the next twenty years, I became a long-form magazine writer, and so I was always reporting on…something new would come along, whether it was instant messaging, or digital photography and people posting photos online with Flickr, or, you know, social networks, or blogging. I basically just hit the streets, and I would go out and I would talk to people who were doing stuff. And every single time I did all this shoe-leather reporting, I would discover that people were much more creative, and interesting, and playful, and funny with the way they used their new communications tools, more so than I ever could have imagined sitting there grimly at my desk, fretting about things. And so it was the act of doing all of this reporting that really turned me around and made me realize, "Wow," you know. People do unexpected and unexpectedly (I think) terrific things a lot of the time with technology. I mean, definitely some of the stuff that I worry about has come to pass, like in situations – and we can talk more about this, where you have newspapers and they set up discussion threads and they don't bother to, in any way, curate them. You know, you get the cranks, and you get terrible, terrible public conversations. So we definitely see a lot of the stuff that I think I predicted and people see now, but for me, the glass is definitely half-full. That's what I'd say.

Dr. Dave: Okay. And I'm pretty sure I've read your columns in Wired magazine for some years. Are you a pretty regular contributor there?

Thompson: Yeah, I'm a contributing editor for Wired, so I write a monthly column. Every month I try and find some new thing going on in how technology or science are affecting society and report about it. Same thing: I talk to people, find out what they're doing; I try and find some science that elucidates it, and try and bring something new every month. And in many respects that was a useful thinking scratch pad in the process of researching my book, because it allowed me to go far afield, look at a lot of different ways

technology is affecting everyday life, and report it out. So yeah, I write for them. The other half the time I write features for the New York Times Magazine, too.

Dr. Dave: Yeah. (laughs) Very prestigious, both of them. Now, early on in your book, you draw a line in the sand saying you're not going to get into the neuroscience of how the brain is impacted by the explosion of technology. Inasmuch as I'm on the advisory board of an online journal titled The Neuropsychotherapist, your declaration particularly caught my attention.

Thompson: (laughs)

Dr. Dave: So say a little bit about your decision to not go there. (laughs)

Thompson: Sure. Yeah. Well, it was born of the fact that a couple years ago, largely spurred on by Nicholas Carr's book, The Shallows, there was this wave of journalists and pundits – and even some neuroscientists – rushing out with judgments saying that because of the plasticity of the brain, technology was warping it and physiologically damaging it. And I thought this was interesting stuff, but the truth is I had been down the route of trying to do journalism that draws a line between neuroscience, neurofunction, and cultural behavior before. Back in 2003 (I guess?), I wrote a story for the New York Times Magazine about neuromarketing, and it was about how neuroscientists were trying to understand the ways in which brands and marketing affected the brain the better to tweak and improve marketing, right?

Dr. Dave: Yes.

Thompson: And so I got very excited about this, and I became convinced that wow, it's really possible to see the neurological correlates of these very sophisticated forms of thinking. And I think I went a little overboard, and afterwards a bunch of neuroscientists, very kindly, said, "You know, Clive" – (laughs) – "it's infinitely more complex than these very glib assessments by your fellow journalists, and by certain unfortunate neuroscientists, would make it out to be." And so I read much more deeply in neuroscience, and began realizing that yes, we're really at the beginnings of a fantastic period in, you know, several hundred years' exploration of neuroscience. Because we have these new imaging tools; we're developing new ones all the time. You've got everything like patch clamping, optical scanning, getting us down to the neuron level. So, we're really launching this amazing stuff, but our understanding of the very complex forms of thought, like memory processing, our understanding of language, our understanding of intuition and creativity – the more I read about it, the more I was convinced it's still so early-stage that it's a little rash to

go around talking about...first off, even talking about how it works, since we're still just teasing that apart. It's even harder to say, "Well, here is how some everyday behavior is going to affect it." So I essentially just…it's really funny, if you looked at my book proposal, when I wrote the proposal to the publisher, saying, "Here's what I'm going to do," I promised a big chapter (laughs) on neuroscience and the brain.

Dr. Dave: (laughs) Yes.

Thompson: Because back in 2010, I still thought I could figure this out. But I spent months and months researching that, and the deeper I got into it the more I thought, "Wow, I cannot, in good faith, as a science journalist, say that I or anyone has this figured out." I want to stick to stuff that I think were on safer territory, where, you know, we're looking at sort of observable habits and how they are affected, looking at the measurable social science. This is not to put down or put aside the neuroscientific understanding of this stuff. I mean, science works, right? The scientific method works very well; we know that. But I would feel more comfortable thirty or forty years from now tackling this subject than right now. So that's essentially where I came from. I developed a deep respect for the complexity of the field, and decided I didn't want to add any more hoopla to the area.

Dr. Dave: Yeah. Well, actually, I respect that decision, and I agree with something that I think you kind of said too. It's that, as exciting as these new imaging tools and so on are, they're still somewhat blunt tools when it comes to figuring out all the complexities of the human mind. And it just so happens that I'm also a market research consultant, and so I probably read that New York Times article that you mentioned that you wrote about neuromarketing. And it's in my latest trade magazine, actually, where people are still hyping that, and something that bothers me is that I belong to a professional association of focus group leaders, if you will, and nobody seems to raise an ethical red flag about this. This is not something I'd planned to go into with you, but…

Thompson: This is very interesting stuff, though. Keep going.

Dr. Dave: Yes. Well, I'm just wondering, what's your take? I'm ethically concerned – I feel like my peers will, it seems, stop at nothing using hypnosis or psychoanalytic thinking…

Thompson: (laughs)

Dr. Dave: …or whatever tools they can grab hold of, to promise the marketers, "Okay, here's the crowbar that you can use (laughs) to get the leverage that you need."

Thompson: (laughs)

Dr. Dave: Shouldn't there be a limit, though? I mean, even if the tool were good enough to perfectly manipulate consumers, shouldn't we be ethically concerned about that?

Thompson: Well, in the long run, I think yes. And in fact, there are some fascinating ethics groups looking at this. There's the Center for Cognitive Liberty. It's a fascinating group of scientists who are trying to think about not just in terms of reading mental states, but affecting them, whether that's stuff like magnetic stimulation, tools we've got that are going to be coming along – they're very interested in the question of what cognitive liberties mean. And I think it's because technology moves quickly, it is imperative for ethicists, and neuroethicists, and neuroscientists and, frankly, any laypeople who care about these things, to get ahead of the technology by talking already about what might happen, what the implications will be. So, I'm aptly with you there. I think in the short run (and I measure the short run by, say, ten years), probably most of the stuff that is being promised to marketers or to various persuaders is still probably false hopes at this point in time. I mean, a lot of these consultants are selling a lot more than they can promise at this point in time. So I'm less worried in the short run about people figuring out fantastic neurologically derived modes of manipulation. In a way, I'm almost more concerned about – when I looked into it – the potential for the business and government use, and misuse and misunderstanding, of brain scanning as a way to…almost as a new form of psychological testing, right? Like, "Is someone telling the truth? Well, let's stick their head in a tube and find out."

Dr. Dave: (laughs)

Thompson: You know, "What are someone's propensities to x, y, or z?" And you're seeing this already, very much, on the front lines of the legal system, where criminal defendants are trying to introduce evidence – and often successfully – about…almost the neurological damage that happens when kids are abused and they're young. And this stuff is all absolutely true. I quite agree with that, and they're doing their clients a justice by introducing this stuff. But the truth is you can already see, quite apart from marketing, the purported understanding of complex neural states happening over and over again. It's happening in the legal system; it's going to happen amongst companies and business. You know, most companies you apply for now, they ask you to

undergo this battery of psychological tests so they can claim to have some understanding of you.

Dr. Dave: Oh, yes.

Thompson: And those, of course, have been disputed and litigated, and as neurological scanning becomes cheaper and cheaper one can easily imagine that becoming something that gets abused on the corporate landscape, or even on the governmental landscape. So those are all areas where…I mean, in a way, with my book I wanted to have this slight bit of civil disobedience pushing back at the idea that this stuff is ready yet for even that, right?

Dr. Dave: Yes.

Thompson: I mean, I think it's really important for all writers of science, and all neuroscientists who communicate about it, to be clear about where we are in the early stages of this unbelievably exciting period in science, you know? And this is the thing. I talked my friend Gary Marcus (he's a neuroscientist at NYU), and he did this fantastic little bit of research looking at the way that birds acquire song, and its comparisons to how children acquire language. And this is where the really exciting stuff is happening. It's the way science always happens – these very small conscripted questions that we can actually study because they're small, and this is where genuine breakthroughs are happening in neurological probing, not in these very fuzzy, large things about, you know, "Are our brains being deformed in some very mass-cultural way?"

Dr. Dave: Yes.

Thompson: So I try as much as possible to point people to the really awesome science that is going on, that is narrowly focused and really cool and well-controlled.

Dr. Dave: And, yes, you really do that very well in your book. And I'm going to kind of step you through the various myths that you bust…(laughs) in contrarian fashion.

Thompson: Sure, sure.

Dr. Dave: And what I haven't done in the questions I've drawn up is to reference all the very specific examples and scientific studies, and so on. So feel free to throw in any specifics that come to mind.

Thompson: Sure. Absolutely.

Dr. Dave: So, you explode a number of myths about the impact of all this technology on our lives and on our brains. Let me step you through some of the main fears that people are expressing.

Thompson: Sure.

Dr. Dave: First is the idea that because of tools like texting and Twitter, most of us, especially school-age children and teens, are less literate and worse at writing than we were before these technologies existed. So, take us through that, if you will.

Thompson: Well, this panic here is very similar to previous panics, and the one thing I found in researching my book – I went deep back in history, like, back a couple thousand years to look at the ways in which new media, new forms of communication, were received. And it's a fairly consistent pattern. Pretty much every time we get a new tool for communication, we worry deeply about what's going to be lost, and we usually have a somewhat panicked apocalyptic reaction.

And this begins with Socrates, back in his day. That was the beginnings of writing culture. Socrates belonged to the old guard who were trained in memorizing huge amounts of text, and that was the classic Greek idea – that, if you were knowledgeable, the knowledge is all in your head. And so in the phaedrus (which is this really quite wonderful Socratic dialogue written by Plato), Socrates basically says, "The problem with writing is that if we write things down, we won't need to remember them. And if they're not inside our heads, how can they be considered to be knowledge, right?" And, of course, in one sense he was right. Once we started writing things down, we lost the regular practice of memorizing mass amounts of stuff. But he was unable to foresee that we would actually gain these new interesting abilities to externalize and ponder a huge amount of knowledge. So, you see that happened with writing; it happens when the book comes along. Massive panics about how this will affect and deform knowledge, because now there's too much to read, so we're going to be drowned by crap**.** And you see it with the telegraph, and radio, and TV.

Now, with texting and writing, this is really interesting. So, again, you got a panic that kids are going to lose something. They're going to lose their literacy. But the truth is when you look at the technologies of the last century, every time we've made it easier for people and kids to write, they tend to write a lot more, which also means they tend to get more practice out and get more fluency. When Andrea Lunsford, this wonderful scholar of rhetoric at Stanford

University – she wondered this question. "Okay, so, did kids make more grammatical mistakes now than they made a hundred years ago?" So a hundred years ago, pre-TV, really even pre-radio, did your great-grandparents have a fantastic level of literacy above what you did? So she tried to gather data; she thought, "Well, what is something that young people have to write every year that's fairly similar over a hundred years?" And she realized that it was the Freshman Comp essay...

Dr. Dave: (laughs)

Thompson: …because every student has to write this – you know, engineers have to write it; historians have to write it. And so she gathered them, and lo and behold, over the last hundred years, the error rate had not budged at all. And errors ranging from "did they do run-on sentences"; "did they end with a preposition"; spelling mistakes; all these things – error rate had not changed at all.

Dr. Dave: That's so counter-intuitive, you know.

Thompson: (laughs) It's completely counter-intuitive, exactly.

Dr. Dave: Yes, we think we know that it's getting worse… (laughs)

Thompson: Yeah, exactly. Exactly.

Dr. Dave: …but when people actually take the time to look…

Thompson: To measure it, yeah.

Dr. Dave: ….yes.

Thompson: But here's the thing she wasn't looking for. She wasn't looking for this finding but she found it, and it's completely fascinating – is that…so while the error rate had not changed, two big things had changed. The essays were six to ten times longer now than they were a hundred years ago, and enormously more intellectually complex. So a hundred years ago, your great-grandparents' essay was basically saying, okay, a description of a flower or description of…a narrative of "what I did last weekend," right? The kids today are writing…they're writing these arguments, they're saying, "Well, here is my point of view; here is the evidence supporting it; here is my conclusion." Like, they're (laughs) – they're doing this high-end critical thinking. So, the question becomes "How did this happen?" Well, some of it is increasing educational standards. Without question, we ask more of students now. That's good. But

the hidden story here, also, is that technologies of composition came along that made it easier for kids to write. So, you know, a hundred years ago, your great-grandparents, my grandparents, were writing with, like, a nib pen dipped in an inkwell, and writing on really very crappy-quality paper. The average paper back then was pretty thin. So you had to work slowly, and you ripped the paper and had to start all over again, or you made a big blot and you had to start all over again. So that just slowed them down enormously. And in fact it frustrated journalists so much that a Hungarian journalist invented the ballpoint pen in 1945 to try and speed up his writing. And it worked so well that ballpoint pens sold for about a hundred dollars in today's equivalent money. That's how much it cost for a ballpoint pen in 1945. It was the iPad of 1945.

Dr. Dave: Hmm.

Thompson: And people bought them in droves, because the ability to write more quickly meant they could get their ideas down more fluidly. Same thing happens when the typewriter becomes cheaper and more available in the 60s and 70s; same thing happens when the word processor and the printer come along. So all these types of things are creating what the rhetoric scholar Steve Graham would call "transcription fluency." The easier it is to set down your ideas, the more you can practice, you can go get it, the more you can edit, the more you can ponder what you're doing…this is the reason why the kids' essays suddenly were able to explode in size, because they're able to actually work a little more swiftly, more closer to the speed of their thought. And so, these are the very invisible and fascinating things that technologies do to us, and text messaging is doing the same type of thing. The other thing I'll disabuse is the idea that if you watch it, you know, a kid talking to another kid, you'll see them using these short forms: you know, "u" for "you"; lol, emojis…

Dr. Dave: Right.

Thompson: …and there's this persistent myth that when they write an essay it's just littered with this stuff, because they don't know what they're doing. That's also not true. It turns out that when Lunsford studied these papers, the incidence of these short forms was basically nil. Same thing was found by Sali Tagliamonte up at the University of Toronto, so…and it's because kids understand what we call "code switching." The idea that you talk…when you look at texting you see all those funny short forms. They understand that they are doing verbal play. They're doing what David Crystal, the linguist, calls, like, almost communicating in rebuses, making these little hilarious puzzles. It actually takes more work to write that way, in a lot of ways. But they understand that it's just for casual talk. When you talk to the professor, you write formally; you have to write more carefully. Now, does this mean we have to give up on educating kids and they can just do it on their own? No. All these

kids, even when you survey them, they say formal instruction in writing is still absolutely necessary. Because they're not going to learn that in their texting, right? We still need to teach that in schools. But the technologies are not draining their literacy out of their eardrums. Not at all.

Dr. Dave: Okay. Now, I often refer to Google as a prosthesis for my brain. And I believe there was an article in The Atlantic some time back (I think it was The Atlantic, or it may have been Harper's) that posed the question, "Is Google making us stupider?" (laughs)

Thompson: Right.

Dr. Dave: Yeah, so what's your take on the notion that our reliance on Google for finding answers to questions makes us stupider and less able to think independently?

Thompson: Sure. The concern there has been…in a way, it's sort of similar to the Socratic concern about writing, which is that if we are able to easily access something, we will lose our habit of retaining it inside our heads. And in one respect, there's an extent to which that's sort of true, because I think we all have had the experience of getting out of certain mental habits because we know that there are devices near us that can help us out with this stuff. Like, for example, mobile phone numbers, or phone numbers. Generally speaking, younger people, myself included, don't really remember very many phone numbers anymore, because they are so easily stored in our devices, right? And so there's little things like that that we've stopped remembering and it creates this metonymic fear that maybe that's actually "As goes the phone number, goes all my knowledge," right?

Dr. Dave: (laughs)

Thompson: (laughs)

Dr. Dave: I could identify with that. (laughs)

Thompson: Sure. And, to be fair, I worried the heck out of that when I started my book. I thought, "My goodness. Is that really true?" But the more I investigated it, the more I learned that in reality, the truth is there's this thing called the extended mind thesis, which is that, you know, we like to think of ourselves as these sort of isolated thinkers, like Rodin's thinker. You know, sitting there, naked, on the boulder…

Dr. Dave: (laughs)

Thompson: …or on our fist. And that's sort of our mental model for what cognition is. When we're thinking, it's when we are alone, we are isolated. But this is not even remotely true. Ever since that Socratic moment thousands of years ago, when we began writing things down, our thinking has been in this dance and weave with knowledge and information stored outside of our heads, whether those are paper, paper notes; whether those were documents and books, and articles, and most interestingly, other people. It turns out that in the 1970s, 1980s, Daniel Wegner, a psychologist, got very interested in the way that couples seem to rely on each other to remember things. So (I don't know if you'd been in a relationship for a long time), I've been…

Dr. Dave: Oh, yes, I have.

Thompson: Okay...

Dr. Dave: (laughs)

Thompson: ...so, yes, I'm in the tenth year of my marriage, and so you would notice what I've noticed (in which anyone who's been in a relationship for a long time has noticed), which is that you start these kind of arguments, where it's like, "How come you can never remember where the keys are?" And your partner's like, "Well, how come you can never remember the birthdates of the in-laws?" Or "how come you can never…." – you know, and so you'll have these fights over the fact that one person seems to always be needing the other person to remember something for them. The truth is this is because our human brains have always been very bad at remembering details. We're good at remembering meaning. We read a book, read an article, read a story; if you ask us a few days later, we'll remember the details. If you ask us a week or a month, or a year later, we won't remember those details at all. We will have a gist of it.

You read an article in the paper about drone bombings in Waziristan – in Pakistan. And you go, "Oh," and you're all, "Wow, the tribal elders are really, really enraged at the US, and this is happening, and there were these blockades and what-not." Two months later, if someone asks you about…you know, "So what's going on with drone strikes in Pakistan?" you won't remember the specifics of the blockades or whatnot, but you will generally remember that, "Yeah, they don't like it at all," right? So we retain meaning; we're bad at details. And so, the whole reason why we invented – and why we have, as a species, so enthusiastically adopted these external sources of memory – is because we need to be refreshed on those details when we want to do deep thinking about something.

But the funny thing that almost no one outside of Wegner noticed was that we rely on other people even more than we rely on books and papers and articles. Like, we are engaged on what's called transactive memory. That's what those couples are doing. Over the years they've realized that, you know, "Because I'm Canadian I'm better at remembering Canadian politics and the relationship of Celsius to Fahrenheit." And my wife is better at remembering how to program the TiVo and American history, and so, as a unit, we are smarter when we're collectively together. We are social thinkers and social rememberers. And study after study has found this, that humans – when you put them in a group together, and they think transactively, and they remember transactively, they perform at this unbelievably higher level than if you gave them that task individually. And groups that are better at remembering transactively – the carving of the memory tasks – work even better, right? So we're not Rodin thinkers at all. Most of the time, we're working with other people; we're working socially; we're thinking socially. And so what happened…and here's where I'm going to bring it back to Google. Once, for a long time, we didn't rely on outside documents too regularly because they were a pain in the butt to deal with. You know, Encyclopedia Britannica did a study where they…how often does the average person open their encyclopedia. Well, it turns out they open it once a year. You spend hundreds of dollars on that, on those encyclopedias, and open it once a year. Why is that? Well, because it's sort of a pain in the butt to go over there and find something. It's faster to just ask your friend and get some (laughs) probably inaccurate answer…

Dr. Dave: (laughs)

Thompson: …but, you know, we go for the fast answer, right?

Dr. Dave: Right.

Thompson: Well, now that we have Google and smartphones and Evernote and what-not, those answers, which are going to be (not all the time, because there's a lot of crap online, but frequently) more accurate than our friend's, more accurate than asking our buddy. We started to rope those into our transactive lives. And so this is really what has started to happen to us: we've taken this quite venerable and ancient tradition of thinking socially, remembering socially, and we brought the machines into it now. And so this, to me, is a really kind of a fun story, because in many ways, machines are actually…they're almost better transactive partners than humans are, because definitely their knowledge is better. If I Google my wife about the civil war, I will get a handful of generally accurate details. But I Google the internet about civil war, I'm going to get the Wikipedia page, which is actually pretty good.

And I'm going to get a lot of amazing stuff. So, what we're...really happened is we sort of moved into the library. It's now surrounding… that's the unsettling feeling, it's this almost cyborg relationship now, the knowledge around us. But the flip side of this is, as I said at the beginning of this sort of long lecture here, we're bad at remembering details, except in a situation where we're really enthusiastic about something and situations where we are really passionate about a subject. Then our knowledge base is pretty strong and it's very easy to chunk in a new piece of knowledge. Like, because I know a lot about Canadian history, if you and I sat down and read a story in The Globe and Mail (Canada's newspaper) about some dispute in a Québécois rioting…and studies show this, if you asked us two days later the details in that story, you would retain nothing, because you probably don't know much about Canadian history, so there's nothing to fit those facts into.

Dr. Dave: Yes.

Thompson: With me, I actually have a good knowledge of that, and I'm interested in it, so I would fit those details in and I would spit back way more of those details. So our brains…what really fuels our memory is passion. And background knowledge on something. So, whatever it is that you are passionate about, you are really good at remembering. And that is also part of the reason why we socially rely on each other, because we're all passionate about something different. So I know that when it comes to – my wife's a TV critic, and if there's something with TV, I'm going to get a great answer out of her. I'm not going to bother searching my faulty, non-working brain. I wouldn't get a better answer than if I searched the internet. So, really, what's happening is that we're using all these devices and using the people around us to help fill in the blank spots that naturally occur in our brains. We've always been faulty rememberers. We simply have more strategies now to help compensate for those flaws.

Dr. Dave: Wow. (laughs) You know, you started off talking about Rodin and making the point that, most of the time, we're not engaged in what we think of as independent thinking, but that we're being influenced in lots of ways, not just by Google and online stuff but by the people around us. And you don't use this term, but the notion that comes to mind is "the hive mind." In some way, it seems to me like we are (laughs) in some kind of hive mind, or more.

Thompson: Sure. Well, yeah, I mean, I talked very briefly about the hive mind. Here's the reason: I've always been a little uneasy with the hive mind metaphor, because it's sort of dehumanizing. It creates the idea that the thinking done by a group of people is more significant than the thinking done by the individual. And that's sort of true in the case of a beehive. But in the case of a human group, it's definitely true that when we think together and

socially online, we can sort of solve and tackle problems much bigger than any individual can do. And this is really one of the great boons of being so much more connected to people, is that if you're wondering about something you do what I call "public thinking" now. You mention it, whether it's on Facebook, or in an email to an email list at work, or on Twitter, or even post a picture about it on Instagram. And sure enough the people who are interested in that often tend to find you. Because we're so much more connected, we connect to what sociologists call "weak links": people who we don't really know that well, but who might actually have a better answer than our close friends. And so this social thinking allows us to sort of definitely pull (inaudible) of these little collectives to help solve things.

I do this all the time now. I don't use Facebook a lot. I find it too complicated and too much of a mess really, for my own uses. But I love Twitter, and I partly love it because I get to follow smart people who are just strangers, and a lot of them follow me, and they wind up being fabulous, to sort of pull each of these sort-term little collectives to, like, "Hey, have you ever wondered about this?" and I just get this big think-fest happening.

Like, earlier today, I was tweeting about (laughs) this funny little statistic that these data scientists had studied vampire and werewolf novels, and found that statistically speaking, vampires are more likely to have love connections and marriage, and kids, in their novels than werewolves do. I thought this was a very funny use of data analysis. I post about it, and suddenly I'm in this fascinating conversation with people who I didn't know were interested in vampire and werewolf novels, and they're talking about the historical analogues and the reasons why this would exist, and we're just having this amazing conversation.

So this is classic collective thinking. You could call it a "hive," because we're generating knowledge bigger than any one of us could generate on our own. But the thing that makes it different from a hive is that people only engage in this activity when there is something sort of re-humanizing and exciting on an individual level for us, right? You know, we engage in arguments and discussions on our favorite forums; we contribute to a project online, like a Wiki page; we answer questions at Quora; we do all these things because there is this exciting feeling of being a creator, of being a contributor, that we didn't use to have in our everyday lives. And, so, to me, that's where it's like, I definitely agree that hive mind–like things happen, but I never use the word "hive," because I find that it dehumanizes the participants, and…

Dr. Dave: Yes.

Thompson: …you talk to individuals; they're very energized and excited with what's going on and it makes them feel powerful and delighted in a way that I try and capture in my reporting.

Dr. Dave: Yes. You use the metaphor of the centaur and that might be a good direction for us to go.

Thompson: Yes. Yeah.

Dr. Dave: And you talk about Big Blue and the chess master. So tell us about that.

Thompson: Yes, well, this was, in many ways – this is a good one, because this sort of gave me the foundational metaphor, in a way, for my book. I guess it was about four years ago, or three or four years ago, I was reading The New York Review of Books. Garry Kasparov, the chess champion, he wrote a long essay. It was a book review, and it was all about computer chess, and it was sort of looking…and obviously he has (laughs) an interesting story there, because he was the one beaten by Deep Blue. He was the first top player on the planet to be beaten by a chess computer. And what happened back then, as he noted, in his essay, that, you know, there was a lot of hue and cry around the world about how this was it, for humanity. This is the beginning of the end of human intelligence being the most crucial thing on the planet. Because people felt that chess was sort of this metaphor for thinking, and if a computer could do it better than we could, wasn't that sort of a dismal statement on human…

Dr. Dave: Yes, I have to confess that I lost my interest in chess at that point. I thought, "Well, what's the point?"

Thompson: (laughs) Sure.

Dr. Dave: (laughs)

Thompson: Sure, you and a lot of people had that same reaction. I definitely felt a chill go through my spine. That was 1997. But Kasparov knew…he knew, and all chess people knew to a certain extent, that it was only a matter of time before a computer beat a human. Because computers and humans think in completely different fashions. A human chess player gathers…you know, spends years studying chess, playing chess, and developing this intuition of what is the best move. If they look at a board, they're quickly analyzing it, and their intuition manifests itself as "This is the move I'm going to make." Now, a computer like Deep Blue doesn't do that. It has no intuition. All it does is take the positions, calculate every possible move, and then take each of those moves, and (inaudible) every possible move. And once you've got eight moves

out, it calculates the absolute best one. And it just does that over and over again, right? So it's this brute force. It has speed, and infinite memory on its side…

Dr. Dave: Yes.

Thompson: …but it has no intuition. So if you get a fast-enough computer, you're going to beat the human intuition. Kasparov knew that; he wasn't even that surprised if he lost. But he realized that maybe something else could happen here. Rather than have these two forms of intelligence fight each other, why not have them cooperate? If they're doing things in different ways, then maybe, when they combine their strengths they'll produce something even more radically new and interesting.

And so he created a form of chess called Advanced Chess. And the idea was, one grandmaster cooperating with a laptop, facing another grandmaster cooperating with a laptop. So each grandmaster could use chess software like – not fancy stuff, the stuff you'd get at Walmart. Sixty-dollar programs. And he or she could program him, you know, the positions on the board, and see what the software would recommend, and they would use it to sort of war-game. "Well, what if I did this, what would happen? What if I did this, what would happen?" And essentially it freed them up to let their intuition go in different directions than they normally had (inaudible). And, sure enough, what started happening when he did this – and he was the first person to play chess this way – he and his opponent played crazier, more creative chess than either of them had ever played in their lives. They were able to entertain moves that they never would have dared individually working on their own. Because chess is complicated, and so chess grandmasters tend to specialize in one – again, because of our faulty memories, and these guys have really good memories, but they're still human – they would tend to specialize in one particular gambit. And they would do it over and over again. And they would refine it. They wouldn't try crazy things. In this situation, because they had the ability to sort of do this playful war-gaming of different options, they were able to take their intuition and let it go wild. And so they began playing mind-blowingly creative chess.

And sure enough – and then everyone started playing – they had tournaments. And it turned out that the people who were really good at it weren't even necessarily the best grandmasters. They were deeply knowledgeable amateurs about chess, but they were very good at understanding when to rely on their human smarts and when to rely on the machine smarts. That was the most potent combination. The winner of the huge Advanced Chess competition a few years later, they weren't the top players; they were actually comparative amateurs, but they were really good at understanding when should the human

intuition take over, when should the machine knowledge take over. And I thought that was a fantastic metaphor for the world we're living in now, where we need to become fluent and experiment and kick the tires on all these new tools, and learn how they work, learn what they're bad at, learn what they're good at, understand what our brains are bad at, understand what our brains are good at, and so what turns us into a union of the two. And that's where that centaur metaphor comes from. That's what the chess players called Kasparov and his laptop: a centaur, you know, half-beast, half-man. And so I argued that to a certain extent, we are all learning to be centaurs right now.

Dr. Dave: Yes. You actually come back to the computer–human being partnership at the end of the book. So let's just skip there for the moment...

Thompson: Sure.

Dr. Dave: …where you talk about you talk about Watson. And I was particularly intrigued by the possibilities for medicine. So tell us a bit about Watson.

Thompson: Sure, sure. Well, I got a chance to interact with Watson. Watson was the next really big thing that IBM tried to do. "Well, we beat chess. Is there something else we could beat a game that's really, really hard, and even harder than chess?" And they settled on Jeopardy! So Jeopardy! the TV show. The reason why that's so hard is because when someone's playing Jeopardy! they have to take a very complex clue that often has a lot of clever wordplay. Something like…what's a funny one? It would be like, "A tiresome diatribe delivered by a frothy custard dessert." And the question is, "What is meringue harangue?" Right? And so this is very complex stuff.

Dr. Dave: Yes.

Thompson: The computer has to be able to understand, break down a sentence, understand there's wordplay, figure out rhyme. This is way beyond what Google or anything could…because when we go to Google, we type in a query, but it just gives us a page. We have to pull out the answer. In this situation, they want to create a computer that would pick out *the* answer, and do it really quickly, faster than a human. And so they worked on this. They spent years on it, and lo and behold, they got a pretty good device working. I played against it; it destroyed me.

Dr. Dave: (laughs)

Thompson: I mean, I think could be destroyed by a fifth-grader in Jeopardy! I'm very bad at it. But nonetheless, it was humbling to be completely spanked by a

computer. And as I looked at it, I was talking and I said, "So where do we see this going? What do we think we're going to do with this?" And they said, "Well, what Watson is really good at doing is sifting through massive piles of textually written knowledge, and finding an answer to a question, going through way more knowledge than any human could individually do." And so one of the first things that they're working on is at Memorial Sloan Kettering Cancer hospital. They're taking an instance of Watson, which still requires a big supercomputer to run on, and they're feeding it essentially all known relevant cancer research. And so the goal is going to be…the experienced cancer doctor is assessing a patient, and he or she is using all of his or her intuition – you know, the ability to understand what's going on with this patient, observe them, to do that deep human reading that only a human can do – and to bounce it against their deep experience from having seen hundreds of cancer patients. You know, "what does this look like?"; "where am I (inaudible) is going?" But they could also use Watson to ask questions, to pull out pieces of research that they would never uncover on their own more quickly and rapidly than they ever could before. So this is useful not just in diagnosis, but maybe even in the operating theater, where something is kind of blowing up and you need an answer about something that no one knows in, like, 10 seconds. As the IBM people said it, any situation where the human desire to sort through written knowledge is massively overwhelmed by the amount of knowledge that's out there. And that describes a lot of things. That describes medicine, law, citizens facing the regulatory apparatus of the state. I mean, talk to any small–business person trying to figure out how various thickets of regulations, state, local and federal, affect their business. My God, it's like, that's half their work day. So, in one sense you could think of it as this…Watson could start to emerge as this fantastic way to get very precise answers of the sort that we cannot get from either Google or from another human. And that would be another tool to add to our centaur-like thinking.

Dr. Dave: Yes, and I'm imagining a massive online-like Google version of Watson that we could time-share with, so that…

Thompson: Yeah, yeah. Absolutely. In one sense, Google search engine already is a supercomputer that we time-share on.

Dr. Dave: Yes.

Thompson: I mean, I rent it, for a millisecond with my eyeballs and my advertising attention, right?

Dr. Dave: Right.

Thompson: And so in one sense, you could easily imagine Watson working that exact same way. And I think one of the things...and at first part of me was – as always, I think I'm like everyone else when I see these fantastic machines. Part of me feels this stab of "I feel the Kasparovian stab of cold dread" where it's like "Oh, this is it." You know, like, (laughs) we're finally going to be outmoded here. But then, of course, the way to answer that is to think like Kasparov did, and think, "Okay, so what are the problems we can now tackle? What are the new forms of thinking and creative thinking and playful weird stuff we can do if we cooperate with this machine?" Right? And one of the things I wondered about – and people joked with this at IBM – was imagine what type of Advanced Jeopardy! you could do, like, what if you could give clues that are intended for a team of Watson and a human, right? You could start to (laughs) put together a game show with the most unbelievably fiendish, weird, interesting questions if you had these collaborators working together. And that's sort of something I'm excited by too. In a weird way, I think one of the things that Watson might be useful for on an everyday level, this sort of question-answering ability, is not just to explore a new knowledge – that's a big deal, but even doctors (inaudible) to sort of reaffirm their confidence in their own knowledge, too. You know, so, like, one doctor is saying to me, "I'll bet six or seven times out of ten, if I have a diagnosis and I run it past Watson, I'll probably just get affirmation that I'm right." Which itself is useful. The ability to know that our…to scaffold and reinforce our own human intuition is a valuable thing. So I think there's a lot of interesting ways that intelligence like Watson will start to filter into our everyday lives.

Dr. Dave: Hey, here's a little detour that just popped into my mind. Have you seen the movie Her?

Thompson: Not yet, no. Have you seen it?

Dr. Dave: Yes, I saw it this past weekend. It's wonderful, and just in case anybody has not heard about it yet, this fellow falls in love with the kind of the equivalent of Siri, only many generations down the line of a very empathic version of Siri.

Thompson: (laughs)

Dr. Dave: Very smart, very empathic. And it leads me to wonder what your favorite science fiction movie is.

Thompson: Oh, wow. I have a lot of different ones, sort of depending on what mood I'm in (inaudible)… Sometimes I really want to see the apocalyptic stuff; sometimes I'm more interested in the fun stuff. In a weird way, one of the ones

that I return to over and over again, in a funny way, is a kids' movie: Wall-E. I think Wall-E is one of the most fascinating science fiction views of what environmental overuse of the planet might look like and its implications for what it means to be human. And it does this very delightful anthropomorphization of the machines. It's got a really big heart, but with a very serious message. And I've seen it a couple times with my kids, and I'm astounded over and over again, with the sort of artistry of that one. So that's one that I really like. I'm also, in a weird way, a fan of old science fiction because I love seeing how people thought the world was going to turn out, right? Like, one of my favorites is 2001: A Space Odyssey, not just because it's so elliptical and interesting and metaphoric and poetic, but because it's fun seeing where they got the future wrong. There's that moment when the guy in the rotating space station goes to a…he sits down in a phone booth to do a video call with his daughter. And on the one hand, back then that seemed unbelievably futuristic. "My God, you can talk to someone on a screen!" Whereas, you know, they accurately predicted the idea that at some point in time video calling is going to be possible, they completely failed to understand that at the point in time when video becomes something you can send back and forth, it's going to be small enough that it fits in your pocket. Right?

Dr. Dave: Yes.

Thompson: Like, they could conceive of the idea of video as this kind of compelling way to talk to people, but could not conceive of the idea that a computer would fit in your pocket. And so one of the reasons why I like watching and re-watching that movie and movies like that is that it's a reminder to be humble in thinking about the future, which is that we tend to get the human element right and the technological element wrong. Which is to say, that movie, they accurately predicted that the human desire to see our loved ones is just eternal. And it really is. Like, human nature doesn't change. I've recently reread The Iliad and The Odyssey, and it's hilarious, because apart from the ritual slaughter of slaves and stuff like that, basically what they're doing is similar to what we're doing today. You know, they're fighting with each other, they're arguing with each other, they're loving each other, they're worried about what everyone thinks of each other…

Dr. Dave: (laughs)

Thompson: So, you know, human nature doesn't change very much. And so you look back at that science fiction portrait in 2001, and you know, he's absolutely right – we still want to just interact with our kid when we're far away from her. But we tend to be wrong about the technology. We tend to misperceive where things are going to go. And in some respects, one of the reasons why I like reminding myself of that...because I write about technology, people are always

asking me, "What do you think is going to happen in the future?" And more and more over the years I've realized, you know, (laughs) I don't really know…

Dr. Dave: (laughs)

Thompson: …and I don't even want to try and predict. Because most of my journalism is all about trying to report in a nuanced way what's actually happening right now, because people spend so much time in the technology press trying to predict the future, they stop even noticing what we're doing in the here and now. What's happening here and now is unbelievably interesting, and it has the advantage of being reportable. You don't have to guess at it, just pick up the phone, hit the streets, talk to people, and you can discover it. So the upside is that I've found that after years of doing this, if you describe the present clearly enough, people think you're talking about the future. So that's sort of what I try and do. But those are a few of my disparate favorites in science-fiction movies.

Dr. Dave: Yes, thanks for that. Isn't it amazing at how adaptable we are that we can adapt to these new technologies very rapidly, and become quickly very jaded.

Thompson: Yes. (laughs)

Dr. Dave: You know, like, "Okay, what else have you got for me?" You know, "I have this little phone in my pocket that is more than what got people on the moon, and so what else?" (laughs)

Thompson: Yes. I think, in some respects, my book was an attempt to remind people of just how remarkable and magical all the things that are already happening are. Right? It's like, "You people! Stop being so jaded! My God, you know, we have the ability to talk openly and publicly and connect with like-minded thinkers around the entire planet. I mean, this is mind-blowing, what it does to the psychology of everyday life."

But I think your point, though, is really interesting, because the one thing I've learned is that the technologies that we tend to really like are ones that catalyze an already existing human behavior and just extend it in a useful new direction. It's hard to create entirely new behaviors, and when people try it they usually fail. I'll give you an example. So, one of the reasons why we like status updates, these short bursts of a text message or a tweet or a picture on Instagram, when you look at any individual tweet, it seems like, "Wow, that seems kind of pointless," you know, (laughs) "that doesn't communicate very much." But over the aggregate, if you follow someone, for a few weeks or

months or a year, you get this very rich picture of what's going on in their mind. Because you've had these little glimpses, like, several times a day or several times a week. And so, you know – I'm a Canadian ex-patriot, I've been living in the US for 15 years, and I used to try and catch up with my friends in the phone twice a year, and it didn't work very well. Anyone who's tried to do that knows the two-hour conversation twice a year is a bad way to remain in emotional contact with your friends. But once they all got on Twitter and Facebook and whatnot and started posting stuff, now I had this floating, very casual sense of what's going on – this ambient awareness...is what psychologists call it.

And the reason why that works for me and for other people is because it plugs into preexisting human behavior. We're good observers of each other's body language. You know, you're sitting at home; I'm in one corner reading a book; my wife is doing some work on our laptop. I can tell, by the way she's typing, or not typing, and her body language, in the way she's breathing, whether she is enjoying or in trouble with the work she's doing. We're good at reading each other. And so the reason why the status-update universe took off so well is it gave us this new dimension to do this thing we were already doing, which is reading each other's ambient signals. So that's why it worked.

Now, take something that isn't working very well: Google Glass. So Google Glass is a wearable computer. You put it on your…like a pair of glasses on your head. It's got a camera pointing outwards and a little screen in your eye, and I tried it for several months and I found that people were very unsettled by it. And that's because of two things. It broke two social contracts. The first one is it's got a camera pointing out at everyone all the time. Even though it's not on all the time, people felt like it might be on all the time.

Dr. Dave: Yes.

Thompson: Google Glass was trying to get people to accept a radically new behavior, which is that it's normal to walk around with a camera pointing at people's heads. And that just was not flying. And the second thing was that the little screen in my eye, I could see what was happening in it, but other people couldn't. And that gave it a sense of unhealthy mystery, because, if you walk on the subway, you see people reading books or reading magazines or looking at their phones, and in one sense what they're doing is private, but it's not that private. I can see someone's screen; they can show it to me. I can see someone's book; they can show it to me. I can't really easily show you what's on my Google Glass screen. It remains a mystery to me. And so Google Glass had these two problems that I think might be fatal to that. I don't think people will necessarily accept those behaviors because they're sufficiently alien from what we already do. And so the thing I've learned over and over again is that

the technologies that work well catalyze richly textured human behaviors that we already do and enjoy, and give them a new dimension. But it's hard to get people to do something that they aren't already doing.

Dr. Dave: Well, your mention of Google Glass actually leads into one more area that we'll go into before we wrap things up here. And it raises – you know, many of us are concerned about privacy, and worry that having a permanent online record of our lives is dangerous. You interviewed some folks on the opposite end of the spectrum – lifeloggers. And I wasn't even aware of lifeloggers. (laughs) Tell us about lifeloggers…

Thompson: Sure. Sure.

Dr. Dave: …and what that says to you about privacy on the one hand versus total exposure on the other.

Thompson: Well, yeah, this is a great question, because I think everyone is nervous about this. I certainly am. You know, I told you about how I don't use Facebook very much. That's partly because I've stopped trusting Facebook, right? I would post stuff thinking that "This is only for my friends," and they would change their privacy policies and now lo and behold, friends of friends can see it. Or the whole public can see it. And so I became increasingly uncomfortable using a tool that was going to change on me, or that I did not really understand how it works. And I think that's a common thread, that when we're faced with a tool that seems like it's "some corporations are going to change its mind about how it sells ads based on our eyeballs," best to stay away. And Facebook's growth has actually begun to plateau and shrink amongst young people, I think for exactly this reason. It's sort of the lifelogging problem.

When I talked to these lifeloggers, I was talking to people who…they're very interested in the idea of what it would mean to have a complete record of their lives, you know, so maybe wearing a camera that takes pictures all the time, or having massive archives of everything they've ever written right at hand. Or having audio copies of every conversation. It was like really crazy stuff in a lot of cases. Now, two things I found: one is that the lifeloggers were actually often quite…they liked collecting stuff but they didn't want to make it public. They wanted the archives to be for them. And in fact some of them, one of the most prominent ones, Gordon Bell, this older gentleman who's been doing it for ten years, (laughs) he was, like, "These kids on Facebook, I think they're nuts!" Like, "I want an archive of stuff, but I want it personally for me to be able to, like, augment my memories and what-not. I don't want…" He doesn't put that stuff online; he keeps it encrypted. So a lot of the lifeloggers were very

interested in making an archive of their lives in the same way that a diarist like Samuel Pepys in the 18th century was trying to make an archive of his life. Pepys didn't publish his diary; he was purely for himself. So a lot of the lifelogging was an attempt to augment one's memory internally. Now, that said, you're quite right. A lot of people are sort of doing this almost inadvertent lifelogging, whereby they're just posting a huge amount of stuff, ever more stuff about their lives. Pictures, status updates, maybe they've got one of those FitBits now that auto-reports how much you've been running so you can sort of brag, or get ashamed by how much or how little you're running. And I think that what's happening is that there was this big feeling of excitement for the last five to six years about how powerful and great those connections could be, the more that you talked about what you were doing.

There's definite value in those acts of public thinking and social glue that comes about, but more and more, you're seeing, and I think very healthfully, people realizing a couple of things. One is that, well, there are certain things you don't to be online, because, you know, you don't want to have people making fun or taking up contact something you did from years ago. And, secondly, there's this uneasy sense that these corporations running these services are not doing it as a public service. They're selling ads, or maybe they're selling the data to someone else. Maybe the NSA is going in there and asking for copies of it in a big dragnet, hoping they could find terrorists. So this is why you're actually seeing the big growth amongst young people who are really trying to hide from authority figures (which is to say, their parents) – they begun using tools more like Snapchat, which rather than archiving things permanently…they'll still use Facebook, they'll still use Instagram for putting things up for posterity. But they're careful to only put up the things that they really think are going to stand the test of time. If they wanted to do something silly, or something frivolous, or something risqué, they'll use one of these apps that has what you could call "artificial forgetting" built into it. The way Snapchat works is you take a picture, you send a text to your friend, it goes to your friend, they have ten seconds to look at it, and then it is deleted. Now, obviously there are ways to hack that. If your friend is a mischievous…you know, or isn't really your friend, they can take a picture of the screen. There's ways to save it. But by and large the social contract has changed amongst those people. And they are realizing that they don't want everything to be remembered. They don't want a perfect lifelog of everything; they want a lifelog curated of only the things they want. So we're almost moving back to the halfway point between kind of the rare photo from the polaroid and the pictures of everything that you might have got three or four years ago. We're moving towards a hopefully healthier balance right in the middle.

Dr. Dave: Fascinating. Well, you're just a wonderful guest. (laughs) There was so much rich information. Are you a blogger, by any chance? Have people wanted to follow you aside from buying your book?

Thompson: Yes, there are two places they can go. They can follow me on Twitter. I post a lot everyday. I am pomeranian99. Long story behind that title (I'll tell you some other time). (inaudible) I like Pomeranians. Pomeranian99 on Twitter. Or my collisiondetection.net, which is my personal blog. So those are two places people can go.

Dr. Dave: Okay. Well, as we wind down here, is there anything you'd like to add by way of summary?

Thompson: No, other than everyone listening to us, please go out and buy my book. I will send beams of gratitude across the ether. Other than that, no, this was a great conversation, sir. I had a wonderful time.

Dr. Dave: Well, I did too. Clive Thompson, thanks for being my guest today on Shrink Rap Radio.