

**Shrink Rap Radio #404, May 22, 2014, The Erosion of Privacy on the Social Web
David Van Nuys, Ph.D., aka “Dr. Dave” interviews Jennifer Golbeck,
Ph.D.**

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

Introduction: My guest today is professor, computer scientist and author Dr. Jennifer Golbeck, and we’ll be discussing her work as a social media analyst. Now, here’s the interview.

Dr. Dave: Dr. Jennifer Golbeck, welcome to Shrink Rap Radio.

Jennifer Golbeck: Glad to be here.

Dr. Dave: Well, I’m really pleased to have you on the show. I happened I think by chance upon your curly fries TEDx.com presentation...

Golbeck: (laughs)

Dr. Dave: ...and I knew I had to get you on. I’m hoping that we can cover some of the same ground that you did in that presentation, but to go into more depth than you had time for then.

Golbeck: Right.

Dr. Dave: And I’m particularly interested in the erosion of privacy, so that will be our focus. But before we get into that, maybe you can start out by taking us through the evolution of what you refer to as the social web.

Golbeck: Sure. So if you think about the web when it was first born, which was 1991, I was in elementary school still. Most people couldn’t get online to interact and as it became more popular through the 90s, it was really a static place, so you could go – you could look at CNN’s page or Amazon’s page in 1997, you could buy things, you could look around, you could read what other people had written, but it was really hard for people to put their own content online.

Dr. Dave: Yeah. I’m older than you are, so...

Golbeck: (laughs)

Dr. Dave: ...I’ve been around for the whole evolution from the – I was at the university as a psychology professor and I remember the IT guy, head of IT who I was a little bit friendly with, and he said, “Hey, you might be interested in this,” and he had a big printout of sites that you could go to on this new thing called the World Wide Web. So there was no search engine yet.

Golbeck: You didn't need one.

Dr. Dave: And there was just – yeah, there was just this printout.

Golbeck: When I was in high school you could buy a directory of the Web, which was the size of small town phonebook, and it had a list of every page on the web in the book.

Dr. Dave: Oh, wow. Yes.

Golbeck: Which is just so different from how it is today.

Dr. Dave: Yeah. Okay, so I interrupted you, go ahead. (laughs)

Golbeck: (laughs) Yeah, so at that point if you wanted to post something online, whether it was your resume, a personal profile, you had to know how to get access to a server, to transfer files back and forth, usually how to author things with html, which is the language you use to write web pages. So it really took a lot of technical sophistication to be able to put things online. And that all changed with blogs, which now are ubiquitous. Blogs came out in the late 90s, early 2000s, and it was so easy because you could go to a site like Blogger, you could type some text into a box and it would make this beautiful webpage and you could update it as many times as you wanted. And so suddenly people were able to write content online. And that kicked off this transformation of the Web from a static place to a place where people were creating content. And the blogs were followed shortly thereafter by social networking sites like Friendster and MySpace and then Facebook, where you could create a profile for yourself online, which was a huge transformative thing in the mid-2000s. And then that shifted to now where we're posting links and photos and interacting, and we have these huge streams of personal data. So really it was that change really of the second decade of the web that it shifted to this place where people started generating content and putting things online because it was exciting, but at the same time, all of a sudden, it became really easy to find out a lot about people on the web.

Dr. Dave: Yeah. And just stepping back again for a moment, I remember the local newspaper called me at one point wanting to do a story and he wanted to know what did I think of blogs, and I really hadn't heard of blogs yet...

Golbeck: (laughs)

Dr. Dave: ...so – and it was kind of described at that point an online diary.

Golbeck: Right.

Dr. Dave: And so that – I was like “Oh, I don't know how much sense that makes”...

Golbeck: (laughs)

Dr. Dave: ...I'm really not sure I know what to do in these online diaries. Really blogs turned into something quite different, I think, than an online diary.

Golbeck: Absolutely.

Dr. Dave: Yeah.

Golbeck: And it's transformed everything from journalism to the way people share personal information and lots of things beyond that.

Dr. Dave: Now we have Facebook and in your presentation you talked about the incredible growth of Facebook and I remember one point people were saying, "Well, if Facebook were a country, it would be, what, the third largest country in the world or something like that."

Golbeck: It might be the biggest now, I have to check India and China, but Facebook has 1.4 billion users now.

Dr. Dave: Wow.

Golbeck: Which is about 60 percent of all the people in the world who have access to the internet, including people in developing countries who can access it through their flip phones. It really has become a ubiquitous thing, where their growth is a little hard to sustain, because eventually you have everybody in the world who wants to be on it and then how do you get any more people than that?

Dr. Dave: Right. Right. (laughs) So let's talk about Facebook, because that was a lot of your focus, and I guess Facebook is really an example of the whole class of social networking tools that are out there right now. And when I like something on Facebook, that seems like a really innocuous thing to do, to just say "Well, I'll be friendly and acknowledge that I saw this." And I like it. Maybe it's a member of my family who has posted a picture of a grandchild, so I'll like it. Is there any danger in that?

Golbeck: (laughs)

Dr. Dave: (laughs)

Golbeck: It seems so innocuous, but the important thing to think about here is that we have 1.4 billion people on Facebook, and normally, if you look at the kind of analysis that social scientists did or psychologists, right? They can say, "Oh, people who do this tend to be like this." They would do those studies with a hundred people. People who tend to eat the same thing for lunch everyday tend to have these personality traits. But with 1.4 billion people online and you can monitor everything

they like or what they're eating for lunch everyday, it becomes possible for us to find these tiny little patterns that can reveal huge things. And Facebook likes are one of those. So in the TED talk you mentioned, I talk about this great study that came out of Cambridge where they looked at 65,000 people and what they liked on Facebook. And with that many people you can look at a whole bunch of their personal traits and compare it to the things they liked and find these patterns. So they were able to guess things just from likes, like whether you were a drug user, whether you used alcohol, if your parents got divorced before you were 21, along with some more obvious things like gender, race, religion, and sexual orientation. But my favorite story from that is the title of the TED talk you mentioned, the curly fries. So they were looking at intelligence in their study. They had a lot of these people take the standard IQ intelligence test and they looked at what likes were most predictive of high intelligence and low intelligence. And some of them make sense. So liking the page for science is one of the top predictors of high intelligence. Okay, smart people like science so that makes sense. Thunderstorms was a like that indicated high intelligence. Now you can maybe stretch it and say that's intellectual curiosity. The Colbert Report was up there, and the Colbert Report actually did a story on this scientific article because it said smart people like that show. But the one that I liked most is that liking the Facebook Page for curly fries was one of the top indicators of high intelligence. And you just go, "Why could that possibly be true?" Right?

Dr. Dave: Right.

Golbeck: And...

Dr. Dave: That's what psychologists – if I recall my graduate training well enough –...

Golbeck: (laughs)

Dr. Dave: ...face validity, that it makes some kind of sense on the face of it, and we call that face validity.

Golbeck: Yeah, and this doesn't.

Dr. Dave: This doesn't seem to have any face validity.

Golbeck: So let me give you my hypothesis for why this is, and I love this story because it encapsulates all of what I think is fascinating about doing research in this space and why privacy is so threatened. So we know how stuff spreads through social networks, information, Facebook likes, viral videos, they spread exactly the same way as diseases spread and we've been studying that for hundreds of years, so we know how a cold would spread through a social network through people. So we know how things like viral videos or Facebook likes spread. And if we look to the social sciences we also know this thing called homophily, which is a fancy word that just means we are friends with people who are like us. So if you're highly

educated, you will tend to have more highly educated friends than there are in the general population. If you're rich, you tend to have more rich friends. If you're white, you tend to have more white friends. It applies really across personal attributes and it's true that if you're smart, you tend to have more smart friends than there are in the average population. So if we put those two things together, I can tell you the story where we can imagine that the guy who made the curly fries page on Facebook or maybe one of the first people to like it happened to be really smart, just perchance. And so he liked it and his Facebook friends see that he liked it. But we know because of homophily that his Facebook friends are probably smart guys because smart people tend to have smart friends. And so they see the curly fries page and just like he coughed on them if he had a cold, they see the curly fries page, some of them liked the page just like they would catch a cold from him. And so now it has spread from one smart guy to some other smart people. And then their friends are going to see that they liked it and they will also tend to have smart friends, and some of them will like it. And so what happens is that it spreads through the network but it happens to be spreading through a part of the network that tends to be intelligent. It's not that the curly fries themselves have anything to do with intelligence, but after this goes on for a while, if you come in and click "like" on the curly fries page, the computer doesn't know what curly fries are or even what intelligence is, it just knows that you have done a thing, liking that page, that other smart people have done, so it's going to guess that you're smart. So it doesn't have anything to do with the content but it has to do with all these ideas of how we connect with people, social science ideas, and how things spread through networks. And this is the really concerning and creepy part about privacy online, to come back to your original question. We can all say, "If I'm out looking for a job, I don't want to like the page 'I hate my boss' or 'Jobs suck,'" right?

Dr. Dave: Yeah.

Golbeck: Because that is going to say something about you. But what is much harder to understand is what does this activity say about me compared to all the other people who have undertaken this activity, and what can the computers predict? Humans just can't understand that. We don't understand these models, and you need to know all of the data before you can even make a guess at what that might be. So our privacy is being eroded, but in ways that it's almost impossible to protect ourselves from with a normal human understanding of what our actions mean.

Dr. Dave: Yeah. Yeah. And of course you can't help but think of the political ramifications of this and along with the commercial ones. I think most of us are – we're aware of the commercial part that we have this sense, "Okay, companies are trying to track me, they're going to try to serve up ads that I'm going to like that they want me to click on," and so we're used to that idea. But I think most people, most of us don't fully appreciate just how much they can find out about us, and all the different ways that it could be used. And we used to be afraid of what was called Big Brother, but...

Golbeck: Right.

Dr. Dave: ...and Big Brother was equated with the government. How do we refer to Big Corporation? (laughs)

Golbeck: Yeah, I have heard them referred to as a lot of Little Brothers. Because it's not the government spying on you, that's a separate issue, but there's all of these different corporations collecting this data and trying to find ways to use it. Right now, it's the little ways that I've seen this used in practice have been – Google will do some of this. They predict your age and your gender and they use that to help give you better search results. We haven't seen some of these crazier predictions like if you're a drug user or if you're a heavy drinker, we haven't seen those used commercially, as far as we know, but they could be, and I always make this suggestion that if I get bored being a professor, I'm going to just start a company that makes these predictions and sells it to all the places that you're applying for jobs. So they can see if you're going to work well in teams and if you're going to show up to work on time. I tell it as a joke but the fact is that technically, it is a hundred percent possible for me to launch that company this afternoon if I wanted to. And that's a concerning thing, because really, we don't have any way to protect ourselves from that being done. This data is public, and any company can go out and collect it and do whatever they want with it. And there's not any good way for us to say, "I'm not okay with you using my information like that."

Dr. Dave: Now you know that's a "great" idea that you just had. (laughs)

Golbeck: (laughs) Yeah.

Dr. Dave: I put that in curly fry quotes.

Golbeck: (laughs)

Dr. Dave: Because it totally makes sense from a commercial point of view, and it could be a really big business, as a matter of fact now that you've said it, and you also said it in your TED talk. (laughs)

Golbeck: Yeah. I think about all those millions I could be making. (laughs)

Dr. Dave: Yeah, definitely. And I have to wonder if somebody else isn't already out there doing that, either having come up with that idea independently or having heard you put it out there. Have you checked to see if anybody's doing that?

Golbeck: So since my TED talk went up, I've had emails from people, not necessarily about that specific idea, but about things like "Can we incorporate your social media data and these predictions into your credit score? In your credit report? Can we predict if you would use a certain type of illegal drug so that we could target you with messages about the diseases that you might contract from that?" Some of those

things scare us, some of them we can see that there might be a good way to use it. But I actually think that if someone goes out and does that idea, starts this company where they're selling these reports that it could be one of the better things for our privacy because something we saw a couple of summers ago, when we were in the midst of this recession and everybody needed a job, is that there were a lot of employers who people would come in for interviews and they would say, "Here's a computer, sit down, log into your Facebook account, log into your Gmail account and we're going to go through it." And people were like, "I need the job, so okay, even though this is a huge violation of my privacy and my personal space." And in response to that, there was this huge public outrage and a lot of states, including my home state of Maryland, passed laws forbidding this, saying, "Employers are not allowed to ask for social media logins and passwords or email logins and passwords." And this idea of predictions I think could get the same kind of legislative response. And we're even more fraught because on top of it just being a lot of personal information that we may not want to share, it also isn't right all of the time. So I say we can make these predictions and they're quite accurate but they're not a hundred percent accurate. Some of them are right 75 percent of the time. So what happens in that other 25 percent where it says something terrible about me that's not true and there's no way to prove that? I shouldn't have to prove that I'm not a drug user just because an algorithm got it wrong. So I think if people do start pushing the envelope here that it may be the kind of motivation that we need to get some legislative change to protect our data that we don't have now.

Dr. Dave: Hmm. So when you say it's potentially a good thing, it's only potentially a good thing if the populace becomes sufficiently aware of it, educated about it, and aroused to make something happen.

Golbeck: That's right. We need outrage.

Dr. Dave: Yeah, and then the other thing, of course, and I'm feeling very cynical these days. I shouldn't watch 60 Minutes. (laughs)

Golbeck: (laughs)

Dr. Dave: The most recent episode of 60 Minutes really showed the degree to which congresspeople are really just up for sale. So we have huge corporate interests that are not going to be interested in the kind of legislation that you're talking about, that will probably actively oppose that kind of legislation and make it very difficult to get it through. So I'm not terribly optimistic about – and the laws seem to lag so much behind the technology that to some extent the horse is already out of the barn by the time legislature's even begin to consider some of the issues that are raised.

Golbeck: Yeah, without question. We have barely caught up to the fact that the internet exists in a lot of our legislation. And in the US, we have this view where we tend to give a lot of control to the companies who have this data, but it's not universally like that. And just today I was reading an article, in Europe there's much more

privacy orientation and human user orientation of how your data is controlled. You have much more right over your data in Europe than you do in the US. And there was just a ruling that I read about today in Spain that said basically you have a right to have things forgotten about you. And it was a lawsuit brought by this guy in Spain who is upset about the fact that the auction of his long-ago foreclosed home would come up when you searched for his name on Google. So even though he was perfectly fiscally responsible now, everything was fine, the first thing that you'd get is that his home had been foreclosed on. And so he sued about this and he won his lawsuit. The courts in Spain said there should be a right for people to have information about them removed. And it doesn't matter that it's public and it's all out there. You can't just report everything that you find. So I think that's a really interesting sign of how these kinds of issues are starting to come out, though this is a simpler case than these predictions we're talking about. But we really would need a big shift in the US away from corporate control of data to personal control of data. And I think the only way you're going to get that is with a lot of public pressure on legislatures. So I've made it my goal to get people as outraged as they need to be to demand this control to come back to them.

Dr. Dave: Well, good for you.

Golbeck: (laughs)

Dr. Dave: You know there was a – (laughs) I support that. There was another story that you told in your TED talk and I don't remember all the details of it but it had to do with Target.

Golbeck: Yeah.

Dr. Dave: Yeah, tell us that story, if you will.

Golbeck: So, yeah, this story is reported in Forbes magazine. There was a dad in Minnesota who called up his local Target, got the manager on the phone and laid into him because Target had sent this flyer to his 15-year-old daughter with coupons for, like, baby bottles, or cribs or diapers or something like that. And the dad was saying to the manager, "What do you guys think you're doing? Are you trying to encourage her to get pregnant? She's only a junior in high school." And the manager had no idea what the dad was talking about but offered an apology. And two weeks later, the dad calls back and gets the manager on the phone and apologizes because it turns out his daughter was pregnant and Target knew about it before she had told her parents. And – this great story, right? How does Target know that this girl is pregnant before her parents – anybody knows that she's pregnant? And the Forbes article talks to people at Target and they explain that they have this thing called a pregnancy score, where they...

Dr. Dave: Wow.

Golbeck: ...look at your purchase history, which they can get either if you have one of those loyalty cards or if you just use the same credit card every time you go. And it turns out that you can guess not only if someone is pregnant but also when they're due by analyzing their purchases. And again, it comes from innocuous stuff. So Target themselves said if a woman buys more vitamins than she had normally been buying and also buys a purse that's big enough to double as a diaper bag, then it's a good sign that she's pregnant. And you think about it, if you're standing in line and the woman in front of you has a bottle of vitamins and a handbag, you don't go, "Oh, well, she's expecting." Right? Like, there's no reason that you would connect, like, vitamins and a handbag to pregnancy. But again when you have data from tens or hundreds of thousands of people and it turns out 7 months after that, all of the sudden this woman starts buying formula and diapers and bottles and baby clothes, then you can track it back and say, "Well, gosh, most of these women after they clearly have given birth, were buying these kinds of things then the fact that you bought those things indicates you're probably pregnant and due in a certain amount of time. So it's this same kind of prediction, but something that we're doing with offline data that companies find really valuable. And a twist on that story that I didn't get time to talk about in the TED talk is that Target market tested this, and people were creeped out by it. Right? That there all of a sudden, before they've even told their family that they're pregnant, they're suddenly getting these coupons for baby stuff. And so Target realized that people thought this was creepy, and their solution was that they would throw in random other products, like, we'll put in a lawnmower and a bookcase and some other things so it doesn't look like you're being targeted for being pregnant. It looks like you're just getting coupons and oh, there happens to be this baby stuff in there. So I thought that was a really interesting response to people saying, "Man, that's creepy." They'd say, "Okay, well, we'll keep doing the creepy thing, we'll just make it not look as creepy."

Dr. Dave: Now the example that you've given, all of that data was collected by Target and in their own database, but it's totally feasible that multiple databases from multiple sources can be combined and searches can be coordinated through that to put together a very complex picture of – maybe getting data from Google and Facebook and Target and some other sources, and being able to coordinate those sources all at once. Isn't that possible?

Golbeck: Absolutely. And the policies of these different companies vary. Some social media companies reserve the right to sell your data. Some of them say that it's protected. The same thing with stores. They may choose to share their data or keep it private. And it's not even that they're always selling it to someone else that no longer has control. A lot of privacy policies talk about third-party associates, which should be like a marketing firm that your social media company or your store could partner with. And they can then take all that data, they're working with, say, Target – I don't know if they do this, but just to use them as an example – working with Target along with all these other stores and they put all this data together where they can come up with much richer predictions and then sell those back to the

companies who gave them data in the first place. So there's a real potential for a lot of this to get integrated in ways that we never expected to find out more about us.

Dr. Dave: Yes, and in fact it makes – and in passing I have to note, we're trying not to pick on Target but it seems like the name is particularly...

Golbeck: (laughs)

Dr. Dave: ...appropriate. Like we're the target and they're (laughs)...

Golbeck: Yeah.

Dr. Dave: ...figuring out how to hit that target. Which is true not only of Target but really of all these big commercial entities. And as a lowly market researcher – one of the other hats I wear is market research consultant, where I do focus groups, I do online focus groups these days, and I've always felt – I felt morally in the clear. Sometimes students have confronted me, saying, "How can you serve big business in this way and so on?" And I've felt, "Well, it's essentially a democratic process where these companies – yes, they want to sell you things, they're not so much trying to manipulate you as figure out what you want, and so I feel good about helping them to listen to you." So that's always been my rationalization. Or rationale. I hope it's not a rationalization.

Golbeck: (laughs)

Dr. Dave: And so one of the things that has emerged – various companies are always hawking to me and other market researchers, new products that we can use to delve into the minds of consumers and to help companies figure these things out. So I regularly hear about and get pitched products for scraping – that's the term that's used – scraping social media. In other words, to be able to for me to go in and look at people's likes and dislikes and so on on Facebook and Twitter and so on across a broad swath of social media and to get a picture of emotional reactions. There are tools that will draw graphs for me. I haven't used any of these tools, by the way, but they're out there and people are using them.

Golbeck: Yeah. I mean, this is a great point. And you raise a couple of interesting things there. One is that we talk about the creepiness and the potential dangers of all this, but the fact is that if you got rid of all of these tools for finding out things about people and doing some personalization, the web would be a lot harder to use. So if we just talk about Google, for example, they filter searches based on where you are. They know your computer's IP address, which they can track to a general area and then they filter searches, so if you search for pizza delivery on Google, you're not going to get pizza delivery for some place in France if you're in New York City. Right? You're going to get places in New York City. There's so much on the web at this point that a lot of this personalization is really necessary to help you get to things that matter. And I think your argument about marketing is the

same kind of thing. That ultimately, you don't want to be showing people things that are totally irrelevant to them. And I often say, I'm 37, single female, and half the ads that I see online from places that know these demographics are either advertising dating sites or fertility treatments, because...

Dr. Dave: (laughs)

Golbeck: ...they assume I must want to get married and have kids, which I don't. So it would be great if I'm going to see ads one way or another, that I would see ads for things I actually want to spend money on. Those don't include dating sites or fertility services, but I spend a lot of money on shoes and clothes, and so show me ads for those. Right? That makes my internet experience better. It makes the spending of these companies better, because they're targeting people who are interested in their products. So it's not that this is all bad, but I think there's still this question of "Should I have any right to say how that data is used?" If I want a bad web experience but to have my data private, shouldn't I have the right to say that? So it's definitely not that it's all bad, terrible things that are happening. A lot of it is really good stuff. But we don't have any control over which way it's used.

Dr. Dave: Yeah. And a lot of it is it's being driven by commerce, but again, to explore the shadow side, it's not hard to imagine governments, not just our government, but governments around the world approaching the computer scientists and the companies that have figured out how to do this kind of analysis and purchasing that expertise for themselves, and then using it as a way to track people, to figure out their political involvements, to figure out who they're hanging out with, applying that same principle, "Well, this person knows this person, who we know to be against our government policies, so we're going to assume homophily," birds of a feather flock together. So that concerns me. And I have to believe that governments are purchasing this expertise for non-commercial purposes.

Golbeck: Yeah, I mean, it certainly seems reasonable that that's true, and I would like to add in here that before I was getting ready to do this interview with you, I took your Twitter account for Shrink Rap Radio and ran it through one of my analysis tools...

Dr. Dave: (laughs) Great.

Golbeck: ...and it happens to have outputted that you have an extremely high score for being worried about things...

Dr. Dave: (laughs)

Golbeck: ...in your emotional style.

Dr. Dave: Really?

Golbeck: So I just thought I'd throw that in there. I can give you a link if you want to post it for your listeners so they can run their own profiles through this tool.

Dr. Dave: Yeah, definitely, I'll put that in the show notes if you send that to me. Well, that's interesting, because the only thing I post on Twitter as it happens are announcements about these interviews, and I don't do any personal tweeting.

Golbeck: Interesting. So it may be that you tend to – this analyzes the types of words that you use, so it could be that there are words about anxiety or being worried in the titles of some of your interviews.

Dr. Dave: Sure, just like this one. The Erosion of Privacy.

Golbeck: Exactly.

Dr. Dave: (laughs)

Golbeck: Yeah, that's right. So that would help aid your worried score. (laughs)

Dr. Dave: Yeah. And it's not totally inaccurate, I mean, my wife would say, "Yeah. Yeah." (laughs)

Golbeck: (laughs)

Dr. Dave: That's a fit. (laughs) Oh, boy. I just heard – and again this may have been 60 Minutes or it was on the news just a day or two ago, about NSA, the National Security Agency – and even people who are relatively in the know are shocked by recent revelations coming out of Snowden and yes, it's coming back to me now, there's a fellow who Edward Snowden has been in touch with, a journalist who's just brought out a book now, and I don't remember the title of the book or the journalist's name, but some of the stuff is revealed in this book, where this kind of cross-cutting analysis – basically what's come out is that NSA is able to monitor all communications about everywhere on the planet much more deeply than anybody suspected.

Golbeck: Yeah. I would say I think you're talking about Glenn Greenwald's book...

Dr. Dave: Thank you.

Golbeck: No Place to Hide, I think is the title. Yeah, he's making the rounds about that now. I am surprised that people are so surprised about this. That's not excusing this, government surveillance is a whole other ball of wax in one sense because that is one place where there are legal restrictions or there are ones that we expected. But we overhear in the Bush administration from people who worked at communication companies saying there's a room and that room has your communications going on one pipe and everything going to the NSA on the other pipe, and there was some

media coverage of that, and then it disappeared, but I took that very seriously. And so when Snowden's story came out, I was like, "Well, yeah, I figured that is what was happening because people were hinting at this since recently after September 11." I think it's a whole other kind of concern for people to have, but at the same time, I worry a little bit less about NSA monitoring than this other kind of monitoring, not because it's necessarily better but because I do believe that the NSA has particular targets. Right? There's so much data that they have there. If they were really trying to keep dossiers on everyone, that would be hard, and I believe that the NSA and the government are primarily interested in targeting terrorists. And even if there are some exceptions to that, if you compare that to marketers or this hypothetical company that I'm setting up or credit agencies, those have the ability to have a really severe and dramatic impact on people's lives if they're misused. And the kind of legal controls that can protect us from government surveillance where we can challenge things don't exist in this private space. And so it's not that I'm letting the NSA off the hook here, but I wasn't surprised that they were collecting this data, and even though they are, it worries me less just because I expect less personal impact – all of these non-government groups who can do similar things.

Dr. Dave: Skype just Skyped you out there for a moment. You were saying something like "I expect less personal impact," was that the word?

Golbeck: Yeah. I expect less personal impact from the NSA monitoring me than I do from these non-government groups monitoring me, because they're really trying to use it in ways that can directly affect my life. If the NSA were directly affecting my life, of course that would be a big deal. And there are legitimate concerns over the government, but I think the day-to-day impact and the number of people impacted by this kind of monitoring outside the government is a lot bigger than the number of people who are going to be impacted by the NSA doing this kind of data collection.

Dr. Dave: Okay. Now Shrink Rap Radio is a psychology-oriented, psychology-facing show...

Golbeck: Yeah.

Dr. Dave: And so I wonder if we can explore that a little bit. I know you're not a psychologist, but everybody to some extent is a psychologist and thinks about psychological things, and it seems to me that many people, especially young people, are taking an "Oh, well, so what" kind of attitude towards the loss of privacy. And I'm wondering not only about the political implications of that but also the psychological implications of that attitude, of feeling like, "Oh well, it's a done deal. I'm not going to worry about it." What are your thoughts about that?

Golbeck: This is an interesting and timely question. I've just started working on a feature article that's going to be in the September–October edition of Psychology Today...

Dr. Dave: (laughs)

Golbeck: ...exactly on this, on the psychology of surveillance.

Dr. Dave: Oh, great.

Golbeck: So if you have any listeners who want to talk to me about how their psychology is affected by this surveillance, they should drop me an email or a tweet. But yeah, I've just started looking into this, and you raise an issue that comes up a lot, which is younger people, like, on one hand are sharing much more than, say, people in their fifties or sixties. And I'm not entirely sure that I buy the argument that they're less concerned with privacy because on one hand I see much more savvy privacy settings among my undergraduates than I do, say, among people my parents' age or even a little bit younger, people in their fifties.

Dr. Dave: Yeah, the younger people could find the settings...

Golbeck: Yeah...

Dr. Dave: ...the older people can't find them. (laughs)

Golbeck: So there's this tension between the young people certainly are putting more online than older people are, and in some places they aren't as concerned about privacy, they say, "Well, it's just online, and it's fine." On the other hand, they have a lot more control over it than older people do. So just because they can find the settings and they're more comfortable with it, so I'll put that out there as premise 1. But premise 2 is that there are people who argue that privacy is dead, that society is just going to learn to become more accepting of the fact that when we were 17 we posted some stupid thing online, or that maybe we had a drug or alcohol problem when we were in college, but that was 20 years ago, they're not going to use it against us. But I think that that's a very naive view. And I do see this naive view in a lot of younger people who are using social media. "It's fine, it's going to be online." Because in addition to this article that I've mentioned I'm also writing a book that'll be out later this year on social media investigations and how you find out things about people online. And I've talked to a lot of – especially family lawyers who do, like, divorce cases, custody cases, about the kind of information that they find about people online and use. And there is no forgiveness in a divorce or a custody case. Right?

Dr. Dave: Mm-hmm.

Golbeck: If you have one person who is paying a lawyer a lot of money to get custody of your kids, they're not going to say, "Well, sure, your ex-spouse may have had an alcohol problem 15 years ago, but we're not going to use that against him in this case." Of course they're going to use it. And the fact is that there have been studies

that show until people personally experience some violation of their privacy in social media, they tend not to be too concerned about it. But then once that violation happens, they tend to have a very strong response to it. You can maybe carry that out one degree. If one of your friends is stalked by someone online, it may make you a little more concerned. But if you're looking at 18 year olds, 20 year olds, it's highly unlikely that they've had one of those negative experiences where things that they've done have been used against them in a really serious way. And I think that's part of this naivete that they don't need to worry too much about what happens with this data that they put online. So I think there's an awareness of privacy concerns but there really – it's hitting home awareness. It's just hard to get that through to people of any age until they have a personal experience, and younger people are less likely to have them.

Dr. Dave: Mm-hmm. Mm-hmm. As I think about the psychological implications, what I come up with is a sense of disempowerment of us – that is – among the people who take the stance of “Oh well, so what, there's not really anything I can do about it, it's the way of the world these days” I think it chips away at any sense of self-empowerment, autonomy, efficacy, and so that concerns me.

Golbeck: And I've heard those kinds of concerns echoed in some of the research I've been doing for this article, particularly when we're looking at, say, celebrities who are followed by the paparazzi. On one hand, like, that's an extreme case of the kind of monitoring that's now possible for all of us, because we're putting so much on social media. There is this case that – where people tend to be more anxious, that they feel like they don't have power or control over situations and it can lead to people having anxiety problems or depression. But it can also lead to a kind of lashing out that we see from some of the celebrities, where they'll punch a paparazzi photographer, or get into some screaming fight or push somebody around. The things that I've been reading show that that comes from this feeling that you just have a lack of power over your life and how things about you are used and shared. And I can see that same kind of issue potentially applying with social media, especially when people that you know are sharing information about you. Right? You could control some of what you post online, but you can't control always what your friends are posting about you online. They may be posting photos of you – I had a friend who posted all these pictures of me as a kid and I was untagging myself immediately because I don't need anybody seeing that.

Dr. Dave: (laughs)

Golbeck: That kind of loss of control, people talking about you, saying things about you, posting things about you, I think you could see some of these similar effects, but it also seems that right now, this sort of issue of this really wide-level surveillance, whether it's offline with surveillance cameras on the street or your purchase history from places like Target, online with social media data that you're uploading, and these inferences that are being made about you, and then also government surveillance, there's this huge space of surveillance. And I think the

psychological community is just starting to get around to looking at that on that big scale and what kind of impact it has on us and how we think.

Dr. Dave: Yeah. You mentioned in passing, and I had been thinking about this, that you can hire private investigators, so to speak, who will do web searches to dig up whatever kind of information you're looking for, maybe for some kind of legal process or hiring or firing process...

Golbeck: Sure.

Dr. Dave: ...whatever. And those regularly appear in my spam box, I try to filter that stuff out. So that's out there as well. What about in terms of trying to avoid some of this stuff? For example, I've recently started using things where I'm trying to prevent making it so easy to track where I'm going all the time, so I use something called Ghostery, which is a plug-in that I use on Google, and it shows me all the entities that are tracking me, and then I can tell it, "Stop this one, stop this one, stop this one."

Golbeck: Right.

Dr. Dave: There's another tool that I've used, sometimes called Privacy Scan. Google offers something called Incognito. What are your thoughts about – is this a productive thing to be doing or not? And how effective is it going to be?

Golbeck: Yeah, so I have I think about 5 of those browser plug-ins installed in Firefox, which is my main browser, that just blocks all of these possible ways that I can be tracked online. It's so severe that I actually have two browsers running at all times because sometimes sites just don't work in Firefox because I have so much privacy stuff installed...

Dr. Dave: (laughs) Yeah.

Golbeck: ...that I need to switch over to a less secure browser. So I think that's a great idea. And I can give you some links and it sounds like you have a few, if you want to share those with your listeners. It just keeps you from being tracked across sites online. It prevents advertising companies from collecting a lot of your personal data. So I think that's a good idea. Another thing that I've started doing, and I published an article on Slate magazine online on New Year's, actually, is that I went through and I deleted not my Facebook account but everything I have ever posted or liked on my Facebook account. And I've had a Facebook page since very early on. I went to one of those few schools that got initial access and so I was right on Facebook from the beginning.

Dr. Dave: Mm-hmm.

Golbeck: I had 30,000 posts, likes, or posts or photos. It took me, like, 2 weeks to get everything deleted. In the article, which you can link to if you want, I explained some of the automated tools that can help with that. But once I did that, since then I have gone through once a week, I'll sit down and just delete everything that's more than 3 weeks old. So I don't have a bunch of likes of Facebook. I don't have a bunch of posts to analyze because how often do you go back in your friends' timeline and look at what they liked 6 months ago? Like, never, right? We use Facebook much more as an instant mode of communication. So there's a few photos that I've kept up there that are older than 3 weeks, but pretty much I clean out anything that's more than 3 weeks old. And that creates this much smaller space of information for any of these tools to work with and that makes it harder for these predictions to work. The more data they have about you, the better it works. So I think it's a good idea to clean out those profiles in general, but if you're really worried about being tracked and you don't want to get totally offline, just keeping the most recent stuff can help. And for people who are really concerned, there's a new book out called Dragnet Nation, which follows this journalist over a year as she tries to protect her identity and she talks about how to create these randomized passwords and fake identities and how she tracked down this information people had about her. So that would be a really interesting book to take a look at if people want to see just how hard it is to really anonymize your interactions with the web.

Dr. Dave: Yeah. I'm lucky that I was able to find you and get your email address...

Golbeck: (laughs)

Dr. Dave: ...to invite you. If you hadn't been attached to a university, I think I really would have had a problem.

Golbeck: I'm pretty Googleable, but I like to keep control over all the information that I have out there.

Dr. Dave: Yeah. Now, this is a little bit aside from our main focus, but boy, the internet is just seeming so unsafe these days, in terms of passwords and credit card data and so on. I have a Target credit card. For all I know, my data was compromised. And the password situation – I mean, it's crazy that we're supposed to, like, have totally random passwords that we generate for ourselves and so on that you can't remember. But that's totally inconvenient. And where is this going to go? What's the solution? We've become so dependent on the internet that I feel like there's tremendous national vulnerability. We'd been talking about our personal vulnerabilities but now we know that we're looking at various kinds of cyberwarfare that's even being engaged in a cold war scenario even at this moment. And our power grid, our hospital system, our water, everything is – our financial system, it's all in this precarious web, it seems to me.

Golbeck: Yeah, I think that's right. I just read this article that compares programming on the web to – if you were building a bridge and you just have all these parts stuck

together and you hope it works and one's going to fail everyday and so you'll go in and you'll do some quick fix, like, no one would ever drive on that bridge. But that's totally how the web is put together, where we don't really know how all this code works and all these security mechanisms work, and we keep trying to patch the holes that we find but it's just so hard to engineer software from the ground up that's secure because people keep finding new ways to break into it.

Dr. Dave: Hmm.

Golbeck: So I agree that there is this huge vulnerability, and there's two parts of it. One is if you look at the Target data breach that happened around Christmas, where all these credit cards were stolen, that didn't have anything to do with one individual's password, but it had to do with this – basically virus that was installed that allowed it to spread through the company and there was a very poor corporate response to that. But then there is this other side of us as humans have passwords and we can't remember 200 randomly generated passwords that oh, also we change every 6 months. Not everyone wants to use a tool to manage all their passwords, and by the way, someone could break into that also. So I think there's two parts. One is that from an individual human perspective, so many of the security measures that are out there, whether it's passwords or otherwise don't take our psychology and cognitive abilities into account. We're supposed to do all of this stuff that's just totally unreasonable given how our brains work. And so we need to think about better ways to do that. The iPhone is a great example, right? You don't have to put in codes or passwords anymore, you can just scan your thumbprint and that's so much easier. And actually, it's quite secure. You can technically break into it but somebody needs a scan of your thumbprint which is a lot harder to get than your 4-digit code or your password. So I think we need to do a lot more in that sense of making it easier for humans to handle security. But on this higher-level infrastructure side, I think we're just starting to get to the point where the internet is this critical component of so many of the systems that we interact with. That I think we're going to start seeing a lot more guidelines and potentially laws that are going to regulate it so we do get proper corporate responses. We do have people thinking seriously about security outside of the IT guys who are paid to think about security, but again, this is a space that has just evolved so rapidly. You compare how long we've been doing business to how long we've been doing all of our business online. It's this tiny little speck of time. We haven't really caught up to the sophistication that's required to do that securely and well. And I think the more of these scary incidents we have, the more people are going to start thinking about it in a secure way, but I think we've got a lot of years to go before we really catch up to it.

Dr. Dave: Well, I'm really glad to discover that somebody with your training and background is interested in looking at these larger personal and societal implications and it sounds like that's becoming your mission.

Golbeck: Absolutely. Absolutely.

Dr. Dave: Do you find that in the professional organizations that you belong to, particularly in relation to, maybe not so much academia but computer science, that ethical considerations are discussed?

Golbeck: It's interesting, so – one of the projects that I'm working now actually in the university is funded by the NSA, which has – we've come in the news to talk about, like, all the security violations coming from there. And they're actually funding work within the university for us on these issues of making security more usable for humans and understanding the human side of this better so people can be more secure. And I think we're starting to see that across the board, within government, and within industry, and within security organizations who typically said, "People are the problem with security." Like our systems will be so much more secure if we didn't have people involved.

Dr. Dave: (laughs)

Golbeck: Which is just so unreasonable because people are always involved. We're now starting to see this realization that okay, like, not only are the people involved but we've got to find a way to get them actively invested in this and that means not treating them like they're stupid and that they're the problem, but finding out what their needs are and what their abilities are and designing around that. That awareness is really starting to emerge and to be considered a really important part of this research as much as encryption algorithms and security protocols. So that gives me a lot of hope that this is something that's going to be increasingly taken seriously and thus treated better. We'll do better with it.

Dr. Dave: Okay. Well, boy, let me know when your new book comes out.

Golbeck: (laughs)

Dr. Dave: I think now we might...

Golbeck: I will, it's due out, I think, right after the new year. So...

Dr. Dave: Yeah, we might need to talk again.

Golbeck: That'd be great.

Dr. Dave: Because you are a great guest. And so as we wind down here, is there anything more that you'd like our listeners to know that maybe we haven't touched on?

Golbeck: So I think we touched on a great broad spectrum here, and what I would say is don't be too paranoid because there are – all of these things we're talking about are kind of scary, but so far there's not a lot of terrible things being done, so don't be paranoid, but be aware and concerned. Think about where your comfort level

lies. Are you really that concerned that J. Crew knows that you want this new pair of shorts that they just came out with? Like, is that a terrible violation of your privacy? For some people they really don't want that kind of thing analyzed, for other people you can say, I'm not going to spend all my energy fighting against some targeted marketing. Right? Find out where your comfort zone is and then put a lot of effort into protecting those things that you really want secure, and then don't worry too much about the creepiness factor when it's not something that you feel is actually violating your privacy, if that makes sense.

Dr. Dave: Okay. Okay, I could have some more questions on the heels of that...

Golbeck: (laughs)

Dr. Dave: ...but I won't go there. Instead I'll just say Dr. Jennifer Golbeck, I really want to thank you for being my guest on Shrink Rap Radio.

Golbeck: This was so much fun, thank you for having me.