

Shrink Rap Radio #434, December 18, 2014, Science and Pseudoscience in Psychology

David Van Nuys, Ph.D., aka “Dr. Dave” interviews Scott Lilienfeld, Ph.D.
(transcribed from www.ShrinkRapRadio.com by Mariana Naldi)

Excerpt: *“I think there is often a kind of murky middle ground between science and pseudoscience ...To me the fundamental difference, if there is one, is that science is a relentless attempt to try to compensate and control for confirmation bias, which is the bias that all of us, myself included, are prone to. Confirmation bias being a tendency to seek out information that is consistent with what we believe and sometimes want to believe and deny, dismiss, or distort information that is inconsistent with that belief...But it’s an effort to try to find ways of compensating for controlling for confirmation bias in a way that makes us more likely to avoid mistakes; hopefully more likely to find out the truth. In pseudosciences I think you’re more likely to see a failure in many cases to control for confirmation bias, to implement the safeguards of science.”*

Introduction: My guest today is Dr. Scott Lilienfeld, who is the Samuel Candler Dobbs Professor of Psychology at Emory University in Atlanta, Georgia and editor of the 2014 book, *Science and Pseudoscience in Clinical Psychology*, Second Edition. For more information about Dr. Lilienfeld’s background, please consult our show notes at Shrinkrapradio.com. Now, here’s the interview.

Dr. Dave: Dr. Scott Lilienfeld, welcome to Shrink Rap Radio.

Scott Lilienfeld: Thanks very much. It’s a pleasure to be here.

Dr. Dave: Well, I’m really happy to have you on the show to discuss the impact of science and pseudoscience on psychology in general and clinical psychology in particular. Perhaps a good place for us to start would be to have you give us your definition of science and pseudoscience and how one can distinguish between the two.

Scott Lilienfeld: Well, it’s a tough question. It’s a good one. It’s one I think the field struggles with, and I should say before I dive in too much into it, that there’s I think a lot of dispute even amongst philosophers of science about what science is and what pseudoscience is. So, I’ll give you my own view. My own take is that the difference between science and pseudoscience is probably more one of degree than of kind. I think there is often a kind of murky middle ground between science and pseudoscience because certainly there are lots of scientists who do pseudoscientific things and there are lots of pseudoscientific researchers and therapist who will often behave, think, and act scientifically, but to me there is still a difference even though it’s more one of degree than kind. To me the fundamental difference, if there is one, is that science is a relentless attempt to try to compensate and control for confirmation bias, which is the bias that all of us, myself included, are prone to. Confirmation bias being a tendency to seek out information that is consistent with what we believe and sometimes want to believe and deny, dismiss, or distort information that is inconsistent with that belief. Again it’s a bias we’re all

prone to and to me, if you look at the history of science, it's a continual effort and never a totally successful effort because science being created by and performed by human beings is inherently fallible. But it's an effort to try to find ways of compensating for controlling for confirmation bias in a way that makes us more likely to avoid mistakes; hopefully more likely to find out the truth. In pseudosciences I think you're more likely to see a failure in many cases to control for confirmation bias, to implement the safeguards of science. So for example, in psychology and psychotherapy we used randomized control trials or systematic within-subjects design to try to minimize error, particularly confirmation bias. In pseudoscience I think we are somewhat less likely to see those kinds of safeguards and to me that's the fundamental difference. I think also several warning signs to look out for that may alert us to the fact that something may be pseudoscientific, so for example: If the proponents of a discipline often do not self-correct after mistakes, that is keeping the same claims despite errors. If they make extraordinary claims that go way beyond the existing evidence, that's also a sign. If they do not emphasize replicability of results, that may be an indication. If they rely more on anecdotes or testimonials than on systematic sources of evidence, that's an important sign. If the claims are difficult to disprove, difficult to falsify, that is they would be consistent with any potential source of evidence, that's also something to look for. So, I see all of those as potential warning signs to keep in mind when one is evaluating whether or not a claim is something that's plausible or potentially scientific. Or whether it's pseudoscientific and rather less plausible.

Dr. Dave: Well I'm glad to hear you acknowledge that there, that is kind of continuum and that there is sort of a gray, murky area in the middle because I was, because I agree with you. And if you took a black-and-white position I was prepared to kind of test your religion a bit on that.

Scott Lilienfeld: [laughs] Yeah, that's right. I think there are, relatively few things in this world are some, but there are relatively few things that are black and white. I think though one doesn't want to make the opposite mistake, I think which sometimes I see too, which is for people to say because there is no black-and-white difference, therefore it's not worth making a distinction as S.S. Stevens, a famous psychophysicist pointed out. There's probably no clear demarcation point between day and night, but that doesn't mean we that can't usually tell the difference 90% of the time, whether it's day or night.

Dr. Dave: Yeah, that's a good point. And in regard to the confirmation bias, when I was in graduate school or maybe undergraduate psychology, you know a big deal was made about how scientists test a hypothesis and if it's disconfirmed then they let go of it and they move on to something else. But, it seems to me that in practice that's often not how scientists behave, that they have some kind of an intuition or idea, you know, based upon their study of the field and their years of experience. And they have this inner conviction of "By God this is how it is." And they just keep researching and researching and researching instead of letting go of the hypothesis or letting go of the larger idea. They cling to it. And you know, until they find a way to demonstrate it. Or else they don't.

Scott Lilienfeld: That's right. I agree with more or less what you said. I think that that's when something's called a strong inference model of science. You do one study and if the findings don't come out the way you want them to or expect them to, you drop it and move onto a different model. That's right. That's the way some people see science. I think you're right that in

practice, one almost never sees that. And many people, myself included, would argue that I'm not sure we should operate that way in science, because after all, especially in fields like psychology, there often are multiple interpretations for negative findings, right? So negative findings could mean your core theory is wrong, but could mean maybe you didn't measure things correctly or maybe your sample size wasn't quite right or maybe your participants misunderstood the instructions or in a psychotherapy study maybe the therapy wasn't delivered ideally and so on and so forth. So, if a theory has what is sometimes colloquially called "a lot of money in the bank," if it has a good track record, previously corroborated findings, if it's done pretty well in the past, it might actually be a bad idea to suddenly drop it after one result because after all some of scientists intuitions about their theory, may in part be based on the previous track record of good results. They've been using therapy for a long time and been doing studies on that therapy and had very good results in previous control trials and then there's one negative finding after 20 successful findings. There might be a good reason to say, well, you know, maybe we should take another look at this before we move on to something else. I think, the tougher issue, which I think you raise is when do you move on? When do you drop an existing theory? I don't think there's any clear guidance to that question. I'm not sure there is a simple answer. I do think though that what we can say is that confirmation bias might be somewhat useful in the very early stages of scientific investigation. Maybe when you're trying to see whether or not you might be right, it might be good to be a little bit persistent and dog it and say, well, you know I've had one or two failures, but I'm going to keep trying. But, there comes a point when the evidence becomes so overwhelming that you have to begin to at least question yourself and ask, am I perhaps wrong about this? And I think that's part of what the scientific attitude is about. I think it's one thing to say you know, the data are not supporting my theory and be open about, but you know what, I'm going to keep investigating this anyway, even though I don't think there is great evidence for my theory. That's okay. That's a choice scientist sometimes make. It may not always be a bad choice. What I don't think is permissible, and then there's Hungarian philosopher scientist, Imre Lakatos, who wrote about this, what's not permissible is to say, you know what, I'm not gonna even take a look at these negative results. I'm going to pretend as though my theory or my model of therapy is in great shape when it's not. That I think is not permissible. It is permissible to say my theory isn't in great shape. It's not working out very well, but I'm going to keep investigating it because I have a conviction or intuition that there is something to it after all. That's okay and there have been cases in science where that kind of thing has panned out.

Dr. Dave: Okay, well I was looking through the books on Amazon.com that you have written, edited or co-authored and I see the following titles, "Science and Pseudoscience in Clinical Psychology." And you just recently brought out the second edition of that with lots of, that was an edited volume, with lots of contributors. And then you've got one called "50 Great Myths of Popular Psychology: Shattering Widespread Misconceptions about Human Behavior." And that looks like a fun one. And then you've got "Brainwashed: The Seductive Appeal of Mindless Neuroscience" which is I think a very current and contemporary and something that we'll talk about a little bit. You seem to be on something of a crusade about the evils of pseudoscience, particularly in relation to psychology. Is there a story perhaps about what got you started in this direction?

Scott Lilienfeld: Yeah, that's an interesting question and I would, at the risk of a little bit of self-promotion if that's okay? I'm also proud of a book that we did, so one of the ones I'm most proud about is one that actually focuses on the positive side of psychology. So we also wrote a book called "The Great Ideas of Clinical Science." I coedited that with my friend Bill O'Donohue, seventeen principles that every mental health professional should understand." So, we felt very strongly that it's important not just to dispel ideas that aren't very good or debunk, but also to say what is good and what is well-established.

Dr. Dave: Oh, good.

Scott Lilienfeld: So, yeah, so we've done a bit of both and we have another book called "Great Readings in Clinical Science" where we do the same thing. But, you're right. I think we certainly, in our work and that with my colleagues, we've tried to focus quite a bit on reducing error. I think that, one of my own feelings about this is that as a field, in psychology, we have not focused enough on being self-critical and I'd say I think I probably was in that same boat myself when I first started this field. And I'm a pretty strong believer that the heart of science is a relentless self-criticism. And some of that means criticizing other people, which sometimes means stepping on peoples toes. It also means taking a good hard look at the claims you've made and the research you've done. And being willing to admit that you might be wrong about something. It's a hard thing to do.

Dr. Dave: Was there something that sensitized you to this issues?

Scott Lilienfeld: I'm sorry, David?

Dr. Dave: Was there something that sensitized you to this issue, something-

Scott Lilienfeld: Ah, you know was there-I would not be, so I thought about that a bit. I would not say there was one specific event that sensitized me. I think what...what probably sensitized me over the long haul is that I, before I got into psychology, I think I had a bit more of an interest in science in general and maybe more of the natural sciences. So my first love was actually astronomy and I also was very much loving paleontology. I was also initially thinking about going to medical school and kind of loved zoology and biology and so on. When I got into psychology I really fell very much in love with it. I think it's, I tell my students still, it's a love affair I've never gotten over. I still love psychology. I'm very glad I went into it, but I think I became somewhat disenchanted in my undergraduate years and my beginning graduate years too in the status in the field. I was somewhat surprised in some cases and somewhat dismayed by what I saw, what I thought I saw was a tendency for a field to latch on to lots of fads and get very enthusiastic prematurely about certain claims, before the evidence was in.

Dr. Dave: Yeah.

Scott Lilienfeld: And I think was also swayed me quite a bit even more, was in the 1990's, which I think coincided with a lot of my interest in this topic, were the recovered memory wars where I saw a lot of therapists behaving in ways that I found very troubling, both scientifically and ethically. And became pretty familiar with a lot of these cases and met a few of the

individuals involved, and was again, disturbed and saddened. And I'm saddened by what I saw in terms of a personal impact on individuals and it also saddened me as a field because I felt that that was a period of time when our field was not sufficiently self-critical. And when critics voice concerns, rather than trying to address those concerns, I saw a number of people circling the wagons and try to defend our field against criticism from the outside. So, all of those things, I think, inspired to, make me interested in the topic and also make me convinced that healthy criticism is actually the sign of a good field. That fields that are in good shape, scientifically and ethically, are secure enough to take the criticism. Fields that are not, I think often, tend to circle the wagons and react negatively and somewhat defensively to external criticism. I think unfortunately clinical psychology is sometimes still, a little bit stuck in that mode.

Dr. Dave: Okay, now the forward to your book suggests that there has been a long history of people embracing pseudoscience and a number of examples were given, going way back in time. Perhaps you can hit some of the high points of that history? Or maybe I should say low points here.

Scott Lilienfeld: Yeah, sure. Exactly. Right. So, the forward is written by my friend Carol Tavris, who is actually a social psychologist. And yes, there has been a lot of history in psychology and psychiatry of false beliefs, many of which have been quite harmful of course. So, and it's not just psychology that is subject to this. Some would argue that in psychiatry it's just as bad, if not worse. I mean if you look at the history of what was tried in psychiatry and other areas of medicine, in the past of course things like bloodletting, which probably killed our first president, George Washington, and leeching, and blistering, and all other kinds of things, spinning people around in chairs, putting people in tranquilizing chairs. These things were thought to be fairly effective treatments for psychological maladies and bloodletting, of course, for some physical maladies as well. Prefrontal lobotomy, of course, was one of the worst mental health fiascos of the 20th century, but people forget that the prefrontal lobotomy earned, Egas Moniz, a Portuguese neurosurgeon, who really was the major person who introduced it to humans, the Nobel Prize in physiology or medicine in 1949, for developing prefrontal lobotomy. So these were beliefs that were widely held by lots of smart, very well-educated people. They were wrong and they did great harm. And I think it's important for students to be able to look back at these beliefs because it could very well be that certain things we're doing today, some people have argued that's true with certain medications, I don't know whether that's true, but some people made the argument, maybe in the fifty-odd years, look back in much the same way. We may ask ourselves, what were we doing? What were we thinking? And the temptation, I think, is to look back at some of these practices and giggle or laugh or say how silly these people were, but we have to remember they were just as smart as we are. And the difference, though that they did not, at that point, have as much a) background knowledge or b) knowledge about scientific methodology to help them rule out alternative explanations.

Dr. Dave: Okay, again in the forward to the book, there's a list of a number of widely held beliefs promote by many psychotherapists that have been discredited by empirical evidence. And some of the ones mentioned in the forward are that subliminal messages influence behavior. I think I might still believe that from the original Vance Packard book. [laughs] You can-

Scott Lilienfeld: [laughs] Well, yeah, admittedly, in fairness there is some controversy about whether subliminal messages might influence very short-term behaviors like thirst or hunger or things like that, a bit of a mixed literature. What do I think that seems to be pretty clear is that subliminal messages can't make one, for example, decide to buy a product in the long-term that one wasn't intending to buy or change one's political beliefs about a candidate or things like that. It's pretty clear if there are effects there seems to be very slight and they're probably very short-term if they exist at all.

Dr. Dave: Yeah, that's really fascinating and somehow that message hasn't made it out into the world at large.

Scott Lilienfeld: It sure hasn't. Nope.

Dr. Dave: Which is part of your quest and there are already, also mentioned here, children who masturbate or play doctor have probably been sexually molested.

Scott Lilienfeld: Yeah. And there's a broader worry about that, of course. So are people looking for signs or indicators of sexual abuse, sexual molestation, that may not always be very well-supported empirically and that's of course the kind of belief that can do great harm.

Dr. Dave: Yeah. Another one here is, if left unexpressed, anger builds up like steam in a teapot until it explodes in verbal or physical aggression.

Scott Lilienfeld: Yeah, that sort of, you know, comes very much out of the Freudian model, right, that anger is a bit like a uhm, yeah, it's sort of that way. It builds up and then we have to release it or else it's going to, we're going to explode. And I just don't think anger works quite that way. In fact, if anything, most literature suggests that expressing anger fuels the flames of anger, rather than reduces them. Probably because for most of us, myself included, when you get angry, you get angry about the fact that you're angry. So we humans are thinking organisms, so we react to our previous thoughts. So, anger is an aversive emotion. So when you get angry it's not fun to be angry. So, that in turn makes you angry because you got angry. [laughs]

Dr. Dave: [laughs]

Scott Lilienfeld: And then in turn you get angry about that, so it just kind of builds on itself.

Dr. Dave: Yeah.

Scott Lilienfeld: So, in most cases, it's not to say, and again, there's, I think, a curl of truth in this misconception. It's not as though if you're angry you should just let it simmer. You want to deal with it of course, but the best way to deal with it is by being assertive, as we know. And here's an area where psychotherapists, I think, have been enormously helpful in terms of assertiveness training and so on. Albert Ellis did a lot of wonderful writing on this too, is appropriately address the source of the anger and that's a good healthy way of getting the anger out. And also addressing the actual origins of the anger rather than just hitting a pillow or yelling at your dog or something like that.

Dr. Dave: Yeah. Another clinically relevant one listed here is projective tests like the Rorschach validly diagnose personality disorders, most forms of psychopathology, and sexual abuse.

Scott Lilienfeld: Yeah, well I've made some enemies...Carol Tavris wrote the forward, but I would agree with Carol on that one. I have made some enemies by saying that, but I think the Rorschach inkblot test is useful for a couple of purposes, but I think it is another example of where we have often made claims that go beyond the data. Now again, sometimes, and in fairness, there are some psychologists who have made the opposite mistake and said the Rorschach is useless. It's not valid for anything. And that's not right either. I think the Rorschach is okay. It's not great, but I think it's okay for detecting thought disorder and thinking disturbances that we might see in Schizophrenia and sometimes in Bipolar Disorder. But, I think for detecting personality traits like impulsivity or anxiety or oppositionalism or disorders like psychopathy, psychopathic personality or depression or posttraumatic stress disorder, I don't think it does very well. It may do a little bit better than chance for detecting depression, but not especially well. And I think using it certainly as a stand-alone measure is not very good. But, even there, some people will say, well no one uses it as a stand-alone measure. We only use it in the context of other measures, but even there it's not very clear how much it adds, above and beyond better validated measures for detecting depression or PTSD and the like.

Dr. Dave: Yeah. On Amazon.com I was able to read through the chapter titles for your book about 50 popular misconceptions that psychology and it was quite an interesting list. What are your one or two top ones from that list-[laughs]

Scott Lilienfeld: Well, that's a tough one. You know that was probably one of the most fun books we wrote. In fact one of the hardest things was getting it down to fifty. [laughs]

Dr. Dave: [laughs] Yeah. Wow.

Scott Lilienfeld: There are so many of them. Do I have a favorite, I don't know. I think the ones I get asked about the most are, ones that I think to a lot of people are really intuitive. So, the one I probably get the most email about, questions about, people disagreeing with me about is the belief that there is what is sometimes called the Lunar Lunacy Effect, that there are more weird strange things that happen during the full moon. Lots and lots of people insist that that's true. And I've gotten a lot of emails from people who have said something like this, "well I read that chapter in the book. That was interesting, but it's not right. [laughs] Because I'm telling you that there is more weird things that happen during a full moon. I don't believe what the research says. It definitely happens." And I suppose it's possible they're right and all the studies are wrong, but there have been probably 50 or 60 studies, maybe more now, that have looked at this issue and have found essentially no correlation there to begin with, so there's no correlation to explain, because there's no effect that anyone's been able to, statistical effect that any has been able to find. Is it possible that it will be found eventually? It's possible, but, at the very least, it's safe to say that if there is a correlation, it must be very very very small, because no one can seem to detect it. But, I think part of the reason we are very prone to that myth and we point down the book, that as a common source of psychological myths in general, is that we are all prone, myself included, to selective perception. So, when there is a full moon and something weird happens

and like if someone acts in a fashion that is psychotic, or there's a crime or if there's a suicide or some attention-catching event, people will tend to remember it. They'll say, wow, you know I remember there was a full moon that night and there were several murders. Or there was a full moon that night and I saw several people walking down the street acting strangely. They'll remember that, whereas when there is a full moon and nothing happens, people don't pay attention to it. People forget about that. They say it's a memory. So, as a result, we tend to perceive a correlation that is not there.

Dr. Dave: Well, I have to wonder how that got into the culture in such an authoritative way. And I would almost, almost claim that I seem to remember reading it, in my intro to psych book-

Scott Lilienfeld: That's scary.

Dr. Dave: ... Which would have been oh forty years ago, you know. So it's been a lot of time. Maybe all the research showing that it's not true have happened in the last 40 or 50 years.

Scott Lilienfeld: Well, I'll tell you, there is an interesting hypothesis, which I, may sound a little off-the-wall, but actually, I think it's, I have to confess when I first heard it, I was a bit dubious, but I read about it and I started to think maybe it's true. There's someone named, Chuck Raison, he actually used to be here at Emory, I think he's now at Arizona. And Raison wrote an interesting historical article where he claimed that that correlation may have existed once. Now, it's not causal, but he argued there may have been a correlation once before the advent of natural lighting. So, before there was natural lighting, historically, he argues, that a number of people with Bipolar Disorder imparticular, to some extent, epilepsy and some other conditions, who often have trouble sleeping, so people with Bipolar disorder, as we know, don't often, uhm, don't need much sleep and they're often awake a lot at night. He produces some historical evidence suggesting that a number of individuals with that condition, before there was natural lighting, would often be hanging out at night and when there's a full moon, of course, it was much brighter. So people would often congregate in public places when there was a full moon. And then people might have seen that and then noticed that, wait a minute, there's a full moon and people are acting strangely. So, it could very well be that at one time there may have been a correlation between these two events.

Dr. Dave: I would call it-

Scott Lilienfeld: That's quite fascinating.

Dr. Dave: Yeah. Not to dwell too long on this rather minor point, but I seem to recall reading reports that stated that this belief was based on reports by police departments who tracked crime and that they found that there was more crime, rather than individual's thoughts, that it was based on looking at police records.

Scott Lilienfeld: Yeah. Right. So, people have actually looked at that too. There have been some systematic studies that have looked at whether or not there are more crimes, more homicides and so on during full moons. And those studies have not found that link, nope. It is true that there are some police departments that put more cops on the beat when there is a full moon. So I suspect,

you may have what psychologists and epidemiologists call detection bias. If you put more cops around, they're going to start seeing more things, right? But if you actually measure objective crime, there's no difference.

Dr. Dave: Okay, well let's bring this home to clinical psychology. What's been the impact of pseudoscience on clinical psychology? Are there particular negative examples that are persuasive to you?

Scott Lilienfeld: I think pseudoscience is important for all clinical psychologists to know something about, because I would argue that if we're not careful, some false beliefs can be harmful. So, I mention recovered memories. Now, there is still some scientific dispute about whether or not certain recovered memories of abuse could be legitimate. And I think it's possible that some might be, I have to confess I'm not convinced of it, but it's possible. Again, it's very hard in science to prove a negative. But, what we can be pretty confident about, I would argue extremely confident about, is that certain highly suggested practices such as leading questions and hypnotizing people and asking them about whether they might have been abused or using guided imagery to get them to think about past abuse and so on, that in highly suggestible individuals, those kinds of practices can lead to false memories of abuse. And I would argue that there are clear-cut cases where that has happened and have really damaged people's lives, both the accuser and the accused. And I think that's been very tragic. I think it's give our field a black eye. And I think more important it has also damaged the lives of many many people, including those people, by the way, who experienced the memories themselves. I realize that's a controversial topic and one has to deal with it sensitively, but I also think that we, ? clear-cut evidence that this, that these kinds of practices can happen and do happen and that they were particularly widespread in the 1990's although they have not entirely gone away today. There are many other examples in our field where we have engage in practices that are harmful. Another example is facilitated communication for autism, which again, I would argue is the case where pseudoscience has gotten us in big trouble. But, for listeners who don't know about it, facilitated communication was imported from Australia into the United States into the early 1990's at Syracuse University primarily, but began to spread the claim there was that individuals' with Autism Spectrum Disorder, as it's now called, in fact are quite capable of communication, they just cannot speak well, most of them, because they have, in essence a movement deficit called developmental dyspraxia which prevents them from articulating words. It also prevents them from typing independently in many cases. And the claim made is that with the aid of a facilitator who offers a little bit of gentle resistance and support to the child's arm and hands, the child can suddenly type out sentences and words. And when this first appeared in the early 1990's, in the United States people were stunned. It appeared to be the case that folks with autism, many of whom had IQs estimated in the 20's or 30's or 40's were now able to communicate at a level you and I ae able to communicate at and sometimes higher-

Dr. Dave: Yeah. I remember seeing that on 60 Minutes or Twenty-Twenty, one of those TV magazines and-

Scott Lilienfeld: Both. Yeah.

Dr. Dave: You know, wow, this is fantastic. But, later research showed that, what, that there was sort of an unconscious, physical communication from the person whose holding the arms that's affecting what's being typed?

Scott Lilienfeld: That's exactly right. It's colloquially called a Ouija board effect. The technical term is an ideomotor effect. Ideomotor because our ideas can control our movement, it's something that we're all susceptible to, myself included. So, and what's stunning about this is that most of the facilitators, I would suggest the overwhelming majority, were well-intentioned, were sincere, well-meaning people who had no clue, no idea that they in fact were the people who were doing, in effect, doing the typing, and not just offering support, but were in fact actively guiding the child's hands and fingers to the intended keys. And again it's an effect a lot of people find difficult to believe, but again if anyone's done a Ouija board, one can easily see how one's ideas and thoughts can inadvertently effect one's movements and motions. Again, why this is dangerous, well it lead also to dozens and dozens of accusations of abuse, solely based on facilitated communication.

Dr. Dave: Oh.

Scott Lilienfeld: That is the children and adolescents who were engaged in this practice were in some cases accusing their parents and other caregivers of brutal sexual and physical abuse. Some individuals were jailed and separated from their families. There was a fairly recent case in mid-2000s of a family outside of Detroit, the Windrows, you can read about that was a tragic example of this. Where the father, and to a lesser extent, the mother were put in prison solely on the basis of facilitated accusations of abuse. And even in cases where there was not abuse, this was an intervention that greatly increased the hopes of many parents and other caregivers and then tore them down in a way that I think was actually quite cruel.

Dr. Dave: Yeah.

Scott Lilienfeld: So these are just a couple of examples, I think, of where pseudoscience and in psychology can do great harm if we are not careful.

Dr. Dave: Yeah. So, it follows, I guess, in a way, that you are a strong proponent for evidence-based psychological treatment. From your point of view, why is that important? I know it's been controversial in therapy-

Scott Lilienfeld: -Evidence-based treatment is controversial. I would argue it should not be, although I understand the reasons for it. I mean, maybe one reason it's controversial is it could be that we haven't always self-included, articulated clearly enough the rationale for I think that, to me, evidence-based practice means practice that is guided on the best available scientific evidence. It doesn't mean it is always right. It doesn't mean it is sacrosanct. It doesn't mean it will not be overturned eventually. It just means that we have a scientific and ethical obligation to practice on the basis of the best available evidence. And what that means is using research designs that have the best chance of reducing error. And that I think is a movement that has been quite well-accepted in medicine and dentistry and other fields. And I think it is slowly, but surely catching up in psychology. And I think it's beginning to transform practice. Now, there's a

couple of understandable misunderstandings about evidence-based practice. I think one misunderstanding is that somehow we can't innovate or we can't try new things. And I don't think that's necessarily the case. I think evidence-based practice certainly allows for innovation with new treatments, but I think it also requires us as therapists to make clear when we are trying something new. And to give some informed consent and to let our clients know when we are doing something that's experimental. It also forces us, I think, to adopt a burden of proof. Which is if we have a client with a particular disorder, for which there is evidence-based treatment, a treatment that's been shown to work fairly well in control trials, I think the burden of proof on us is to explain why we are not using it. And there may be cases where we are don't use it and we might want to, in some cases, deviate from the existing protocol. But again, I think the onus of evidence is on us first to show that. I think the other misunderstanding is that evidence-based practice somehow requires us to adopt a cookie-cutter approach to therapy where we have a very strict manual and we can't deviate from it. And I don't think that's typically true. I think most of the manualized treatments out there allow for a certain amount of flexibility as they should. But, there's at least some evidence out, I don't think it's overwhelming, but there's some evidence it's too rigid and adherence to protocol may be harmful. So, we probably want to find a middle ground. We probably want manualized treatments that describe a certain general direction of approach and tell us exactly what to do without being overly prescriptive and tell us exactly what to do next and so on. But, I think in general, evidence-based practice, although it's not perfect and it's fallible, I think, it's our best chance, I think, of reducing error and proving client outcomes. One big advantage to evidence-based practice, I think, distinguishes it from classically pseudoscientific approaches is that, at least in principle, it is self-correcting. So if it turns out that there are therapies that we didn't think worked that now do work we can add them to the list. Now one criticism, and this is a good one, I think, and this is a harder one to answer, is if I could name a ?, can I name any treatment that was thought to be evidence-based that's been taken off the list. That's a harder one, right? And that speaks to the difficulty of finding big differences among different psychological treatments, which is another controversy in and of itself. But, it could very well be we are not subjecting these treatments to the careful enough scrutiny and then maybe allowing too many of them to be called "evidence-based."

Dr. Dave: Well, is there in fact a list? You used the word lists and it made me wonder if the APA or some other group has actually created a list of evidence-based therapies.

Scott Lilienfeld: Yes, there are several different lists out there. So there's a difference, and it gets a little subtle here, evidence-based practice, I would argue, is a general approach to psychotherapy, that involves integrating the best available evidence with things like clinical expertise and planned preferences. That's the typical way it's operationalized. But there are certainly lists of empirically-supported treatments, empirically-supported therapies or ESTs that basically get at the research aspect of evidence-based practice. So, yes, Division 12, the Society for Clinical Psychology of the American Psychological Association, keeps a running list of ESTs, empirically-supported therapies, that are a part of a general approach to evidence-based practice. And Division 53, I think, I believe that's what it is, Child and Adolescent, also keeps a list of treatments that have been shown to work pretty well for children and adolescents. And those lists are available on the web and they are continually updated, maybe not as much as they should be, but consumers and therapists can look to those lists to find which treatments are listed as ESTs. And again, my stance on this, which I've sometimes been criticized for, is that, so I

should be clear what I believe and what I don't believe. Sometimes people have accused me of saying, "Well, if it's not on the list, you can't use it." I don't necessarily believe that. I think there are times and places where again you have to deviate from the protocol. But, my stance is simply that if you have a clear-cut disorder for which there is a pretty clear-cut ESTs, empirically-supported therapy, the default assumption should be that you're going to use that treatment. And that you have an obligation to use that treatment. Again, there are there are invariably going to be cases where the client doesn't respond to that treatment, the client doesn't want that treatment, and there may be cases where you then have to consider other options, but in general I think those lists provide hopeful guidance to therapist about what kinds of treatments should be first choice options.

Dr. Dave: Okay, you know I've interviewed other people around this issue of evidence-based treatments and some of the points that have come up that have kind of given me pause-for-thought are that, that you can't say for example, large sample double-blind randomized trials, for example, cost a lot of money. And if somebody...and often that money is going to come from big pharma because who else has the deep pockets to do that? So unless there's a large kind of political constituency that can help generate funding for that, then those are the ones that are going to be able to rise to that criteria. But that for sort of smaller, newer, innovative approaches, they don't have that money. What are your thoughts around that?

Scott Lilienfeld: Well, a couple things. First, a couple of reactions. At first, I would argue that one could never really do, unfortunately, a true double-blind study of psychotherapy. That's one of the sad truths of our field, right? We can never be truly blind to therapy where we are giving.

Dr. Dave: Well, that's true.

Scott Lilienfeld: Yeah. So unfortunately, we can't have the same model as our colleagues in psychiatry. I think the big pharma criticism is a potentially valid one, but I don't think it applies to psychotherapy trials as much as to trials of psychotropics. So I think for medication trials I think there is some truth to that. I think where there probably is some truth to the criticism is that for...to get big money from NIMH, you have to have probably a pretty good track record of previous results. I think it's going to be hard for a research team to get a large pool of money to study a brand new novel form of psychotherapy. I think that's true. But, I think what needs to be understood about that is what the EST list means, and I think this is common misunderstanding is merely that the treatments on the list have been empirically supported. It does not mean that the treatments that are not on the list are invalidated. It merely means they are unvalidated. There's a big difference. It's only one letter, but an invalidated treatment is one that has been looked at, has been studied, has been shown not to work. There are lots and lots of other treatments out there that are promising and earn trusting and are worth looking at in research that are still unvalidated that are not on the list. And it's very important for us to make clear, I think maybe we haven't always made this clear as we could or should, that merely because a treatment is not on the list doesn't mean it doesn't work. It doesn't mean it might not work really well. It doesn't mean it might not work better than the existing treatments. All it means is that it has not yet been subjected to sufficient empirical scrutiny. Does that mean that people who are proponents of some of these treatments may have to wait longer than they'd like to get on the list? Yes, but that's true in all areas of treatments and the nature of medicine as well. And again

the key thing for people to understand is a treatment may be very very promising and not on the list. And that's certainly true...But, because the treatment hasn't been adequately studied yet, we can't say it's empirically supported.

Dr. Dave: Are there treatments out there right now that you consider to be based on pseudoscience?

Scott Lilienfeld: Oh yes. Absolutely.

Dr. Dave: Are there some that you would be willing to name?

Scott Lilienfeld: Sure. The ones I mentioned, I think, recovered memory therapies are an example of that. Especially highly suggestive techniques. I think facilitated communication is an example of that. I think I would put energy therapies in that camp. Although I don't know of any evidence that they are dangerous. I would put them, many of them as classically pseudoscientific with the caveat that I regard pseudoscience as less applicable to the technique itself and more the claims that are made about it. To be pseudoscience doesn't necessarily apply to a method itself as much as a set of claims surrounding that method. But, that's maybe a technicality that we don't need to get into. But, I think that the energy therapy movement I would describe largely as pseudoscientific because I think the claims that are made, that these therapies work by manipulating invisible energy fields, I don't think are grounded in established principles. I think the claims go well ahead of the data. I think they make claims and promises that I think are not well supported.

Dr. Dave: So these would be various tapping therapies?

Scott Lilienfeld: I would put those in the same category. Again, I think, I don't know of any persuasive evidence that those techniques are harmful. I also don't know of any persuasive evidence that they work any better than the placebo effect or any kinds of non-specific effects.

Dr. Dave: Now, speaking of the placebo effect, I know in drug research the placebo effect is kind of something you're trying to get rid of, to, you know, to try and really figure out what's causal. But, what are your thoughts about the placebo effect in relation to psychotherapy?

Scott Lilienfeld: That's a good one. And that's a very fraught issue. It's a very complex issue in psychotherapy theory and psychotherapy research. And it's a really really difficult one to address in part because, I think as you correctly point out, part of what makes psychotherapy work is the promise of getting better. Part of what makes psychotherapy work is combatting demoralization. And in part what we call the placebo effect and we regard it as an artifact, I think, part of what we call the placebo effect may actually be part of the effective ingredients of psychotherapy.

Dr. Dave: Yeah. That's what I think.

Scott Lilienfeld: But I want us to be very clear. One has to be very clear when talking about the placebo effect. From a research-and this is maybe where people get confused about it and where I sometimes find it perplexing too-is that from a research standpoint, it is an artifact. If you are

trying to figure out whether or not a therapy works better than the mere expectation of improvement then the placebo effect is something you want to minimize or get rid of to draw a clear inference about whether your therapy does better than an intervention that merely engenders expectations of hope and improvement. However that's very different from a therapeutic context. In a therapeutic context it's not at all clear that you want to get rid of a placebo effect because, after all, part of what makes therapy work is the expectation of getting better. And part of what we call the placebo effect almost certainly involves common factors across therapy that we in fact know work like the power of the therapeutic alliance, and empathy, and rapport, and problem-solving, and goal-building, and all these kinds of things.

Dr. Dave: Maybe things like degrees hanging on the wall and other sources of very non-specific things. You know, it actually might be desirable in some ways to enhance this-

Scott Lilienfeld: You're right. And Gerald Frank wrote about this in the 60's.

Dr. Dave: Right.

Scott Lilienfeld: And that's right. A degree hanging on a wall is not a particularly specific effect of psychotherapy, but it does, after all instill a certain amount of confidence. When I go into a physician's office and I see a diploma hanging on the wall that makes me feel, maybe to some degree, at least this person knows what they are talking about [laughs], at least they have some level of adequate training. And although that may not be particularly theoretically interesting is probably is part-and-parcel of at least one important ingredient in what makes people get better, which is the belief that they *can* get better.

Dr. Dave: I'm wondering if your critical thinking around these issues has brought you into forensic work as an expert witness?

Scott Lilienfeld: I have only done a little bit of expert witness work. I have only done one case actually where I have been on the stand. I have done consulting with attorneys, but I haven't done that much expert witness work, although I get called a lot to do it. But, I'm often a bit reluctant to do it, because I sometimes feel that we are as a field a little too likely to do expert witness work.

Dr. Dave: Yeah, it seems like sometimes psychology is called upon to make judgments about things that we're not really, that are maybe not really within our expertise.

Scott Lilienfeld: Well, that's exactly my feeling. So that may be an account for some of my reluctance. But, I have done it once and I have consulted on a few cases involving recovered memories. And I did do one case that involved hypnotically-refreshed testimony where someone was put in prison because of rape on the basis of hypnotically-refreshed testimony where the person was hypnotized and asked to remember what a rapist looked like after initially saying that she could not remember what he looked like. So basically she, without going into details, a case in New Jersey, was a case in which the uhm, all she could say is that, she recalled she was raped, and she was raped very late at night, there was very little light, ambient light in the room. And all she could say was, "I remember he was black, he was African-American and he was wearing a

dark jacket. And that's all I remember because he told me that if I was looking, if I looked at him, he'd kill me." So she was raped. Luckily he didn't stab her and he left. And she told the police "I can't remember what the guy looks like, other than the fact he's African-American, a bulky guy, blah blah blah." And then they brought in a hypnotist to refresh her memory. And then after that, after quite a bit of pressing, she then claimed to remember something of what he looked like and then they found somebody that looked a little bit like this guy and arrested him and put him in prison, more or less solely on the basis of that testimony. I found that case to be profoundly egregious. I thought it was a terrible miscarriage of justice and a terrible miscarriage of science in part because the hypnotist actually stated in his during the session that memory works like a video camera, tape-recorder and I want you to rewind the tape to the beginning of the rape and move it forward and then he would actually ask her to mentally pause the tape and then rewind it and so on. It was just, it was just a terrible example in my view of how not to do therapy, even though he was not doing therapy per se, but it certainly bares on psychotherapy and a terrible example of how not to interrogate victims of crimes.

Dr. Dave: Now, I'm intrigued by your book, brain-washed, "Brainwashed: The Seductive Appeal of Mindless Neuroscience." And I guess, in large part, my interest is, well, triggered both from a psychological point of view, but I also do work as a market research consultant. And there's been a big swing in that arena of marketing and marketing research with claims that people will be and people can detect what brands are going to or what advertising etc. is going to have an impact in buyer choices. And I think that's really over-reaching-

Scott Lilienfeld: I agree with you.

Dr. Dave: But, people glommed onto that.

Scott Lilienfeld: Yeah, one of the chapters in our book is on neural marketing. And you're exactly right. That's become a big trend. A lot of advertising agencies, especially in the very very competitive world out there, are trying to get any edge they can over other advertising agencies and trying to find some way of peering directly into the brains of people to find out what products they prefer. So, that's right there are a number of companies now that are sticking people's heads into functional magnetic resonance imaging machines and trying to see what kinds of products they like, see what kind of commercials excite them, turn on their brains' ventral striatum the most, their rewards centers and so on. And is it pseudoscience? I guess that depends on the nature of the claims being made. I will say this, a lot of these companies, maybe not all, but, a lot of them are making claims that go way way ahead of the data. And, in particular, what's missing from much of the neuromarketing field in there, there's now a little bit of research, according to some, being done by my Emory colleague, Gregory Burns, that may suggest a little bit of promise for this. I'm not close to neuromarketing, but up until recently there'd been very few studies showing that brain images contribute to predicting what products people buy, above and beyond merely asking them. Because that's, that's the first thing you wanna do is ask them, "If you see these two products, which do you like better? Which are you more likely to buy?" And sure enough if you look at people's brains scans, you find that in general, what they say they like, corresponds to which ones seem to active their brain's reward centers a bit more. So the question is, do the brain scans actually buy you, no pun intended, additional information above and beyond merely asking people. And there's a little bit of

suggestion that might be the case in some cases. We don't yet know. And that's really the major task of neuromarketers is to show that they give us added value, that the brain scans tell us something we couldn't already tell. And I think oftentimes that's a broader problem with a lot of neurosciences. A lot of the claims being made from neuroimaging studies, again, not all. Again, I think neuroimaging has a tremendous amount of potential, but unless we're careful, there's always a danger that we can make claims that we've learned something new from neuroimages when in fact we could glean that information much for simply, much more parsimoniously from merely giving people questionnaires or asking them.

Dr. Dave: Okay, I know you're short on time so let me squeeze in just one more question here. What's your impression of the impact of neuroscience on talk psychotherapies?

Scott Lilienfeld: Neuroscience and psychotherapy. So, I'm [?], I suspect that neuroscience has some things to offer psychotherapy. I think that it may one day inform psychotherapeutic approaches. But, I think the problem is that right now there are too many levels of analysis to cross. So, we've got the brain level of analysis. We have the functional level and we have lots of other levels in between. We have the levels of emotions and personality traits. And we have social factors and cultural factors and so on. For the brain to inform the psychological level of analysis, we have to get at what Freud called the "in between." There's a huge logical conceptual gap between what we know about the brain and what we know about broad ceilings, personality traits, and so on. We don't know how to bridge that gap yet. And I think people that claim that we do are running way ahead of the data.

Dr. Dave: I think some of the therapies I've spoken-some of the therapists I've spoken to say that by talking about the brain with their clients, kind of positioning their issues in terms of what they call "brain talk" that clients seem to feel relieved, I guess of any guilt they might have about their condition. And "Oh I see. Okay." So it fits really within a scientific framework and somehow that facilitates the process of therapy.

Scott Lilienfeld: Yeah, and I don't have any problem with that. I think anything, I think that kind of psychoeducation, I suspect, I don't know any data that it's helpful, but I wouldn't be surprised if in some cases it helps people to better understand the nature of their problem. Maybe it reduces self-stigma. Maybe it reduces blame. I don't have any problem with that. I also think that it's important not to just focus on the brain level of analysis. I think you also want to focus on how psychotherapies change emotions and thinking patterns and so on. I think talking about how they're substantiated in the brain is just fine and I suspect may be helpful. And may lead people to be more accepting of therapies. So I don't have any problems with that. But I think the broader issue is can neuroscience directly inform the design and implementation of specific therapies. I don't think we yet know how to do that. I think there's some potential and my Emory colleague, Helen Mayberg, has shown this. That maybe brain-imaging can help us to predict what kinds of clients are most responsive to certain kinds of therapies. She has shown, for example, that there are certain brain-imaging differences, in particularly in the insula, which is an area that's often involved in certain negative emotions like disgust and so on. She has shown, along with some of my other Emory colleagues that there are certain brain patterns that seem to predict response to cognitive-behavioral therapy, certain other brain patterns, especially in the

insula, that seem to respond-that seem to predict better who is going to respond to antidepressant medication. That work has not yet been replicated, but I think that is very interesting and very promising. It could very well be that a decade we will be doing more of that matching patients to treatments, for example. Either different kinds of psychological treatments or psychological treatments versus biological treatments on the basis of their brain-imaging programs. I think it's possible, but again I think one thing we learn in the field is that oftentimes certain exciting developments don't pan out the way we wanted or take a lot longer to implement than we'd hoped. So I think that work is fascinating. I think it has a lot of potential, but again I think we're not yet ready to say we can do that and match people to treatments simply on the basis of their brain-imaging patterns.

Dr. Dave: Okay. Well you've been very generous with your time so, Dr. Scott Lilienfeld I really want to thank you for being my guest today on Shrink Rap Radio.

Scott Lilienfeld: It's been my pleasure.