

Shrink Rap Radio #246, September 16, 2010

Exploring Savant Syndrome

David Van Nuys, Ph.D., aka “Dr. Dave”

Interviews Darold Treffert, MD

(Transcribed from www.ShrinkRapRadio.com by Renata Sielecki)

Excerpt: *So we have these three groups: the autistic or central nervous system disability with savant skills in people, generally from birth; then there's the second group who are neurotypical people, who after some kind of an injury suddenly show some odd ability, sometimes at what I call a prodigious level; and then there's this third category of neurotypical people who have this sudden epiphany of music or art, which was not present before.*

Introduction: That was the voice of my guest, Dr. Darold Treffert, discussing his research on the fascinating condition known as savant syndrome. Darold Treffert, MD, a Wisconsin psychiatrist, has been studying savant syndrome for over 40 years. His most recent publication, *Islands of Genius: The Bountiful Mind of the Autistic, Acquired and Sudden Savant*, was published by Jessica Kingsley, Inc., in April 2010, in both the United States and England.

His earlier book, *Extraordinary People*, was the first work to comprehensively summarize what is known about this fascinating condition, originally described a century ago, and to introduce the reader to a number of present day prodigious savants, such as Lesley, Alonso, and George. Many people remember these three remarkable persons from the 1980 *60 Minutes* program about them. Dr. Treffert was also a consultant to the movie *Rain Man*, in which Dustin Hoffman portrayed an autistic savant.

In addition to his work in the area of savant syndrome, Dr. Treffert has lectured nationally for a number of years on the topic of mellowing. His booklet, *Mellowing: Lessons from Listening*, has been widely distributed. Another area of writing and speaking has been on the rights of the mentally ill with respect to balancing clinical realities with legal rights. Now here's the interview.

Dr. Dave: Dr. Darold Treffert, welcome to Shrink Rap Radio.

Darold Treffert: Well, thank you for inviting me.

Dave: Well, I've been reading your fascinating book, *Islands of Genius*, and I must say, what a fascinating front row seat you've had in spending the past 40 years studying a remarkable range of savants.

Treffert: Yeah, it has been a real opportunity and a real privilege to get to know these people and their special skills, and their families. It started as a bit of a hobby when I met my first savants in 1962, when I started a children's unit there. But it since has sort of morphed into pretty much a full time occupation because of the web site and the attention that savant syndrome is getting, particularly since the movie *Rain Man*.

Dr. Dave: So you got started when you were at the University of Wisconsin and you were running a clinic for children. Is that right?

Treffert: What happened is that I finished my residency at the University of Wisconsin Medical School and then was assigned the responsibility of starting a children's unit at a hospital in Oshkosh, Wisconsin. Winnebago State Hospital, it was called at that time. At that time the hospital had about 800 patients and a number of them were under 18. And so my task was to take those patients who were under 18 and put them into a separate children's unit instead of having them just housed on the adult units. So we gathered together about 30 such patients from the general population and put them on the unit.

Most of those youngsters were autistic and, of course, really severely so, otherwise they would not have been in an institution. But three of them caught my eye, particularly. Now, one little guy had memorized the bus system of the city of Milwaukee and, if you told him the time of day and the bus number, he'd tell you what corner that bus is going by just then. He knew the routes much better than the bus drivers themselves.

Another little guy, [was] severely autistic--in fact, he was mute--but you could put a 250 piece jigsaw puzzle in front of him, face down on the table, and he would put it together with the rhythm of a

sewing machine, just from looking at the geometric shapes. And then there was a third little guy who was an expert on what happened on this day in history. So each morning I'd come and he'd say, "Dr. Treffert, do you know what happened on this day in history?" And I'd try to bone up the night before because I knew I was going to get asked and I could never outmemorize him with these. So I became interested in this condition at that time based on these three individuals.

Dr. Dave: Well, I guess so. That's amazing. Now, these people used to be referred to as "idiot savants" and I gather that rather denigrating designation is no longer in use. And, in fact, you wrote a paper, evidently, that was responsible for the shift in terminology. Do I have that right?

Treffert: Yeah, that's right. The term, when I first started the study in 1962, was called "idiot savant." And actually that term turned out to be sort of a cruel term and one of derision. But when it was originally coined in 1887 by Dr. J. Langdon Down--who's better known for having named Down's Syndrome--at that time, just like [me], he was impressed with some patients he had seen in his career. He presented a paper to his colleagues and he said, "I want to tell you now about ten patients that have really caught my eye during these 30 years of [my] career." And he described ten patients. One little lad had memorized the *Rise and Fall of the Roman Empire* word for word and he could read it to you forward or backward. At that time the word "idiot" meant an I.Q. below 25 and "savant" was from a French word, which means knowledgeable person. And so, Dr. Down put these two together, idiot, a scientific term, with savant, learned person, and called it "idiot savant."

Over the years, "idiot" fell into disrepute and [became] a term of derision, even though the term the term idiot savant stuck. I wrote a paper in the '70s about savant syndrome and I said it's time to change the term and suggested we call it "savant syndrome." And that term has stuck since that time.

Dr. Dave: Yes, and part of the reason the word "idiot" was associated with it was that it was thought at the time that it occurs

only among people with a developmental disorder like autism. But you found that not to be the case, right?

Treffert: That's right. Savant syndrome occurs in autism and Asperger's as frequently as one in ten individuals. But it also occurs in other people who have other forms of central nervous system dysfunction. That maybe mental retardation, it may be Organic Brain Syndrome or even Tourette's, for example. So about half of the persons that I know of who are savants are autistic and the other half have other central nervous system disorders.

Dr. Dave: Wow. One out of ten autistic people show some signs of savantism. I was surprised to see that it was so high.

Treffert: Well, I was too, frankly. A question [that] needs more exploration is: Why is it as high as one in ten? But it certainly is and I think part of the reason is because some of the research shows that there is left hemisphere dysfunction in autism itself and savant syndrome, in most cases, is associated with left hemisphere dysfunction. So if you have a disorder which already shows some left hemisphere dysfunction, it would not be surprising then to see an increased number of savants in that particular class of individuals.

Dr. Dave: Now, you talk about three main categories of savants: autistic, acquired and sudden. Maybe you can take us through those and explain what each of those are.

Treffert: Yeah. Autistic savants are the ones that I think most people are familiar with, including Raymond Babbitt in the movie *Rain Man* [who] was an autistic savant. Associated with their autism, in one in ten cases, are some extraordinary or remarkable abilities that stand in contrast to the overall disability. Most of the time these skills are in music, art, calendar calculating, lightning calculating or visual-spatial abilities. These, as I said, occur in about one in ten. However, as we just discussed, it can occur in persons with other central nervous system disabilities as well. So I think it might be more accurate to call them the congenital savants, in the sense that they are present from birth, whether autism or some other disability.

But about ten years ago I began to run into a series of cases of people who were normal. And the politically correct term for normal now is "neurotypical."

Dr. Dave: Hmm.

Treffert: Normal has sort of...people feel that... well, anyway, even that term is not politically correct and so now we have to use the term neurotypical. And that's what people who don't have any disabilities are.

I began to run into a series of cases of neurotypical people--these are people who are entirely functioning entirely normally--who had some kind of a central nervous system incident. It might be a head injury, it might be some dementia; it might be a stroke or other incidents--getting hit in the head with a baseball, for example. And after that some abilities began to emerge, sometimes at a startling level, that were never present before. Dr. Bruce Miller in San Francisco has a series of 12 cases with a particular form of dementia called frontotemporal dementia, which is a little different than Alzheimer's. But each of these patients developed either musical or art skills as the dementia proceeded. And some of them had never picked up a paintbrush before in their life and yet when you look at their paintings, they're striking. They're magnificent, actually. And then there was a case here in the States of a young boy who got hit in the head by a baseball at age ten and after that he began to calendar calculate, which he had never done before.

In similar cases of what I call the "acquired savant", as I said, these are neurotypical people who have some kind of a central nervous system incident and then some savant abilities emerge, sometimes at a prodigious or at a remarkable level. And of course that raises two questions. One is: What kind of dormant capacity might exist within us all? And secondly, if that's true, how can you tap that without having a stroke or some central nervous incident? So that's the acquired savant. And that has really captured my interest particularly in the last ten years as more of these cases come to my attention.

And then there's something I call the "sudden savant." And these are, again, neurotypical people who do not have any particular central nervous incident but at some point savant abilities emerge very quickly in sort of an epiphany. And I have several cases now of sort of a musical epiphany. These are people who--they might have been struggling trying to learn an instrument or sort of plodding along learning art--but all of a sudden, I'm talking within seconds, the whole rules of music, or rules of math, or of rules of art are opened up to them and they begin to perform musically, for example, in a way that they had never performed before. But the point is really these should not be called savants in the sense that savant by definition means a disability.

So we have these three groups: the autistic or central nervous system disability with savant skills in people, generally from birth; then there's the second group who are neurotypical people, who after some kind of an injury suddenly show some odd ability, sometimes at what I call a prodigious level; and then there's this third category of neurotypical people who have this sudden epiphany of music or art, which was not present before.

Dr. Dave: Now, that's really fascinating and we'll get back into those different types. But you mentioned, kind of in passing, that the Internet gave a big boost to research on savants. How so?

Treffert: Well, after the movie *Rain Man*... Well, let me start by saying that the movie *Rain Man* made autistic savant a household term whereas before there was very little attention paid to it. And the reports in the literature were largely scattered and anecdotal and "gee-whiz-look-at-that" sort of thing but without any real public recognition of the condition. Along came the movie *Rain Man* and gave some recognition to that phenomenon. And I actually was a consultant to the movie *Rain Man* and was working on my first book at that time called *Extraordinary People*. And as a result of the public interest in savant syndrome I started what I called a "clearing house" which was a place where people could write and I would send information out to them on savant syndrome.

And then in the '90s the natural way to do that was to start a web site. And so with the Wisconsin Medical Society we started a web

site called www.savantsyndrome.com where people could look at examples of Savant Syndrome and bring to my attention examples that I obviously didn't know about. We have thousands of hits a day on that web site now and from all over the world. Everything from students who want to write a term paper, to researchers, to teachers who want to learn to deal with these, to a large number which come in to me--sort of "I've got a son or daughter who..." or "I've got a brother who..." or "I've got a relative who..." And they bring to my attention these new cases.

And it's a natural way to very quickly learn about them. If it weren't for the Internet, this would be done through correspondence and that would be months and weeks. This is instant. So much so that I'm just in the process this summer, with the help of a really skilled medical student, of putting together what I call a savant syndrome registry because what happened is I knew about a number of savants and had written about them or had them posted on the web site but I would get these reports and I just kept stuffing them into a file which I called "new savants" and it got thicker and thicker and thicker. And I had many, many cases in that file but it was not organized in any way.

So this summer we've organized that and just today and tomorrow we're putting the finishing touches on. We have about 350 such cases now in this registry from all over the world. Some congenital, some acquired, some sudden and were it not for the Internet that never would have occurred. Beyond that, it puts me in touch with researchers around the world who interested in savant syndrome work and I can share resources with them and trade resources and trade cases so to speak. So the Internet has just provided this goldmine of a resource now on savant syndrome.

Dr. Dave: Yeah, who could have predicted that? [laughs] And it sounds like you've really got your hands full for somebody, I guess, who is nominally retired. Do you consider yourself retired or not?

Treffert: Well, yeah, I guess if by retired you mean taking in your old tires and putting on a new set of treads [inaudible]

Dr. Dave: [laughs]

Treffert: In that sense I've "retired" and going I hope for many more miles.

Dr. Dave: I love that definition. I'm going to steal that if I may.
[laughs]

Treffert: Yeah, indeed. I think that's kind of how I like to look upon retirement is sort of getting a new set of treads and starting out, maybe in a different direction. So, yeah, the numbers surprised me. I thought in this file of new savants there might be 80 or 90 cases but as I said, as we've systematically put those together and now we can begin to analyze them--with respect to how many are autistic, how many not, the sex incidence, what is the most common skill, are these usually multiple skills or single skills and all those kinds of thing--to get a much better profile of savant syndrome than ever has existed before.

Dr. Dave: Yes and you've found that there's certain commonalities, for example, they all seem to manifest in terms of hypermemory or supermemory ability and then you already mentioned the five areas of art, music, calendar calculating, lightning arithmetic calculating and mechanical spatial skills. So I'm wondering, given those commonalities, what does that tell us about the brain?

Treffert: Well, I think, at least to my way of looking at this now, both in terms of observing savants as well as doing some imaging and other kinds of studies on them which are really just now beginning and under way, but from my standpoint there are two things that are happening in savant syndrome. One is that there is injury to one part of the brain and another part of the brain rewires itself, recruits unused brain capacity and actually releases dormant capacity, which is already stored. So there is brain damage and as a result of that the body compensates by rewiring, by recruiting dormant capacity and releasing some dormant skills. It turns out that this tends to be left hemisphere damage and right brain compensation.

Now granted, right brain, left brain is an over simplification and we're not neatly divided but the fact is also true that the hemispheres do specialize in certain functions. The left or

dominant hemisphere, for example, specializes in language and logical or sequential kind of thinking whereas the right hemisphere is much more instant, much more visual and happens to have the skills that the savant shows in art, music, lightning calculating, calendar calculating and mechanical or spatial skills. So the first thing that happens, in my opinion, is that there is damage to largely the left hemisphere with right brain compensation. And the skills that you see are then right brain skills.

At the same that there is that phenomenon going on there is damage--probably from same source of whatever caused the first damage to the left hemisphere--to the higher level memory. We all have certain types of memory. One is cognitive or semantic memory and that is our factual memory or as you ask me a question and I search my cortex and out hopefully comes the answer from my memory bank. And that's cognitive or semantic language and it serves us very well.

But we also have what's called procedural or habit memory. And these are things that we incorporate unconsciously. For example, let's say you're learning to ride a bike. When you first try to learn to ride a bike, you're aware of the balance and where the pedals are and you're going. And then pretty soon, in that "I've got it" moment, you learn how to ride a bike. And that's just unconscious.

Or as I drive from here to Chicago, for example, and I'm maybe thinking about my upcoming interview with you today, or whatever, but I'm also weaving back and forth in traffic. I'm taking exits sort of unconsciously and without even thinking about it. And sometimes when I get to Chicago I can't remember whether I went through Racine or not. And that's habit or procedural memory. It's very deep but very, very narrow.

So the second thing that happens in savants is that there is damage to the higher-level memory circuits and they are left then with habit memory, which is exceedingly deep but very, very narrow. And so when you see a savant what you see are largely these right--what I call right brain skills or characteristic skills of the savant--coupled with this marvelous memory.

However the memory tends to be, as I said, very narrow, within very narrow limits but very deep. And so I think what it says about the brain, to get back to your question, is that we, with respect to the rewiring, recruitment and release phenomena, we have a lot of dormant and unused brain capacity probably as a backup system or as a backup in case there is injury.

And the second thing that it says is that we also have several kinds of memory and that, again, as a backup system, damage to the semantic memory, there's reliance then on the procedural memory. And so when you see a savant what you typically will see is one of these skills that we mentioned within these five areas and coupled with this marvelous memory. But it's a memory of a particular type.

Dr. Dave: Well, that's a really nifty model. I mean, it's kind of easy to wrap your mind around it. I'm just amazed by how our understanding of the brain seems to be progressing by leaps and bounds. And your research is certainly contributing to that. Now you also note that there's a pronounced 6:1 male-female gender difference. So I'm wondering what additional clues about the brain does that suggest?

Treffert: Well, the reason for that 6:1 ratio in savants and 4:1 male to female in autism stems from some work by Geschwind and Galaburda at Harvard many years ago. And what they found was that the brain in all of us in developing in utero, that the left hemisphere completes its development later than the right hemisphere. This is true through the whole human and animal kingdom. And that means that the left hemisphere is exposed for a longer time than the right hemisphere to anything that might be detrimental. It turns out that circulating testosterone, which in the male fetus reaches levels equivalent to an adult male during the time when the fetus is developing its secondary sexual characteristics, it turns out that testosterone can be harmful to neuronal tissue. So what you have is a longer exposed left hemisphere to circulating testosterone in the male which can damage the left hemisphere and that obviously is going to occur much more in males than it will in females.

And so you end up with this 4:1 ratio not only in autism but also in learning disabilities, in hyperactivity in children, in stuttering and in autism itself and, as I mentioned earlier, there is evidence in autism of left hemisphere dysfunction leaving aside even the savant syndrome. And that stems from this left hemisphere testosterone damage in the male. And that accounts for why there are this 4:1 male-female ratio in another of other conditions, including language disorders, which is not surprising because typically the left hemisphere is the one that is specializing in language.

Dr. Dave: Now, these things are never as simple as we would like them to be. Are there also genetic factors?

Treffert: There are. For example, one can raise a question: all right with the acquired savants after a head injury, why is it only some people develop savant skills? Why is it not true that everyone who has a left brain injury would show some savant skills? Well, there are a number of reasons for that. First of all, it depends on where the injury is. We know, for example, that the left anterior temporal area is much more likely, both in autism and in people with head injuries, to tap some of this dormant potential. But it also depends on what I call the talent pool that's available. We know for example that talent tends to be somewhat genetically determined. Some of us are...some families are athletes and others have none. Some families are musical and others there is no musical abilities. There are families where math is, uh, it comes easy and others where it comes hard. I fall in that latter category. I never understood...

Dr. Dave: [laughs]

Treffert: ...second level algebra. Not only are there these different types of talent distributed amongst us but also it's distributed in varying amounts in what I call the usual bell-shaped curve. There are some people who have no athletic ability. There are some of us who have sort of normal or natural and then there are people at the far end of the extreme of the bell-shaped curve who have extreme Michael-Jordon-level abilities. And that's distributed along the bell-shaped curve, just as our height is for example. Some of us are short, some are tall, and most of us fall in the middle. And that's a genetically determine trait. So, both with respect to the autistic

savants, as well as the acquired savants, it depends on the genetic talent pool that is available will determine to some degree not only the type of skill that the savant shows but also the degree that it's present.

It's been interesting to me, as we look at savants in their families, that many times you'll find a musical savant where there really [have not particularly been] musicians in the family or people with any exceptional skills. But the more I look at these families and the farther I look at them in terms of extended family--I'm not just talking about mom and dad, I'm talking about an aunt or an uncle or a cousin, and many times it may be one or two generations back--that there is somebody. For example, I remember a case--this was a mathematical savant--and there didn't seem to be anybody in the family who had any particular skill beyond ordinary and yet, as we've traced the family back, indeed there was a professor of mathematics several generations back in that family that somebody just happened to "Oh, I remember Grandpa telling me about Uncle So-forth-and-so-on." So there is a genetic component, indeed.

Dr. Dave: Now you mentioned the 1988 film *Rain Man* with Dustin Hoffman on which you were a consultant. How accurate was that story? I gather it was based on a real person who you work with, Kim Peek. I think you also dedicated your book to him, if I recall correctly.

Treffert: That's correct. Right.

Dr. Dave: Yeah. How accurate was that? And tell us about his phenomenal memory and calculating abilities.

Treffert: Sure. Well, the background to the movie *Rain Man* is an interesting one. *Rain Man* was written by Barry Morrow, who lives in California and is still doing screenwriting. Some years back he had written two made-for-television screenplays called *Bill* in which Mickey Rooney played a person who was mentally retarded and some people still remember that. Depends on how old you are whether you remember that or not.

Dr. Dave: [laughs]

Treffert: Those received Emmys and were excellent made-for-television movies. Just by chance one day, in fact, Barry Morrow was coming to talk to the Association for Retarded Citizens to tell them...to receive an award from them for the two movies on Bill, Bill 1 and 2. And just by chance Kim Peek and his father happened to be at that same conference. And the father had to go to the meeting and so Barry was left with Kim in this room, sort of a library-like room. And Kim began to go around the room and Barry would ask him if he ever heard of this book. And Kim would say, would not only know that he heard about it but would begin to recite from it. That he had memorized this particular book or that particular book. And then they began to look at directions and maps. And also Kim had noted that in this association's mailing list there were a whole series of wrong zip codes.

And so Barry was just so impressed by Kim Peek and decided to write, to make a movie about, at least inspired by Kim Peek. And so he went home and he wrote the movie *Rain Man*, inspired by Kim Peek but it is not Kim Peek's story. Actually, the original depiction was to be someone with mental retardation just as Bill. But a decision was made along the line to depict someone with autism because autism had never really been portrayed on the screen before. And so their main character in the movie, Raymond Babbitt, was cast as autistic and...

Dr. Dave: Was Kim Peek autistic?

Treffert: No, Kim Peek is not autistic. He has some autistic traits.

Dr. Dave: Uh-huh.

Treffert: But actually Kim Peek had some congenital abnormalities, including an absent corpus callosum, which is a huge structure in the brain...

Dr. Dave: That's the structure that connects the two halves, the two hemispheres, right?

Treffert: That's correct. Right. And Kim was born with an encephalocele or a sort of a hernia of the brain. A small, golf ball-

sized hernia with part of the brain outside the skull and it sort of reduced itself naturally. But it left him...or there was no corpus callosum and it left him with some other cerebellar and other central nervous system damage. And so he has some autistic traits. Some of his hand gestures and rocking and so forth, but he was not autistic. So when Barry made the character Raymond Babbitt, it was inspired by Kim but it was not Kim's story.

And I think people have to understand when they watch the movie that they are really looking at two things. One is that they're looking at autism, rearranging the saltshakers and Judge Wapner at three o'clock, underwear at Kmart and all those kind of things. Those are autistic characteristics but superimposed on that is the savant syndrome. Being able to compute square roots, the card counting at Los Vegas, counting the toothpicks as they fall. So you're really seeing two things. And that's what Savant Syndrome is. Savant Syndrome is not a condition in and of itself. It is superimposed on some other underlying disability.

And so the movie, as I said, was inspired by Kim but it is not Kim Peek's story. In fact, the story *Rain Man* is a composite savant but all of the things that you see, all of the scenes that I mentioned and all of the other things that he was able to do, including memorize the phone book, eating cheese curdles with a toothpick, those are all based on real people as opposed to some screenwriter's fantasy at all. It just happens that they are composite and put into one individual.

Dr. Dave: Kim Peek had near perfect memory for something like 12,000 books?

Treffert: Yeah. Kim Peek is... I call him the Mt. Everest of Memory. He's I think... you know we always use the term one-of-a-kind, or the Eight Wonder of the World, or whatever. But I think Kim Peek qualifies as probably the most expansive memory ever or at least ever reported. And he had, starting at a very early age where he began to memorize the encyclopedias at age 3 or 4 or 5, had the capacity to memorize books. And he also...

Dr. Dave: And this was just by flipping through the pages, right?

Treffert: Yeah, right. And the reason...

Dr. Dave: Not working at the way that we work to memorize something.

Treffert: No. And the reason he could do that was because he would read one page with one eye and the other page with the other eye.

Dr. Dave: [laughs]

Treffert: Which is the only person I've ever known to have that skill--maybe in existence. So he would, when you see him reading a book, he's flipping the pages and they immediately go to his hard disk. And I'm talking about specific passages from the book and the page number. I'm talking about being able to bring that up on your Kindle. [laughs] And he was sort of a living Kindle in the sense that he also, Kim had, from all of these books and newspapers that he read as well, he had what has to be the world's largest factual database, memory base of anyone within 13 or 14 areas of his interest. If it was not an area of his interest he simply didn't pay attention to it. Including math. He was not a good math person. If you asked him a math question he would simply sort of say, "That's not on my job description." Or you know something to that effect.

Dr. Dave: [laughs]

Treffert: Even though he was a calendar calculator. So he memorized within these areas. Would be, for example, history, biography, the Bible, geography and other... Philosophy. If you asked him, for example, a geographical place, if you asked him, "Where's such-and-such a place?" He would not only tell you that, he would tell you the history of the place and how it got its name and what it used to be called before it was called what it presently is. And [he] would make these massive associations; naming all of the kings of England going back to earlier times and within these areas that sort of encyclopedic kind of thing. And for a long time with Kim, he would recite these facts. For example, if you asked him,

"What are the six largest cities in Sweden, and then Norway, and then Czechoslovakia, he would tell you that. But sort of recalling these facts as if looking it up in an encyclopedia. But in later years he began to put these facts together in an associative kind of way and became a living Google so that you could retrieve not only the fact, but also he would then make associations to those facts.

He also had a startling musical memory, not just factual memory for the names of the pieces but you could play most any piece that he had ever heard and he would identify that piece by name but he also would tell you who wrote it, when that person was born, when that person died, when the piece was first performed and what we now know the piece as in more popular music. And it just was this associative thing, which was just getting... Unfortunately Kim died in December of last year but this associative thing was getting to be much more prominent. And he was, in many ways, ahead of the rest of us in terms of making these associations. Sometimes he would make the association and it would take us, or his dad, a while sometimes to figure out what is the association. For example, somebody asked him, "What do you know about Beethoven's Fifth Symphony?" And he says, "Churchill." "Well, Kim, I don't get it." "Well, da, da, da, dum, is the Morse code for the letter 'V'."

Dr. Dave: Oh boy.

Treffert: Churchill was always holding up 'V' for Victory. Then he would recite one of Sir Churchill's speeches. But he would make other associations that were harder to figure out but eventually one would be able to. For example, somebody asked him, "What do you know about Lincoln's Gettysburg Address?" And he said something like, "231 Front Street," or something to that effect. Well, I don't get it. And that's where Lincoln stayed in Gettysburg the day before he gave his famous speech. So that was his address in Gettysburg.

Dr. Dave: It sounds like maybe there was a sense of humor lurking in there.

Treffert: Yes. There is. And it's interesting that wit and puns are an obscure skill or a poorly reported skill but in this series of 300 plus savants there are others where witticisms and puns are the

particular capacity. And Kim was showing that. And I use that example, or use that as an example of what I have seen as the transition in all the savants, whether it's music or art or memory, is that originally, or first of all, I've always been impressed with their startling recall. Whether it's the ability to play a piece back having heard it one time, or for Alonso Clements to look at an animal and to capture that animal exactly as he saw it, or Stephen Wiltshire, who has gone by helicopter over a number of cities now for 45 minutes and then spends the next three days drawing that building, window by window and brick by brick with absolute recall.

Dr. Dave: Not just the building but all the buildings in the city

Treffert: Yes, indeed.

Dr. Dave: Or a wide swath of them.

Treffert: Right, in fact the cover of my book is his drawing of London. So there is that spectacular recall but then over time the savant begins to improvise. And so what has been spectacular, for example with Leslie Lemke that I've worked with for years now, his spectacular recall of music. He'll recall it for you but then he wants to improvise and he will play his own improvisations on the theme as if he's bored with just recalling and then finally beginning to actually create music and compose. And so, in all the savants over time, there is this transition from spectacular recall to improvisation to creation of... When I first started this, my tour with savants, I felt that they were not very creative as a group. In fact, I wrote that in my first book and that's not true. If you wait long enough you'll see the creativity.

So in Kim, this witticism and puns are his improvisation and now his creation, really. He gets bored with just telling what date you were born, you know, what the day a week you were born and what day it'll be when you turn 65. And it's interesting, in fact, Stephen Wiltshire, who does these spectacular drawings of cities, did one some months ago over New York City. And Stephen said that was his last one, the last one that he was going to do. And we asked him how come. And he said, "I'm getting bored by doing them." And so

now he's doing more free style but he's still, he's done Sydney Australia since so he's still doing it.

Dr. Dave: [laughs]

Treffert: He didn't give it up completely. But the puns and witticisms, I think, are evidence of Kim's creativity. Sometimes the memory that savants have and sometimes the skills turn out to be as much of a force as they are a gift. Alonzo has to sculpt and Leslie has to play. And if they don't they get agitated. It's something they have to do. So sometimes, to the family, it gets to be a...I don't know how many times Mary has heard Tchaikovsky's First Piano Concerto from Leslie with whom [s]he now lives because he has to play. He has to play a certain number of hours each day. So there is that force. And sometimes the memory gets in the way a little bit. In fact with Kim, his father, Fran, tells of them going to a Shakespeare play recently and towards the end of the play Kim stands up and says, "Stop! Stop the play." And the actor says, "Sir, what's the problem?" He said, "You missed a word."

Dr. Dave: [laughs] Oh no.

Treffert: And the actor said, "Sir, first of all, I didn't think anybody would notice. And secondly, I didn't think anybody would care." And Kim said, "Well, Shakespeare would have cared."

Dr. Dave: Oh no. [laughs]

Treffert: And the same thing with concerts that Kim remembers not just the piece in its entirety but each of the instruments and when the trombone is supposed to come and so for and so on. And so sometimes, at least towards the end there he didn't interrupt concerts, but he would often be compelled to go up after the concert and talk to the conductor and remind him that in this particular piece did you realize that something had happened that wasn't supposed to be there. So it was just a massive memory. But he was such a gentle soul also and a kind soul and a very...he would get very upset about...In fact, he often times could not watch the news because he would get very upset about unfairness, or a tragedy, or a tornado. Just really "Why? Why does that happen?"

And so sometimes I think the rest of us we might say, well, put that into perspective or say, "Well, those things happen," and so forth. But his rigidity in that regard sometimes would be a form of torment for him.

Dr. Dave: Sounds like there needs to be a new movie, one that [indecipherable] closer to who he really was because...

Treffert: Yeah.

Dr. Dave ...fascinating person

Treffert: Yeah, indeed. In fact, I hope to be able to co-edit a book with his father, not just to chronicle his remarkable abilities, but there was a considerable amount of study of him with imaging and with neuropsychological testing and with the corpus callosum abnormality, that really needs to be available in the literature to future researchers. It's sort of scattered now between magazine articles and video clips and so forth but it really needs to be put into one place. It's like Luria's book, *The Mind of a Mnemonist*, which chronicled a person he had worked with, Mr. S., for many years. It's been a really carefully put together source book for people now looking at memory. And I think the same thing with Kim.

And I guess also with respect to the movie *Rain Man*, there are many people who sort of objected to the way the movie ended, where Raymond went back to the institution. They wanted him to be out of the institution and go to the Dodgers game with his brother. A six-day cure of autism, that's just not realistic. But if you had a sequel to *Rain Man* now, what you would see is the progress that Raymond Babbitt would make and eventually go into a community facility and become more self supporting and so the chapters of what happens.

The savant skills are not just frivolous, "gee whiz, look at that, isn't that interesting" skills. They are the language that these people are using and it's their way of communicating to us. And if you train the "talent" as I call it, they develop even better language and more daily living skills and more independence. And I've got example

after example of that. And so, I think in that sense, a follow-up to *Rain Man* would be useful to see that Raymond didn't spend the rest of his life in the institution by any means but became part of us in the community.

And that's what's happening more and more now, not just with savants but with autism in general. In that sense, I think it's a very positive and in fact, my whole experience with this has been one of great optimism not just for savants but for brain research in general when we consider... I think that the brain is such a marvelous... I mean we take it for granted like we take a lot of things for granted. But when you really think about that three pounds of Jell-O-like substance and what it can do. I keep marveling at how smaller and smaller these flash drives are getting and how much you can put on the flash drive but that is nothing compared to what is stored in our own head over a whole lifetime.

So it's made me much more in awe, not just of what the savant can do but of that marvelous brain that we have and how we can use it better and more. Not only for people who have brain damage and stroke, post-stroke, to help them heal better but within ourselves to expand our own capabilities without waiting until we have a stroke or something that puts us in touch with that part of ourselves which is already there.

Dr. Dave: Well, that thought is probably a good place to wrap up the interview although it would be so easy to go on and to have you tell us... Your book is just full of fascinating information and case histories. But I think we do need to draw to a close

Treffert: Sure. Indeed.

Dr. Dave: So, Dr. Darold Treffert, I want to thank you for being my guest today on Shrink Rap Radio.

Treffert: I consider it a privilege and I'm delighted to have been invited.

[Music]

Dr. Dave: I hope you enjoyed this interview with Dr. Darold Treffert as much as I did. I strongly recommend his very readable book, *Islands of Genius*, which, in addition to lots of science about savant syndrome, has chapters detailing the lives and abilities not only of Kim Peek, who you heard us discuss, but 13 other savants as well. He's also got two great web sites that are chock full of great information about savant syndrome. The first is www.daroldtreffert.com. And the other is www.savantsyndrome.com. These are definitely worth spending some time on. In fact, savantsyndrome.com has a large number of video clips of savants in action.

Also, there is a three-hour German film that Dr. Treffert says is quite definitive. The title of the film is *Beautiful Minds: A Voyage Into the Brain*. I wasn't able to find this film on Netflix but I did see that it is downloadable as a bit torrent, if you're into that. Aside from their intrinsic interest as a curiosity, Dr. Treffert rightly suggests that these savants give us a window on the inner workings of the brain and perhaps our own unrealized potential.

[End of transcript]