



After the Fact | [The Future of Learning Part 4—Superagers and Lifelong Learning](#)

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TRANSCRIPT

[Opening music]

Ray Suarez, guest host: Have you ever met a superager? Someone whose mind is as sharp in older age as it was in their younger years? Someone whose intellect and recall you might even envy?

In this fourth and final episode of our special series on how we learn, we'll discuss how to continue learning throughout our lifetime. I'm Ray Suarez—thanks for listening in.

Our data point for this episode is 94.7 million.

According to the Census Bureau, the number of Americans aged 65 and older will almost double from 49.2 million in 2016 to 94.7 million by 2060.

That begs the question, as we grow older in America, how will we keep learning?

To find out, we visited the Center for Vital Longevity at the University of Texas at Dallas to speak with neuroscientist Dr. Denise Park about the work she is doing with learners over the age of 60.

[Transition music]

Denise Park, distinguished university chair in Behavioral and Brain Sciences, University of Texas at Dallas: I study the connection between brain and behavior and how it affects in particular your cognitive function, or your mind. And I look at just basically how to understand the brain, and how it works, and how the mechanics of the brain change with age.

Ray Suarez: Dr. Park has been researching and studying cognition and the aging mind over the past several decades. Neuroscience has made great strides in the last 10 to 15 years thanks to the advent of neuroimaging tools, which help researchers like Dr. Park



to better understand the changes a human brain goes through as it ages. I asked Dr. Park to explain these changes.

Denise Park: I think one of the most interesting things we've learned about the brain from neuroimaging is that, yes, it's true your brain gets smaller as you age a little bit. And it's true that your cognition goes downhill a little bit as you age. But what's really exciting: Would you expect your brain to be more active or less active as you age?

Ray Suarez: Well, given cell death, I guess more active, because I'm trying to do the same stuff with less material on board. Is that fair?

Denise Park: Well, you're exactly correct, but it's not what I expected. I was doing work when we started doing neuroimaging at the very beginning, and no one knew the answers. And I would have expected like everything else, it would be downhill a little bit. And it's so exciting, because the brain actually does show increased activity with age, and it creates new circuits, activates new regions of the brain in addition to the regions that you might use as a young adult.

And there's increasing evidence that that additional activity protects your cognition. So it's like the brain works a little harder for you, and that adaptability and plasticity of the brain does play some role in maintaining cognitive function, and it's a very exciting finding.

The brain can reorganize a little bit with age. But it's not like you can go from, say, having a normal IQ to becoming a genius. And we have to keep in mind, actually, younger people probably have more plasticity than old. So there's limits, but one thing you can do is, I think, is keep your brain active your entire life so it's maintaining its structure and function for as long as possible.

Ray Suarez: In the past several years, breakthroughs in research have changed our understanding of how our mind ages. Alzheimer's and dementia were once thought to be an inevitable part of life, and neurogenesis wasn't possible past childhood. We now know this is *far* from the truth.

Dayna Touron, associate dean, College of Arts and Sciences at UNC Greensboro and director, UNCG Adult Cognition Lab: We used to believe that brain health was really a matter of an evitable decline. And you might be able to change the rate or trajectory of that decline, but there was really no brain birth or growth during late life. And we absolutely know that that's not the case.

We know that there is neural regeneration that occurs as people get older. It's slower, but it is when people are young. But it absolutely occurs.



Ray Suarez: That's Dayna Touron, professor of psychology and associate dean at the University of North Carolina at Greensboro. She runs the Adult Cognition Lab, which focuses its research on adult aging and cognition.

Dayna Touron: I think some of the important things that we've learned recently is just how much variability there is, that it's not a one-size-fits-all type of situation. Individuals who are 60-plus vary tremendously. And so, whereas some people are still learning and still vital and aging very successfully and really not that mentally different than they were in their 20s or 30s, other people show pronounced declines. And so we've been interested in understanding what accounts for those differences.

I would say another big area of discovery in recent years has been in terms of the types of things that can improve outcomes for people mentally as they get older. And there's been a lot of interesting work on lifestyle choices actually that can affect mental aging. And so physical exercise, mental engagement, diet even, and how those things can improve not just mental and cognitive health, but also, we can see these differences in the brain.

Ray Suarez: Professor Touron also mentions something called cognitive "offloading" that can help us be more efficient mentally as we get older, and this takes direct advantage of the technology in our world—and in our hands—today.

Ray Suarez: Are we using things like tablets and smartphones in a way that actually can become a complement to the aging brain?

Dayna Touron: Yes, I think, absolutely. And I think that's true, across the lifespan, that we now can, and we should, rely on technology for things like reminders. And I mean, I would say, broadly, there's a huge place for technology in older adult health and, really, successful living throughout the lifespan, as I've said, but particularly in older age. Things like remote health access, that can be tremendously beneficial to some people—smart home technology. Ways that you can—video conference with family and remove some social isolation for those people who otherwise might experience that. And so I think there's a huge role for technology in older adult well-being and cognitive health.

Ray Suarez: As we all know, aging is inevitable. But there are ways to slow this natural cognitive decline.

Dayna Touron: Exercise is excellent for the aging brain. And really of all the interventions that I've seen, I think physical exercise is the most compelling because you don't need a lot of exercise to see a big boost. People don't have to be one of these older individuals who runs ultramarathons. Just a simple walk, 30-minute walk every



day. If we think of the brain as an organ in the body and one that actually uses a lot of our blood flow, it makes sense that exercise would improve cognitive performance.

Ray Suarez: Is some of that, though programmed into the genes, that we carry around a genetic inheritance that is hard to overcome? You could exercise your morning, noon, and night, and if you come from a long line of people who suffered from early onset cognitive decline or something similar, severe memory loss in old age, you might not be able to overcome that. How should we think about that?

Dayna Touron: I think you're absolutely right. And there certainly are pathological conditions for which there is a certain amount of inevitability associated with it. So I'm not talking about halting those processes, but rather potentially slowing them down in some cases. Most of this research is experimental research where they put some people in a walking condition and other people are in a controlled condition where they do similar, but noncardiovascular, tasks, and really across these fairly large samples of participants, they see fairly pronounced increases in their cognitive performance and also in these markers of brain health. And so I do think this is—it's pretty strong evidence that it will help most people to engage in these types of activities.

[Transition music]

Ray Suarez: While exercise, eating well, and generally staying healthy is good for both our minds and bodies, research also shows how one's social life, feelings of loneliness, propensity to try new things, and how we tackle life's challenges can all impact how our mind ages. Here's Dr. Park again.

Denise Park: There's a very stable personality dimension called openness to experience. It's one of the Big Five personality dimensions. And people who are open to experience are much more likely, I think, to enrich their minds over time, because they're more open to learning new things and doing different things. And we all know people that you immediately think of, yeah, they're open to experience. Other people, it's a pretty stable trait, and it's just it's the way they're wired, in my opinion.

Ray Suarez: Dr. Park and her lab are currently carrying out a study called the engAGE Project, which hopes to reveal if we can improve brain function for a sustained period of time in older adults through engaging in complex mental activities.

The program is a 14-week course in digital photography, with participants spending at least 15 hours a week on assignments and work. But there's an important requirement: You must be 60 or older to apply. Dr. Park told us there's a long waiting list of interested applicants.



We spent a day in the Engage Learning Center’s classrooms—a modern-looking, 3,500-square-foot space in Dallas—and observed a class as the participants discussed their weekend taking photos and presented their photography portfolios. And by the conversation happening there, it sounded like a digital photography class that would have been happening with any group anywhere.

[Engage Learning Center—classroom sound]

Instructor: All right, good morning, everybody.

Class (in unison): Good morning.

Instructor: How’s everyone doing today?

Class: Good.

Instructor: Good. Good. Good. How did the homework go?

Charles Hickox, student: You’ll see.

Instructor: We’ll see. Yeah, we’ll see. So today—this is what we’ll do in class today. We’re going to obviously share our homework and discuss what we watched and read. Then we’re going to present our portfolio projects that we worked on last week. Then we’re to introduce you guys to black and white photographers. And then we’re going to introduce the final project. You know, we’re here on week 12. And then go over the homework assignment. OK?

Ray Suarez: The classroom we visited had six students. It was a small, collaborative, and encouraging environment with a lot of talented amateur photographers in our midst. Dr. Park told us more about how the center set up the classes.

Denise Park: In the Engage environment, the classes are small. Everybody’s on the same page. People that come here have to be novices. Someone who has a long and expert background in photography would not be admitted to the class. So people are pretty much on the same page. And I think most importantly, we have an instructor for six people, one. And two, the space is open for them to come any time, and there’s always one or two assistants here that can help them with their work.

And I think what’s really important is that they get a lot of support, and they’re not afraid to ask questions, and they’re not afraid to make mistakes, because I think everybody is doing that here. And I think it’s the cognitive support to learn. You have to



work hard, but you have somebody to help interpret things for you along the way. And I think that's very productive, and the class is very structured.

I want to emphasize that—to see if photography can improve your cognition. It's an effort to understand whether using your mind for a sustained period in a very effortful way supports your cognition and maintains cognitive function over the long term.

Ray Suarez: The Engage Center's creation and purpose is to contribute to our scientific understanding of an aging brain's ability to improve cognitive function by engaging in challenging mental tasks. But, it also provides older adults with a community of fellow learners and empowers them to challenge themselves mentally in a supportive environment. For some, the end result is the realization of unexpected skills.

[Engage Learning Center—classroom sound]

Instructor: All right, Charles.

Charles Hickox: All right, I feel like I had to give it a title, so Digital Photography Favorites.

Instructor: Good, I like it.

Charles Hickox: Moving right along. This is one of the first that I took. It's at the Dallas Arboretum. I call this Rainbow Fountain.

Instructor: Yeah, I like that rainbow.

Charles Hickox: There are a number of things I like about it, as you'll see in the next slide. Color, action, detail—there's nothing I dislike about this slide.

Ray Suarez: That's Charles Hickox, a local Dallas resident who turns 75 this month. He's been retired for quite some time from a career as an adult education program administrator. We asked him what drew him to this study and about his outlook on lifelong learning.

Charles Hickox: Well, I'm interested in adult learning. It was kind of my field professionally. I heard about this—actually, my wife heard about this and said, "I think you'd be interested in learning more about digital photography." So I checked into it, went through the interview process. And the more I learned, the further I got into it, the more I knew that I really wanted to do this.



Ray Suarez: Is it fair to say that because of your preretirement life, you already knew there was a lot of potential for late-in-life learning for people?

Charles Hickox: Oh, absolutely. I subscribe to that wholeheartedly. You're never too old—or, you know, you might be limited physically. I'm getting closer to that, I guess. But as far as mentally, being able to learn new things, to learn to apply new things, yeah, I believe that. And I'm practicing that.

Ray Suarez: Well, we saw your portfolio. And there were some beauties in there.

Charles Hickox: Oh, thank you very much. Appreciate that.

Ray Suarez: Do you have goals, ideas, about how you'd like the next 20 years of your life to play out if you get that long?

Charles Hickox: Well, I hope to stay active. Discovering things like digital photography, I think, is going to add to that. I'm not particularly interested in living an uneventful life. I've never really been interested in that. But there's no reason that I can't continue to learn, continue to get into things like photography that will keep my interest, keep me out and active.

Ray Suarez: And thus, a more interesting older life? A more mentally active older life?

Charles Hickox: Oh, absolutely. Absolutely. I don't see any advantage to just sitting back. I just don't see that. I try to stay active anyway. I'm physically active. But you need something mentally going as well. I mean, I read, I do crossword puzzles, I enjoy movies, that sort of thing. But I need something really active. And there's no reason you can't continue to grow, up to your dying day. I mean, that's my objective.

[Transition music]

Ray Suarez: Charles's outlook on aging and the ability for everyone to continue to learn and grow "up to your dying day" isn't just a positive sentiment, or a healthy mental outlook. Science is revealing how our attitudes—on an individual and cultural level—on aging and learning contribute to our abilities to learn and our sense of purpose. One person very familiar with the possibilities of cognition in advanced years is Emily Rogalski. She works with superagers.

Emily Rogalski, professor at Northwestern University and associate director of Mesulam Center for Cognitive Neurology and Alzheimer's Disease: The research that I do takes place at Northwestern University within the Mesulam Center for Cognitive Neurology and Alzheimer's Disease. And that's kind of a mouthful, but it means that we



do aging and dementia research. Part of our job is to follow individuals who have different dementia syndromes, such as Alzheimer's disease. And then another part of our job is to identify healthy individuals. And we know that with aging, on average, memory tends to decline, really maybe as early as our 30s and 40s. But when we look at the individual level, we see that that's not always the case, and that wide amount of variation is what we're trying to take advantage of here. And it seemed like there were people who were able to maintain outstanding memory performance even in older age. And that's what we describe as the superagers.

Ray Suarez: What's the age range of the people you're working with?

Emily Rogalski: So these are individuals who are over age 80 who have memory performance at least as good as individuals in their 50s and 60s. And then our research question is, gosh, how are they able to do this? And how can we look from multiple vantage points to understand factors that might be contributing to this? So we look at genetic factors. We look at the structure of their brain through MRI scans, through PET scans. We know things that are more important than just looking at these biological factors and that there's intersections with lifestyle, and so we of course—we also look at those aspects as well. So we're trying to take as comprehensive an approach as we can to understand the factors that are really important for helping these individuals live long and live well. The oldest living superager we have right now is 105, and she just celebrated that birthday just a few months ago.

Ray Suarez: Are there any commonalities? When you compare these superagers to each other, are there things that they have in common that we're starting to think may contribute to their status as people who are aging unusually well?

Emily Rogalski: That's precisely what we're interested in, is understanding what these individuals have in common, both from a biologic standpoint and a lifestyle standpoint. And so we were able to ask the superagers who generously came in and got what we call MRI scans of the brain, which give us 3D images of the brain. So their brains look more like 50-year-old brains than they do like 80-year-old brains. And we found something even more surprising when we did that analysis. We actually found that there was a region of the brain called the anterior cingulate which was thicker in the superagers than it was in the 50- to 60-year-olds. So the anterior cingulate is important for lots of our thinking functions, including attention, and attention supports memory. So we think that this might be one aspect that allows superagers to maintain their outstanding memory performance. And we see that we had yet another surprising finding here and that the superagers have an abundance of a special kind of brain cell, a brain neuron called the von Economo neuron. von Economo neurons are special neurons that are particularly large, and we think that they're important for supporting social functions.



The other remarkable thing about the superagers is you might assume that these individuals are all extraordinarily highly educated, maybe they're all just doctors and lawyers and that they've had kind of life handed to them on a silver platter. And that's just really not the case. So we have a variety of levels of education, and we have individuals with a variety of life experiences. And many of these superagers have been through traumatic events, from being in the Holocaust, where they lost all of their family members, to losing a child at a young age, to having other health or family health issues, or struggling to make ends meet. And what we see is a lot of resilience and perseverance.

And it's quite remarkable how the superagers have chosen that road of resilience. And they've also learned to adapt as they get older. We have a superager that has been interviewed before and talks about how he lives with his kids and grandkids, by choice, not because he has to. But he says—you know—my grandkids don't know much about Frank Sinatra or Franklin Delano Roosevelt, so to stay current, I've got to ask if Chance the Rapper or Taylor Swift are coming to town. And so he seems to find joy in really finding ways to connect with different generations, which I think is remarkable as well.

[Transition music]

Ray Suarez: You might be thinking at this point, as I know I was, how do I become a superager? Well, there isn't an *exact* formula to increase your odds, but Emily did share some "best practices"—so to speak—for healthy cognitive aging, and it goes something like this: Exercise your mind as you would your body.

Our brain likes novel experiences and tasks that challenge it—novelty builds neuroplasticity. Another important factor—never think you are too old to learn or to take on new projects, especially if they interest you. There are many people who embody this type of living and learning, and one in particular is June Scott, a superager and a participant in Emily Rogalski's study.

June Scott, superager and superaging study participant: I'm June Scott. I'm 88—I have three children, four grandchildren, and I'm a superager who loves to travel.

Ray Suarez: And June indeed loves to travel. To date she's been to about 95 countries and just got back from a month-long trip to Eastern Europe to trace her family's roots. On the verge of 89, she's an ideal of aging we can all aspire to.

Ray Suarez: As I look over the list of places you've been—I've been around the world a lot myself, because of my years as a reporter. A lot of these places are not plush



destinations. They're not easy places to be and not easy places to travel. You apparently like a challenge.

June Scott: [*chuckles*] You know what? When you're lugging your backpack and your suitcase through an airport, on trains and buses, and getting from terminal to terminal in an area where you don't know the language, you think, oh my gosh. Now I know why people don't travel. But once you get there, it's well worth the effort. All that fades away. You go for the adventure, to learn about their cuisine, to learn about the people, to learn about their life experiences, and just absorb all you can. And appreciate the world and the part that you are able to enjoy.

Ray Suarez: When did you first hear of Emily Rogalski's superagers study?

June Scott: About six years ago. A friend of mine had read about it, and she was invited, she told me about it. And I thought about it. I think I was in Nepal at the time. And I thought, well, I better check it out. So I called, and they interview you over the phone. They make an appointment for 45 minutes testing your different memory skills, of course, and asking all sorts of health issues. And, fortunately for me, I was asked to be in the study. And I always do things so that I can learn something. And I figured I would learn something with this experience—and I certainly have.

Ray Suarez: What attracted you about getting involved?

June Scott: I think the most important thing to me is I felt that I was too old to donate any part of my body, and if I'm going to donate my brain—and I feel very fortunate that, perhaps, it will help somebody else to not experience dementia. And the more they can learn about the healthy brain and see if other people can be as fortunate as I am—to me, that's very worthwhile.

Ray Suarez: Speaking of June's enviable brain, I asked her why she thinks she's been so cognitively lucky.

June Scott: I think it's worked out well for me, basically, because I've had good health, lots of energy, an optimistic attitude, a family that encouraged education, and a husband and a family who encouraged me to try these trips. And I'm curious, I'm out there, and always asking questions. I think attitude is 99 percent of it. Because you go—everybody has losses through their lives, but it's how you handle them and manage them that makes the difference. There is so much to learn in this world, and I want to continue and be a lifelong learner as long as I can and take advantage of the opportunities. And, fortunately, so far I have been able to do that.

[Transition music]



Ray Suarez: While not all of us will be able to travel as extensively as June, science has revealed to us we all have the ability to be lifelong learners.

How we think about learning and aging is changing. No longer is it “inevitable” that we will decline cognitively in old age, and, more importantly, you *can* teach an old dog new tricks. This news is especially promising in a world where we are living longer, with many more healthy years ahead of us.

Be curious, be engaged, and to quote one of the oldest men from science fiction history at 162 years of age: “Live long and prosper.”

[Transition music]

Ray Suarez: This brings us to the end to our Future of Learning series, but if you can’t get enough of this topic, be sure to check out the next edition of Pew’s *Trend* magazine at pewtrusts.org/trend.

As always, let us know what you thought of this episode, this series, and about topics you’d like to see from us in the future. Tweet us @pewtrusts or send us an email at podcasts@pewtrusts.org.

Dan LeDuc will be back in the next episode. For now, I’m Ray Suarez, your guest host. Thanks for listening.

[(Female voice over music) “After the Fact” is produced by The Pew Charitable Trusts.]