

# The Sudden Savant: A New Form of Extraordinary Abilities

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## ABSTRACT

**Introduction:** Savant Syndrome previously has been characterized as either congenital or acquired. This report describes sudden savant syndrome in which neurotypical persons have the sudden emergence of savant skills without underlying disability or brain injury and without prior interest or ability in the newly emerged skill areas.

**Case Presentation:** Eleven cases are described in which savant abilities suddenly and unexpectedly surfaced in neurotypical persons with no special prior interest or ability in the new skills, accompanied by an obsessive interest with and compulsive need to display the new abilities. All participants completed an online survey to record their demographics and skill characteristics.

**Discussion:** The acquired savant, and now the sudden savant, raise questions about the dormant potential for such buried skills in everyone. The challenge is to be able to tap such latent abilities without head injury or other precipitating events.

**Conclusion:** This paper documents 11 cases of sudden savant syndrome, which is a new and additional form of savant abilities surfacing in neurotypical persons without developmental disabilities (such as autism) or head or other brain injury (acquired savant syndrome). It opens new paths of inquiry for exploration of extraordinary abilities perhaps within everyone.

## INTRODUCTION

Savant syndrome is a rare condition, with only 319 recorded cases, in which persons possess unexpected and sometimes prodigious abilities in stark juxtaposition to underlying neurodevelopmental disability or other central nervous system (CNS) disorder.<sup>1-3</sup> These abilities are most commonly in music, art, mathematics, calendar calculating, language, or visual-spatial/mechanical abilities.<sup>3</sup>

There are 2 previously reported classifications of savant syn-

drome: congenital and acquired.<sup>1,2</sup> In the congenital form, the savant skill surfaces in childhood. This skill is always accompanied by an underlying developmental disability, often—but not always—autistic spectrum disorder. Acquired savant syndrome occurs in previously neurotypical individuals who suffer head injury, stroke, dementia, or other central nervous system (CNS) event or disorder.<sup>1,2</sup> After this event, savant skills surface unexpectedly, sometimes at a prodigious level. Both congenital and acquired savant syndrome are rare, with their documented case totals being 287 and 32, respectively.<sup>3</sup>

In this report, we propose a new or alternate form of savant syndrome: sudden savant syndrome, in which savant-like abilities surface unexpectedly, sometimes

at a prodigious level, in neurotypical persons with no prior interest or ability in the newfound skill, and with no apparent cause, injury, or underlying disability. Neurotypical persons with no particular art, music, or mathematical interests or abilities, for example, report an unanticipated, sudden, spontaneous burst of newfound abilities accompanied by an epiphany-like understanding of the “rules” and intricacies of the particular areas of specialization. Here, we report the demographics and skill characteristics of 11 cases of sudden savant syndrome.

## METHODS

### Initial Contact

The participants in this study sent emails or letters to the Treffert Center, located in Fond du Lac, Wisconsin, describing their experience with sudden new savant-like abilities and asking for more information about savant syndrome, with which they were

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somewhat familiar. These initial contacts always included a self-report of the newfound abilities, which occurred spontaneously and without apparent cause. A follow-up email from the Treffert Center requested more information and, if the experience fit the description of sudden savant syndrome, the potential participant was asked if they wished to participate in a formal survey in order to receive more standardized and consistent information.

### Sudden Savant Syndrome Survey

Secondary contact was made with the subjects to ensure the information within their initial email was accurate, as well as to create a route to send the Sudden Savant Syndrome survey. The survey was created to obtain current, comprehensive information regarding each subject's name, age, sex, location, race, ability, initial point of skill realization, follow-up course of abilities and other pertinent information. Thirteen consenting subjects were sent the survey; 8 of the 13 initial participants (61.5%) completed the entire survey.

SurveyMonkey ([www.SurveyMonkey.com](http://www.SurveyMonkey.com)), an online survey tool, was used to develop, send, and receive the survey.<sup>4,5</sup> The survey consisted of 34 questions and was developed to be a comprehensive investigation with the purpose of elucidating the etiology of sudden savant syndrome. Following Institutional Review Board approval, informed consent was obtained electronically through the survey. Data obtained from the survey were analyzed using Microsoft Excel.

During the study period, DT published a blog post regarding the sudden savant titled "Brain Gain: a person can instantly blossom into a savant-and no one knows why" in the online magazine *Scientific American*.<sup>6</sup> This brought forth a large numbers of replies, some from suspected sudden savants. Subsequently, 3 sudden savants were added to the contact list and were prompted to complete the Sudden Savant survey, bringing to 11 the total number of sudden savants who completed the survey. MH, a case example described below, was not included as 1 of the 11 participants in this study due to the uniquely transient nature of their acquired abilities.

### CASE EXAMPLES

#### MF

MF, a 43-year-old woman, woke up one night in December 2016 with what she called "the urgent need to draw a multitude of triangles, multiple geometric and triangular formations, which quickly evolved to a web of complex abstract designs." She recalled that she "stayed up into the morning with a compulsive need to draw, which continued over the next 3 days at an intense level." She had no prior interest or training in art. By the third day, she was working on a piece she named "The Mayan," which took her 2 weeks to complete (Illustration 1). Three months later she had created 15 pieces, with styles reminiscent of artists including Frida Khalo and Picasso. She currently spends about 8 hours per day on her artwork, in addition to working as a real estate agent. Incorporated into most of her pieces is a mandalic style of which

Figure 1. Samples of artwork by "MF"



Illustration 1: "The Mayan"



Illustration 2: "Self-Portrait"

she was totally unaware prior to her sudden art ability. "My art style is an ever-growing perpetual vision which leads me to create mandalic style art, sacred geometry, and mysterious creature beings all incorporated into art. Ideas are never-ending. It just flows so easily in my mind and on to paper." Illustration 2 is a self-portrait she created in 2017.

## KA

KA, a 28-year-old man from Israel, provided a description of his epiphany moment. He was in a mall where there was a piano. Whereas he could play simple popular songs from rote memory before, “suddenly at age 28—after what I can best describe as a ‘just getting it moment’—it all seemed so simple. I suddenly was playing like a well-educated pianist.” His friends were astonished as he played and understood music in an entirely intricate way. “I suddenly realized what the major and minor scales were, what their chords were, and where to put my fingers in order to play certain parts of the scale. I was instantly able to recognize harmonies of the scales in songs I knew, as well as the ability to play melody by interval recognition.” He began to search the internet for information on music theory and, to his amazement, “most of what they had to teach I already knew, which baffled me as to how I could know something I had never studied.”

KA, an attorney, has a high IQ and has no history of any developmental disorder. He now makes part of his living doing musical performances. His epiphany is described in much more detail in the articles section of [www.agnesian.com/page/savant-syndrome](http://www.agnesian.com/page/savant-syndrome), as well as in *Islands of Genius: The Bountiful Mind of the Autistic, Acquired and Sudden Savant*.<sup>2</sup>

## MH Temporary Sudden Savant

MH was a 31-year-old journalist stationed in West Germany in 1983 to 1985. While there, he attended some basic German language classes and picked up a rudimentary ability to speak or understand German using some basic phrases such as “please,” “thank you,” “how much,” or “where is the train station?” When he tried to speak German, he said most people would ask him to use English since they were proficient in both languages. One evening, he met a middle-aged man in a bistro. MH tried speaking some German, such as giving his name, saying that he was in the Army and that he loved Germany. The acquaintance replied in German, but MH could not understand. At that point MH told the other man he had been in Germany 25 months. The man replied, “If you have been here 25 months, then you can speak German.” At that point, MH said, “He had said that in an irrefutable declarative sentence and, much to my amazement, I discovered he was right. Suddenly, for the first time ever, I understood everything he said in German and I effortlessly replied in fluid German. For the next 15 to 20 minutes, we had a nonstop conversation—I understood and spoke German perfectly.” But that ability was very short-lived. “Then came the moment when I became aware of the strangeness of the phenomenon and I tried to analyze the what and why of things. As soon as my thoughts changed from subjective to objective, poof, my newfound ability vanished and has not returned.”

Then, at age 38, MH was a civilian doing some outreach work for the Mormon church. He visited a family one afternoon. There was a piano there and he sat down and played “little, very little.” Growing up, MH said he played a piano in the basement that

he “dinked around on,” knowing only a few chords. The mother of the family he was visiting asked if he played the piano and he replied “no, not really.” But then, “suddenly my mind opened up as it had in Germany. I began playing elaborately and spontaneously notes and chords—beautiful music, whatever it was. I had never heard it before, but it was beautiful, flawlessly performed. Not once did I hit an off or sour note. My sudden and inexplicable musical ability lasted 15 to 20 minutes.” Just as with the German transient language ability, the musical ability vanished when he realized what he was doing and tried to analyze the “what and why of things.” That musical genius disappeared as suddenly as it had appeared. MH said it “was gone forever and entirely. Yet my memory of playing the piano like a virtuoso is still quite clear and certain.”

MH’s experience is similar to that of foreign accent syndrome (FAS), which is described in *Islands of Genius*.<sup>2</sup> FAS is a rare but dramatic condition in which persons following head injury or other CNS incident begin to speak with the foreign accent or entire language of a country they may have never visited. Most pertinent here is the case of a Czech racecar driver who was knocked unconscious in a speedway accident. When he regained consciousness, although he knew only the most basic English phrases, he was conversing fluently in English with the paramedics attending him. After a full recovery, however, the fluency disappeared to where it was very difficult for him to make himself understood in English and he reverted to his native language. In most persons with FAS, however, the change in language or accent remains and is not transient.

## RESULTS

The 11 participants who experienced sudden skill realization provided the following information via correspondence and the sudden savant survey.

### Demographics

Most of the survey respondents currently reside in the United States ( $n = 7$ , 63.6%), others reside in Finland, Israel, Canada, or Japan (Table). Four of 11 respondents were male (36.4%), 7 were female (63.6%; Table). Participants had completed various levels of education before and after skill realization. Before skill realization, distribution was as follows: 5 high school degrees (45.5%), 1 associate degree (9.1%), 3 bachelor’s degrees (27.3%), 1 master’s degree (9.1%), and 1 doctoral degree (9.1%). Following skill realization, the education levels differed only with 1 high school degree participant earning an associate degree, changing the post-realization distribution to 4 high school degrees (36.4%) and 2 associate degrees (18.2%).

### Abilities

The most prominent savant-like ability elucidated in our study was art ( $n = 9$ , 81.8%): 6 participants possessed savant-like abilities solely in art, 2 participants possessed abilities in art and

music, and 1 participant possessed abilities in art and math. Within this subgroup, participants rapidly discovered abilities in drawing, painting, and sculpting. Two participants discovered mathematical abilities—1 specifically in calendar calculation and 1 with additional abilities in art. Three participants discovered musical abilities—1 in piano and guitar, while the other 2 possessed additional abilities in art. (See Figure 2.)

### Modes of Skill Realization

The survey included a section for respondents to list any coincidental or collateral circumstances they believed may have accompanied the skill realization. Six of 11 respondents (54.5%) mentioned such a circumstance, which included spasmodic dysphonia, menopause, fever, sepsis, early onset dementia and pernicious anemia, traumatic stress, and prior head trauma. Two respondents had mentioned menopause as possibly playing a role in the development of their skill, as did 2 respondents regarding spasmodic dysphonia. The participant who reported prior head trauma indicated that the event occurred 14 years prior to skill realization.

### Age at Skill Realization

The age of skill realization ranged from 14.9 to 79.8 years old. The mean was 44.6 years, with a standard deviation of 15.9 years. Outside the interquartile range, there were 3 outliers: 2 who had skill realizations at 19.0 and 26.8 years of age, respectively, and 1 who had skill realization at 79.8 years.

### Skill Realization Timeframe

All participants experienced a sudden bout of skill realization and compulsive skill development. The timeframe for sudden compulsion toward their newfound ability was described as less than a week by 5 respondents (45.5%), 1 to 2 weeks by 2 respondents (18.2%), 1 to 3 months by 3 respondents (27.3%), and over a year by 1 respondent (9.1%). The participant with skill realization “over a year” stated that “the artistic skill acquisition immediately followed a musical skill acquisition” within this timeframe.

### Time Spent on the New Skill and Compulsivity

Hours spent on the new skill varied from zero hours daily (n=3, 27%) to 1 hour (n=1, 9%); 1 to 3 hours (n=1, 9%); 3 to 8 hours (n=2, 18%); 8 hours per day (n=4, 37%). The time spent performing the ability after skill realization and control was rather polarized. Five respondents (45.5%) reported spending less than 3 hours per day performing compulsion(s) with much control; whereas 6 respondents (54.5%) reported spending more than 3 hours per day performing compulsion(s) with moderate control.

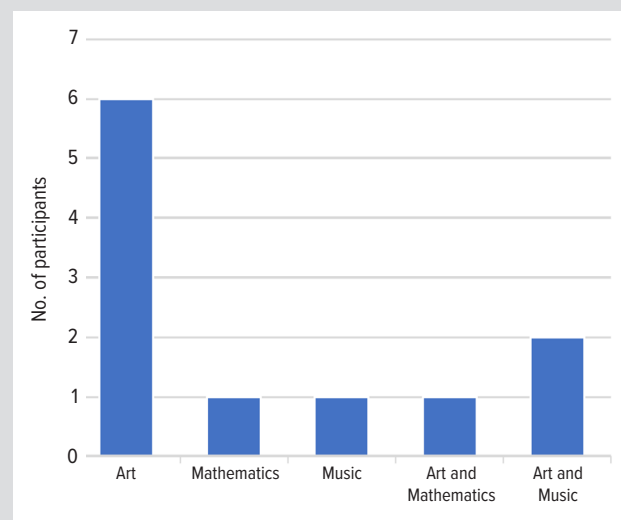
### Familial History of Savant Skill

Two of 11 respondents (18.2%) reported that a known family member held some level of skill in the participant’s particular savant skill (Table). One participant with a familial history of the skill wrote that both of their parents had “innate artistic abilities” and one of their brothers “was artistic from an early age” and

**Table.** Demographics and Skill Characteristics

Variables	N (%)
Sex	
Female	7 (63.6)
Male	4 (36.4)
Country of Residence	
Finland	1 (9.1)
Israel	1 (9.1)
Japan	1 (9.1)
Canada	1 (9.1)
United States	7 (63.6)
Compulsion	
Yes	7 (63.6)
No	4 (36.4)
Familial History of Acquired Skill	
Yes	2 (18.2)
No	9 (81.8)
Change in Ability Over Time	
Increase	10 (90.9)
Decrease	0 (0.0)
Neither	1 (9.1)
Synesthesia	
Yes	1 (9.1)
No	10 (90.9)

**Figure 2.** Quantity of Participants and Their Savant-like Skill Category/ Categories



“later went to commercial art school but quit drawing soon after and never picked it up again.” The final participant who reported familial skill stated that one of their parents “paints, but not with the accuracy or detail that I seem to have.”

### Prior Interest in Savant Skill

Three of 11 respondents (27.3%) reported interest in the acquired skill prior to skill realization. One of the 3 participants with prior interest in their musical skill described themselves as a “bonfire singer” with “crude piano skills” prior to skill realization. Another participant described their savant skill as their main hobby prior to skill realization, where their abilities rapidly and compulsively

advanced from drawing “basic line drawings, cartoons, and such” to “every fiber...every single bit of fur and change of hue” in a picture of a dog.

### Change in Savant Skill Proficiency Over Time

Ten of 11 respondents (91%) reported an increase in newly acquired skill over time (Table). One participant reported neither an increase nor decrease in skill ability over time, experiencing mild lessening of compulsivity in art and music abilities.

### Change in Memory Over Time

Six of 11 respondents (54.5%) reported some change in memory following skill realization. One of the 6 participants acquired synesthesia following skill realization and said that tasting or touching “anything that reminds [them] of [their] dreams” would trigger the recall of previous memories related to that stimuli; the participant would “feel, taste, and experience the moments like [they are] in them again.” Of the remaining 5 respondents, 2 experienced an increase in long-term memory ability, 2 experienced a decrease, and 1 experienced no change. A participant who experienced an increase in long-term memory recall and decrease in short-term memory recall stated, “[My] past had always been a huge blur to me...since [skill realization], I’ve been able to recall many of my childhood memories in detail.” In addition, 4 participants reported a decrease in short-term memory, with 1 participant denoting no change in short-term memory.

## DISCUSSION

In congenital savant syndrome, the extraordinary abilities surface most often in childhood and are superimposed—or grafted on—some underlying developmental disability. In acquired savant syndrome, there is a specific brain injury or other CNS event that precipitates the emergence of the new extraordinary skill or ability. In sudden savant syndrome, the extraordinary abilities surface suddenly without an apparent underlying disability or brain injury.

Many ordinary persons develop a new interest or hobby at various points in their life, often later in life. So, what differentiates sudden savant syndrome from those more ordinary life changes? Several things:

- The ability has an abrupt onset with no prior interest in or talent for the newly acquired ability.
- There is no obvious precipitating event, CNS injury, or disease.
- The new skills are coupled with a detailed, epiphany-type knowledge of the underlying rules of music, art, or math, for example—none of which the person had previously studied in detail. Sudden savants appear to know concepts without having previously learned them or suddenly gain a deeper understanding they had not had before.
- The skill is initially accompanied with an obsessive-compulsive component; there is the overpowering need to play music,

draw, or compute. It is as much a force as a gift, as is usually the case with both congenital and acquired savant syndrome.

- There is a fear the gift and compulsion are evidence of losing one’s mind and a tendency to hide the new ability from others rather than display it.

While the term “sudden savant” is used here, by definition savant syndrome always includes some underlying disability from autistic spectrum disorder or, in the case acquired savant syndrome, from some head injury or other CNS disorder. But in sudden savant syndrome, there is no underlying disability, so technically a better term for the abrupt emergence of the sudden extraordinary new ability might be “sudden genius.” Genius is a term generally used for the presence of extraordinary, prodigious abilities without underlying disability.

The underlying question for each form of savant syndrome is whether such capacity and ability savants demonstrate might reside dormant in everyone. The challenge is how to tap those hidden abilities without injury in the case of acquired savants, or more often and easily in the case of the sudden savant.

## CONCLUSIONS

This study reports the first observations and analysis of sudden savant syndrome. Neurotypical participants experienced sudden, rapid, and unprompted development of savant skills in the absence of brain injury, autistic spectrum disorder, or other developmental disabilities. This preliminary investigation using case reports of 11 individuals provides a glimpse into a previously unreported and uninvestigated condition. Further work is necessary to document the incidence, prevalence, and mechanisms of sudden savant syndrome, along with its implications for better understanding both brain function and human potential.

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