

Inside the mind of an autistic savant

- Celeste Biever, © 2009, New Scientist # 2689



The following article is an interview with savant Daniel Tammet taken from the New Scientist. You will find the following words in the article:

savant, relationship, mind, autistic, lumpy, ability,
intuitive, visualise, interconnected, realise,
understanding, remember

1. Match the words with the definitions below:

a. _____ (noun) - possession of the qualities (especially mental qualities) required to do something or get something done.

b. _____ (noun) - (psychiatry) an abnormal absorption with the self; marked by communication disorders and short attention span and inability to treat others as people.

c. _____ (adjective) - reciprocally connected coordinated, unified, operating as a unit.

d. _____ (adjective) - spontaneously derived from or prompted by a natural tendency.

e. _____ (adjective) - like or containing small sticky lumps; having lumps; not smooth and even in texture

f. _____ (verb) - perceive or understand (an idea or situation) mentally

g. _____ (noun) - a state of connectedness between people (especially an emotional connection) or things.

h. _____ (noun) - someone who has been admitted to membership in a scholarly field.

i. _____ (verb) - form a mental picture of something that is invisible or abstract

j. _____ (noun) - the part of a person that enables a person to think, feel emotions and be aware of things.

k. _____ (noun) - knowledge about a subject, situation, etc. or about how something works.

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1. _____ (verb) - to be able to bring back a piece of information into your mind, or to keep a piece of information in your memory.

2. Now choose from the list above a word that fits in the following quotes from English literature:

a. His _____ contained several millions of facts, packed too closely together for the light breeze of the imagination to draw through the mass.

Pandora, Henry James

b. Lincoln's superior _____ in statecraft, his rare tact and knowledge of men, and his capacity for moulding and directing public opinion, would doubtless have secured a more favorable result.

The Impeachment of Andrew Johnson

c. The fact was that Davies could not be brought to _____ that he had done anything very remarkable that day.

Riddle of the Sands, Erskine Childers

d. To spread good books about, to sow them on fertile minds, to propagate _____ and a carefulness of life and beauty, isn't that high enough mission for a man?

The Haunted Bookshop, Morley

e. The Bellman used to have the bowsprit unshipped once or twice a week to be revarnished, and it more than once happened that no one on board could _____ which end of the ship it belonged to.

The Hunting of the Snark, Lewis Carroll

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3. Here is a mixed-up list of the questions used in the interview. What can you find out about Daniel Tammet by reading the questions?

1. **To most people, the things you can do with your memory seem like magic. How do you do it?**
2. **Can you give an example of a "lumpy" number?**
3. **What can we learn from the way your mind works?**
4. **Do you think savants have been misunderstood - and perhaps dehumanised - in the past?**
5. **Do you make mistakes?**
6. **What can you say in Mänti that you can't say in any other language?**
7. **But how do you visualise a number? In the same way that I visualise a giraffe?**
8. **Why is it so important to get this right?**
9. **When did you first realise you had special talents?**
10. **You also excel at learning languages. How do you pick them up so quickly?**
11. **Can you give an example?**
12. **Why do you think you treat numbers this way?**
13. **You have created your own language. Why?**
14. **Do you have a bone to pick with the neurologist Oliver Sacks, who wrote about autistic savants? (*"to have a bone to pick with someone" is to want to talk to someone about something annoying they have done.*)**

4. Now match the questions with the correct paragraph in the article below.

a.

Very often the analogy has been that a savant is like a computer, but what I do is about as far from what a computer does as you can imagine. This distinction hasn't been made before, because savants haven't been able to articulate how

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their minds work. I am lucky that the autism I have is mild, and that I was born into a large family and had to learn social skills, so I am able to speak up.

b.

At the age of 8 or 9. I was being taught maths at school and realised I could do the sums quickly, intuitively and in my own way - not using the techniques we were taught. I got so far ahead of the other children that I ran out of textbooks. I was aware already that I was different, because of my autism, but at that point I realised that the relationship I had with numbers was different.

c.

The response that people often have to what I can do is one of "gee whiz", but I want to push back against that. One of the purposes of the book I've just written, *Embracing the Wide Sky*, is to demystify this, to show the hidden processes behind my number skills. I have a relationship with numbers that is similar to the relationship that most people have with language. When people think of words, they don't think of them as separate items, atomised in their head, they understand them intuitively and subconsciously as belonging to an interconnected web of other words.

d.

You wouldn't use a word like "giraffe" without understanding what the words "neck" or "tall" or "animal" mean. Words only make sense when they are in this web of interconnected meaning and I have the same thing with numbers. Numbers belong to a web. When somebody gives me a number, I immediately visualise it and how it relates to other numbers. I also see the patterns those relationships produce and manipulate them in my head to arrive at a solution, if it's a sum, or to identify if there is a prime.

e.

Every number has a texture. If it is a "lumpy" number, then immediately my mind will relate it to other numbers which are lumpy - the lumpiness will tell me there is a relationship, there is a common divisor, or a pattern between the digits.

f.

For me, the ideal lumpy number is 37. It's like porridge. So 111, a very pretty number, which is 3 times 37, is lumpy but it is also round. It takes on the properties of both 37 and 3, which is round. It's an intuitive and visual way of doing maths and thinking about numbers.

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g.

When I was growing up, because of my autism, I didn't make friends. Numbers filled that gap. The numbers came alive. My mind was able to pick out patterns and to make sense of them. It was similar to how a child would acquire his first language.

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h.

Absolutely. All the time, because of my intuitive approach. In the book I give an example of how another autistic savant thought that 10,511 was a prime number. That's the kind of mistake I could make, because it looks prime. However, it is divisible by 23 and 457. It's a forgivable error and not a rookie mistake.

i.

The differences between savant and non-savant ability have been exaggerated. Savants are not freaks, cut off from the rest of humanity. The thinking of savants is an extreme form of the kind that everyone has. The aim of my book is to show that minds that function differently, such as mine, are not so strange, and that anyone can learn from them. I also hope to clear up some misconceptions about savant abilities and what it means to be intelligent or gifted. There is immense potential, and instincts for language and numbers, in everyone. We could train these intuitions - especially at an early age, but also at any age - and learn how to break down preconceptions about how numbers should be thought about or how language works. Then, though people might not necessarily be able to do all the things I can do, they will be more comfortable with language and mathematics, and learning and education in general.

j.

I have synaesthesia, which helps. When there is an overlap between how I visualise a word and its meaning, that helps me remember it. For example, if a word that means "fire" in a new language happens to appear orange to me, that will help me remember it. But more significant is my memory and ability to spot patterns and find relationships between words. Fundamentally, languages are clusters of meaning - that is what grammar is about. This is also why languages interest me so much. My mind is interested in breaking things down and understanding complex relationships.

k.

My language - called Mänti - is about my love of words. If you have that relationship with words, you will always want to express yourself but not be able to find the word in your native language. I speak many languages and I still can't always find the right sentence in any language. Mänti is about having that freedom to play with language, to see what would happen if I had a word for this or that.

l.

I like the word "kellokult", which means "clock debt". It's a way of emphasising that when you are late for something, it incurs a debt, you owe someone that time. There is also "rupuaigu", which means "bread time". It's a period of time, roughly an hour, that is the time it would take for bread to bake in an oven. What I like is that it is the same for everyone in the world. It's a more intuitive way of thinking about an hour.

m.

Oliver Sacks wrote a famous account of autistic savant twins who counted 111 matches in an instant, as they spilled to the floor. Because he is famous, this has

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gained a lot of traction. People have devised theories to explain how savants might do this. But the likeliest explanation is that savants don't instantly discern large quantities of objects at all. This ability has never been demonstrated scientifically, nor has it ever been reported in another savant. I think Sacks's account - which has been so influential - is totally wrong.

n.

The abilities of savants have been pigeon-holed as somehow supernatural, almost inexplicable and certainly not as part of the natural continuum of human talent. This has deformed how the public and, crucially, scientists, view the brain and human potential. It is insulting and potentially dehumanising. The future is an immensely scary place, full of all kinds of challenges. We will need every kind of mind, so why not bring along every kind of intelligence?

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KEY

Exercise 1

- a. ability
- b. autism
- c. interconnected
- d. intuitive
- e. lumpy
- f. realise
- g. relationship
- h. savant
- i. visualise
- j. mind
- k. understanding
- l. remember

Exercise 2

- a. mind
- b. ability
- c. realise
- d. understanding
- e. remember

Exercise 4

- a. 4
- b. 9
- c. 1
- d. 11
- e. 7
- f. 2
- g. 12
- h. 5
- i. 3
- j. 10
- k. 13
- l. 6
- m. 14
- n. 8