

This summary is from the book “Different Kinds of Minds” by Temple Grandin PhD. ISBN 978-0593352878. I really enjoyed this book. It is targeted at 8-12 year-olds, but is not a kids’ book. It is about 200 pages and I found it a pretty quick read. For those not familiar with Dr. Grandin, she is a doctor of Animal Science teaching at CSU in Fort Collins. But more importantly, she is autistic herself. The movie about her “Temple Grandin” was made in 2010 and is very much worth watching.

The book broadly talks about the different sorts of minds/brains that are out there and how they work. Because of her native intelligence, her mother, many teachers and tutors, and mentors she was able to make it through the educational and business environment that was extremely unsupportive and become a respected leader and teacher and consultant.

Introduction:

Temple opens with a question we’ve all been asked or have asked: ‘what to want to be when you grow up’? She thinks this is the wrong question. It should be ‘what are you good at’? By asking that question she sees that gives clues to how your mind works.

She goes on to describe her childhood and growing up: Not talking until age 4. Not writing until age 8. She describes how she thinks – almost purely visual thinking. This was all at the time that society view her and similar children as special, brain-damaged, trouble, anti-social, and so on.

She mentions Decartes’ famous quote – ‘I think, therefore I am’. His writings said that what separates us from the animals is language. In her case, she is not very verbal, but has learned to operate in that space. For her she feels that for her and others the phrase needs to be broader and include ‘I think in pictures, therefore I am’.

She closes the introduction with comments about our education system focusing on verbal, mathematics, and test taking skills. What she sees that this has done is create whole generations that don’t build things and don’t fix things. We are losing our ability to maintain our society and fix our infrastructure. And that is very scary.

Chapter 1: What Is Visual Thinking?

What is Autism? It has often been defined as a spectrum disorder – there are a range of characteristics and impact. Temple thinks it is more correct to describe autism not as a disorder but as a behavioral profile. People on this profile often have difficulty with social skills, speak later, and have repetitive behaviors. The CDC estimates that one in 36 children in the US are affected by autism. It is not uncommon for autistic people to be attracted to science, engineering, art, mathematics, and design.

One way many people think is verbally. Examples of Verbal Thinkers behaviors are:

- Do you think in words?
- Are you organized?
- Is your work/room neat?
- Do you remember to hand in your work?
- Do you learn best from lectures and books?

Another way many people think is visually. Examples of Visual Thinkers behaviors are:

- Do you think in pictures and images instead of words?
- Are you and your spaces messy, but you are able to find what you want in the disorder?
- Do you like puzzles, chess, drawing, creating?
- Do you learn best from images, charts, diagrams, building?

Most people are a combination of these two thinking styles. One of the characteristics of autistic people is that they are often Visual Thinkers. Depending on how you think even affects your dreaming. For Temple, her first language is pictures. Her second language is words. Unfortunately for her and many Autistic and Visual Thinkers, the world is built around Verbal Thinkers. There are words everywhere in our world. Autistic people often are monotone and don’t recognize the verbal clues about what is being said. (Think Sheldon from ‘big bang’.)

She discusses various aspects of architecture of the brain:

- Speech generation – Broca region
- Speech comprehension – Wernicke region
- Motor/motion control
- Vision/sight – occipital lobe
- Right brain/Left brain – right tends to be visual/creative/artistic, left tends to be verbal/logical/analytical
- Switchboard between left and right – corpus callosum

It is possible, when the brain is damaged in a particular way, a person can talk, but not understand what is being said. Or a person can understand, but not speak. And some people cannot visualize even though they can see – aphantasia. And there are different kinds of Visual Thinkers: Object Visual Thinkers think in images and real-world objects. Spatial Object Thinkers think in terms of the idea or abstraction of the image.

Which type are you?

1. Do you think mainly in pictures instead of words?
2. Do you know things without being to explain how or why?
3. Do you solve problems in unusual ways?
4. Do you have a vivid imagination?
5. Do you remember what you see and forget what you hear?
6. Are you terrible at spelling?
7. Can you visualize objects from different perspectives?
8. Do you have trouble organizing?
9. Do you often lose track of time?
10. Would you rather read a map than follow verbal directions?
11. Do you know how to get places you've visited only once?
12. Is your handwriting slow and difficult for others to read?
13. Can you sense what others are feeling?
14. Are you musically, artistically, or mechanically inclined?
15. Do you know more than others think you know?
16. Do you hate speaking in front of a group?
17. Did you feel smarter you got older?
18. Are you addicted to your computer?

Temple says that if you answered 10 or more with yes, you are likely to be a visual thinker. For me, many of these were not a simple thing to answer. For example, I did not like public speaking. I had to give a speech at my high school graduation. The trick for me to get through it was to imagine that they were not friends, family, people in the crowd. I viewed them as a crowd thing. After I started working at HP, I recognized I needed to be able to be stronger as a speaker. One of the reasons I did a rotation through marketing was improve my speaking.

Chapter 2: Screened Out

This chapter is a little challenging for me to capture. I feel it is mostly about our educational system and some of its' challenges and shortcomings. A big aspect is the emphasis on class room/verbal learning. There are still some hands-on classes but they are often not viewed as a good use of time or explored enough. In high school, I did take typing (I think I was the only boy in the class). But that turned out to be one of my most useful classes. But I did not take shop. In retrospect I wish I would have – I love making and building. Temple asks again about what you like to do. It is important to have exposure to different things to get that figured out. In school there used to be a lot of field trips – to businesses, museums, etc. These really help expose you to different areas. (I actually arranged in high school to visit our local phone company, the regional big phone facility, and a visit to the local IBM office.)

In history, broadly, apprenticeships have been great. Many of the great historical figures were apprenticed. In Europe, there is still a strong apprenticeship orientation. Young people get trained (and paid) as apprentices and then have a job when they are done. In the US, they have diminished a great deal. Related to this are internships. Often times they are un-paid, but great opportunities. I encourage everybody to do internships or summer jobs or shadowing for things they want to do. I did an internship at Tektronix during my master's degree. It was a great experience (and was a paid position). It really helped and I think it contributed to my getting hired at HP. My late wife, Virginia, was back in college for her degree in Interior Design. She did an internship/job at a local store (tile, floor covering, etc.). She discovered that she loved the design work, but really struggled working with people who had terrible taste. She quickly changed her major... ☺

Math is hard for a lot of people (both verbal and visual). Especially Algebra. But it is a barrier for many and not necessarily the appropriate thing for them to take given their career directions. Often other topics are better suited – Geometry, Statistics, etc. And many times, how math is taught is wrong for the type of learners. In college, after calculus series, I took differential equations. It was taught totally mathematically/symbolically. I passed, but it was a challenge and I didn't get it. Later I took an upper-level electronics circuit class that used differential equations. I had a physical thing I could relate it to... It made sense.

Chapter 3: Clever Engineers

Temple has been really interested and impressed with ‘clever engineer’ – the creators and inventors of world changing ideas, machines, processes, etc. She talks about Thomas Edison, Thomas Gutenberg, Samuel Colt, and more. She initially thought that innovation came from big corporations. But more often than not, it is individuals outside of companies or at low level jobs inside of them. Temple is very worried about where new ‘clever engineers’ are coming from. We don’t train or maintain people and equipment for things that we invented. They get outsourced. She closes with more about apprenticeships and internships and where and how to find them.

Chapter 4: Complementary Minds

Often times great ideas come, not from a lone individual, but a complementary pair. With very different, but complementary skills, these pairs do great things. Examples include: Hewlett and Packard (HP), Steve Wozniak and Steve Jobs (Apple), and more. A key, and challenging, thing for people to do is to find complementary people with which to collaborate.

Another issue is the divide between ‘suits’ and ‘techies’ – the management and the creators. Collaboration has failed on epic levels because of this divide. There has to be trust and understanding between the collaborators. And both sides need to be able to step back from their egos and work towards the ‘bigger’ goal of their vision. Related to this type of collaboration, there is also the ‘architect’ and ‘engineer’ dichotomy. The engineer is about the details and making things work. The architect cares about the grand vision. Often the engineer can’t separate function from beauty (or aesthetics). Where the architect is often driven by beauty. But they are both important

Chapter 5: Defining Genius

Temple lists out a range of ‘geniuses’ and talks about their background and characteristics. She identifies them as strange, difficult, and other terms and makes the point that they were probably on the spectrum. She also talks about the efforts that they and the parents and mentors went through to become the people they became. She also strongly suggests that hands-on activities, visual thinking, mechanical awareness, and perseverance were part of their success as well.

Note that although there may be some common denominators, but these people were different from each other as well. Temple goes on to talk about nature vs nurture. They both have big impacts on how we turn out but in terms of these behaviors and traits, she makes the point that they are driven more by nature.

Chapter 6: Visualizing Disaster

Bad things happen. Companies want to avoid them. Temple describes several disasters (really big bad things): Chernobyl, 3 Mile Island, Fukushima, space mission failures, Boeing 737, and more. She makes the case that visual thinkers by nature look at something and see the possible problems that could happen. And in our society, the source of these disasters is money. Management, corporations, and people have prioritized profit and money over safety. As a result, cost cutting goes to ridiculous levels: fewer people, less training, cheaper components, faster turn-around, and so on.

She sounds an alarm about hackers being a very serious threat in the future. This is true, given the amount of computing and software that runs our businesses, schools, and infrastructure. We’ve already had a variety of failures around this – ransomware, power distribution, and more. Temple closes the chapter pointing out that every system should have a non-electronic off switch that people can get to. An example she gives was around VP Dick Cheney – when he had his pace-maker put in for his heart, they turned off the wireless access. A good idea.

Chapter 7: Animal Thinking

Dr. Grandin has a PhD in animal science and has worked in and consulted in agricultural sector. She has very strong thoughts about animals and animal cruelty. In term of animals there is a spectrum of people that range from those who feel animals are just dumb creatures through to those that ascribe more emotions and intelligence to animals. There are many creatures that clearly self-aware – apes, elephants, dolphins, whales. Personally, I see some dogs

and cats that are smarter than some people. ☺ There are the arguments about language. I was surprised that Temple did not mention some of the research with parrots and simians. (To be clear, it was research and not definitive.).

In terms of what animals ‘think’, research was done by Jaak Panksepp and came up with these 7 emotion categories:

1. Seeking/exploration
2. Rage/anger
3. Fear/anxiety
4. Lust/mating
5. Care/nuturing
6. Panic/grief
7. Play/socialize

Temple mentioned that in the 1990s animal scientists were not allowed to use the words ‘fear’ or ‘emotion’. She used the term ‘behavioral agitation’. She has worked very hard at ethical treatment of animals and the reduction of distress – even in processing plants.

Tim’s thoughts and summary

I think that “Different Kinds of Minds” is a good book and would be helpful for kids and parents that are dealing with autism. It also gives a flavor of the different way people think. It is also very good at giving examples of people and inventions that are very relatable.

One of my bosses at HP years ago was Chuck House (a general manager of the division I was in). One thing that I noticed was how he did presentations that were interesting and engaging. Part of this was he had a full-time employee (I think his name was Dick) who prepared his slides. I don’t know if it was Chuck or Dick, but the structure of the slides was very engaging – each slide had some or most of:

- An image, drawing, or picture
- A chart
- Numbers or a small spread-sheet
- Bullet list items
- A catch-phrase
- And Chuck would have an ‘audio sound bite’

In the context of this book, Chuck communicated to the different types of thinkers in the audience: visual, analytical, verbal, etc.