



The Mind's Eye

Category:
Neuroscience

Oliver Sacks (OS)

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General Bookthoughts:

It is probably the wrong thing to do to summarise thoughts on this book. Sacks writes stories about people's lives, rather than delivering a compendium of facts. Extracting facts, in some sense, reduces the experience of this book.

We strongly recommend you read it – it tells incredible stories about people who usually rely heavily on their eyes (musicians, authors etc.) and how they end up losing some of the visual abilities. In almost all cases it is not blindness that is the problem – it is to do with interpreting the messages received via the eyes. Indeed, one of the only cases involving blindness is sadly the one of Dr Sacks himself.

This is a wonderful book, very touching.

Specific Bookthoughts:

- Many of the cases we are introduced to are as a result of brain degeneration. This can have a multitude of causes, such as strokes, a tumour, an infection, some genetic basis, an injury of some sort etc.
- Agnosia: Loss of the ability to interpret sensory stimuli, such as sounds or images. Aphasia: Partial or total loss of the ability to articulate ideas or comprehend spoken or written language, resulting from damage to the brain caused by injury or disease. Prosopagnosia: face blindness.
- We meet a lady who is a wonderful concert pianist. She started losing the ability to read music and had to rely on her memory. She later started losing the ability to read and to recognise objects, showing degeneration towards a general visual agnosia. The only way she could cope was by memory – her life was built around putting things in the place and leaving them there. Her apartment was meticulously memorised. She could see colours and connect colours with objects, which became a quasi filing system in the home (everything was organised by colour). We are reminded that there is nothing wrong with her eyes – the visual areas of the brain are the problem.
- Aphasia is the loss of speech, although as Dr Sacks points out, it is actually the loss of language (a deaf person who has a stroke and has aphasia, will lose the ability to use sign language). Aphasia does not always interfere with intellect or reasoning – these faculties could be as strong as ever. They are often associated with damage to Broca's area. However, there is a chance that aphasic patients are dubbed as losing intellect (because of their inability to talk). Aphasics, like other cases where a part of the brain is diminished, find a heightening of skills in other areas. They become incredibly good at reading faces and the related intentions of individuals. Some become great lie detecting.
- We are introduced to a celebrated author who loses the ability to read (alexia, a form of visual agnosia), but still maintains the capacity to write. Reading, when you think about it, draws on a significant set of brain functions. You see a letter, you group letters as words, you place meaning on the word, you digest the sentence, it evokes other senses (perhaps sounds) etc. It involves sight, memory, other senses, reasoning, emotion etc. It follows that there can be any number of causes for alexia. It is also normal for authors to be prolific readers – which is a problem (some default to audio books when they have alexia). It is interesting how few people find the same level of satisfaction from an audio book – it is the same story, after all. Perhaps it is the ritual of reading that we like? Or the fact that listening to an audiobook is more antisocial? Or that we are in control, when we read.
- Face blindness (prosopagnosia) is touched on. We are introduced to the first of two personal experiences for Dr Sacks. He suffers terribly from face blindness, seemingly a genetic predisposition. One way he gets around it is by association – the neighbour is recognised when with their dog etc. There is a part of the brain that seems dedicated to face recognition (the fusiform gyrus).
- Capgras Syndrome is also touched on – where the face is recognised, but the emotional connection is missing. The result is the patient thinks the person is an imposter. An example is someone who sees their mother – the face is the same, but there is no emotional recognition that it is her mother. The emotions win the battle and the person is considered an imposter

(although it is really their mother). Oddly when the mother goes to another room and she is heard, not seen, then they are no longer considered imposters. It is a visual syndrome.

- Stereoscopes were very popular in the Victorian Era (two pictures were presented, one to each eye, simultaneously and the brain then merged them into 3d). Our brains take the two images received from either eye and merge them into a three dimensional representation. We see in stereo because our eyes face forward, as they do on most predators. Prey, we are reminded, generally have eyes in the sides of their heads which helps with peripheral vision, a more useful adaptation than stereo (for them). Many people do not have the ability to see in stereo. To people without stereo vision, the world appears flat, as it did to the one patient of Dr Sack's (called Sue). She had no depth to her visual field or the ability to judge what is near from far (far objects just looks smaller). Sue had been born with strabismus and had it surgically corrected as a child. But only in later life did she have vision therapy and some new glasses (polaroids with a prism effect, creating two distinct images for her). She was able to merge these new pictures into 3D. Over time, her stereo vision resumed more fully – indicating that the brain did not lose the ability at a young age and was probably plastic (it could reinvent its processes or change them).
- Oliver Sacks is a member of the NY stereoscopic society, which is a sad introduction to this next point. One day, whilst watching a movie, he found that a large part of the vision in one eye was blacked out, which led to him being diagnosed with a tumour (on his one retina). After operations, laser etc. the bulk of his vision in his one eye has been lost. This is sadly ironic, for a man who helps others with eye problems and is an ardent fan of stereoscopy. He lays out a very touching and personal journal of his thoughts and problems as he faced them each day – how much vision he had, his anger at doctors delaying treatment, the worry of cancer spreading etc.
- Towards the end of the book, we encounter numerous examples of people who are deprived of a sense (say they are blind), who end up developing an intensity of the other senses (say of smell or touch).
- In the fine print, I found it interesting that some people who are congenitally blind (at birth) often have highly visual dreams.