
Brains and weird science

Strange effects caused by brain damage

When a person has a stroke (or other brain damage) in late childhood or adulthood there is, first, a loss of function – old established processes have been damaged or obliterated. This is usually all we think about when we hear a person has had a stroke: what has been lost?

However, a second process begins soon after the stroke has occurred.

- <http://jnnp.bmj.com/content/49/1/11.full.pdf+html>

The plasticity of the brain means that rewiring is underway, and a lot of the damage, especially in smaller infarctions, is repairable. Other losses can be regenerated by neural rewiring. Sometimes, though, the rewiring creates differences between the old brain and the new. Some of the weirder differences are listed here.

Foreign Accent Syndrome

The stroke victim develops a new accent after the stroke.

- <http://news.bbc.co.uk/1/hi/health/6407161.stm>

Handedness

Where the stroke leaves arm and hand motor function unaffected, there is still sometimes a change in handedness, especially in children.

(V Ganesan, A Hogan, N Shack, A Gordon, E Isaacs and F J Kirkham (2000). Outcome after ischaemic stroke in childhood. *Developmental Medicine & Child Neurology*, 42, pp455-461.)

- <http://onlinelibrary.wiley.com/doi/10.1111/j.1469-8749.2000.tb00348.x/pdf>

Changed personality

Key memories, tendencies and inhibitions may be wiped out by the damage, changing the anchors on which a personality is built. Phineas Gage is the classic case here. Personality changes caused by damage are different to depression brought on by the fact the patient is ill, but they are hard to separate.

- http://en.wikipedia.org/wiki/Phineas_Gage

Changed sexuality

This is an extreme case of changed personality, and is very unusual; but it has been recorded.

- <http://www.metro.co.uk/news/881128-19-stone-rugby-player-suffers-stroke-and-then-becomes-gay-hairdresser>

Exotic Brains

Another cause of “weird brains” is what nature gave us – some people are walking around with very non-standard brains. Some of the most extreme of these are listed here.

Hydrancephaly and the missing cortex

In 1965, John Lorber wrote about two children with hydrancephaly (a condition where large parts of the brain pan are filled with fluid instead of cortex). After shunts were fitted, both began to

develop more normally, although it was too early to tell if completely normal development was possible.

John Lorber (1965). Hydranencephaly with Normal Development. In *Develop. Med. Child Neurol.* 1965, 7, pp628-633.

- <http://onlinelibrary.wiley.com/doi/10.1111/j.1469-8749.1965.tb07839.x/abstract>

In 1980, Roger Lewin followed up on Lorber's work, and showed that people with quite minimal cortex area could nonetheless have higher-than-average IQs.

Roger Lewin (1980). Is your Brain Really Necessary? In *Science*, vol 210, 12 December 1980, pp1232-1234.

- <http://science.sciencemag.org/content/210/4475/1232>

Missing cerebellum

In 2014, Chinese doctors identified a woman of 24 whose cerebellum never formed. Usually this condition causes death soon after birth, or significant disability for survivors. The woman has been living a normal life and, apart from slight slurring of speech and some motor deficiency, there were no cognitive problems.

- <http://www.newscientist.com/article/mg22329861.900-woman-of-24-found-to-have-no-cerebellum-in-her-brain.html#.VCP80pUtCUk>

Some interesting websites to test your brain

Visual illusions websites

So you think you see what is there? These sites will show you otherwise. The next time someone describes themselves as, "what you see is what you get", tell them they are just an optical illusion.

- https://en.wikipedia.org/wiki/Optical_illusion
- http://www.huffingtonpost.com/2013/05/23/10-optical-illusions-that-will-blow-your-mind_n_3307500.html
- <http://www.wired.co.uk/article/optical-illusions-science-perception>

Audio illusion website

What you hear and what you think you hear are two different things. As with vision, your brain interprets sound rather than directly hearing it.

- <http://www.sciencedirect.com/topics/neuroscience/dichotic-listening>

Dichotic listening

Is your language in your left brain, your right brain, or spread about? Test yourself at:

- www.linguistics.ucla.edu/people/schuh/lx001/dichotic/dichotic.html