

Localisation of function essay

[Science](#), [Biology](#)



Localisation of function is the term used to briefly suggest that different areas of the brain each have individual roles and control their own functions (e. g. certain ‘ jobs’ are localised to different areas of the brain.) An example of this is brain hemisphere asymmetry, the phrase meaning that both the left and right hemispheres. The left side is known to control your logical thought such as language and analytical processing, as well as the motor functions of the right side of your body including the right visual field; the right controlling such things as emotion and creative ability, and vice versa in regards to the motor functions.

. This in itself shows us that different areas must control different functions otherwise the theory of brain asymmetry would be ineligible. However some similarities occur, as each side has areas which make up ‘ lobes’, broad parts of the brain categorised into doing specific things, which run as strips across both hemispheres.

These are the lobes, and are: Frontal Lobe- Control centre for voluntary movement is located here, also holds aspects of personality and ability making decisions etc. Parietal Lobe- Control centre for sensory perception is located here, . Occipital Lobe- Control centre for visual perception. Temporal Lobe- Centre for analysis of auditory signals and memory. Evidence to support localisation of function occurs in such cases as Phineas Gage was an introvert and a shy man who suffered massive head injuries, destroying large portions of his frontal lobe.

Surprisingly however he survived, but it was reported by his colleagues that his behaviour had become rash and aggressive. Two possible explanations

are offered in regards to this, either that localisation of function allows us to presume that the area damaged controlled his behaviour, or that the emotional trauma of his accident may have caused the sudden change in his attitude and personality. Such case studies are also limited however in the sense that they only provide single accounts rather than numerical data which is more reliable.

Some areas also work in unison, such as the language centres known as Broca's and Wernicke's areas. These areas are in largely different areas of the brain and yet both control aspects of language, one of which is the joining of words to form coherent sentences. While this is evidence to support that localisation of certain functions is in fact correct it also implies that some complex functions such as speaking are distributed across multiple areas within the brain. This basic model of left and right hemispheres with different areas and lobes is true to the majority of human beings, but there are however recent breakthroughs in medical operations that can leave people being untrue to the standard model of a brain.

Radical operations such as a hemispherectomy remove up to the whole of one hemisphere within a patient to combat such ailments as epilepsy. On first hearing this it is common to presume a person cannot function without any part of the brain if localisation of functions is correct, however at an early age a child's brain is capable of adapting to the loss of one hemisphere by 'rewiring' its functions and network of electrical impulses. This process is called plasticity, and its method is still considered a grey area in the field of biology. Limitations to our understanding of areas and their functions are that

using case studies in which a person has recieved damage to the brain only in fact tells us the manner in which that person functions AFTER damage, which is not necessarily explaining what the part does but rather what the brain does without the part.