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NeuroScience Model used in study of Feeling of behaviour

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ABSTRACT

Neuroscience uses imaging of brain activity and other techniques to infer details about how the brain works. The brain is thought as 'black box'. Much like computer science, economics has both theoretical and experimental modes of inquiry, and a useful parallel may be drawn linking these modes in either discipline. Researchers will ever have the means of measuring directly the feelings of the human heart. It is from the quantitative effects of the feelings that we must estimate their comparative amounts. This paper reviewed the works of human feeling for predicting human behavior.

Key words: Experimental Economics, White and Gray Matter,and Lobes

1. INTRODUCTION

Experimental economics is used to investigate how humans behave. Experimental economics are familiar with the computer science related to validating theories, suggesting new theories, and soforth [1-2].

This paper reviews how neuroscience can utilize economics behaviour.For the computer sciece researchers, economc experiments providesinsight into realistic behaviors by human participants and their expected outcomes.August 2, 2004. Participants ,at the Russell Sage Foundation-sponsored conference on Neurobehavioral Economics (May 1997) at Carnegie-Mellon, the Princeton workshop on Neural Economics December 8-9, 2000, and the Arizona conference in March 2001, discussed about effect on neuroscience on the behavior of human being. The brain lobe structure is shown in figure1.

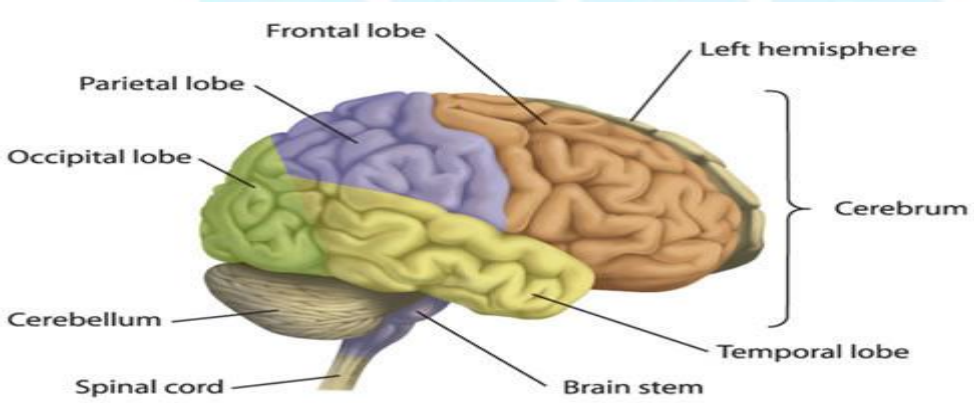

Figure 1 Areas of Human Brain

2. FUNCTION OF LOBES

We now explain the function of each lobe[4].

Within the frontal lobe there aresubstructures and these substructures are used by human for attention and thought, voluntary movement, decision–making, and language. Symptoms of tumours affecting the frontal lobe can include:

- Personality change
- loss of inhibition leading to offensive behaviour which is out of character for that person e.g. swearing, rudeness, inappropriate sexual behaviour
- Irritability
- Aggression
- loss of interest in life
- Difficulty planning or organising
- Weakness of one side of the face or body
- Problems walking
- Difficulty speaking

The parietal cortex indicates an important role in integrating information from different senses to build a coherent picture of the world. It includes:

- touch, pressure, temperature, and pain)
- spatial attention
- spatial mapping
- number representation
- Associated cognitive disorders

Symptoms of tumours in this area include:

- Loss of sensation in part of the body
- Sensory or motor neglect – e.g. a person with right sided sensory neglect will not respond to a sound from the right, gesturing by someone standing on their right or a touch to the right side of the body. They will respond normally to these stimuli on the left side.
- Difficulty speaking or understanding speech
- Problems with reading and/or writing

The occipital cortex is the primary visual area of the brain. It includes:

- vision

This area is responsible for vision; symptoms include problems with or loss of vision on one side. Blindness that is caused by damage to the visual area of the brain is called ‘central’ or ‘cortical’ blindness.

The temporal lobes contain a large number of substructures, whose functions include

- Recognition

- Perception (hearing, vision, smell)
- Understanding language
- Learning and memory
- Associated cognitive disorders
- Schizophrenia is the cognitive disorder most closely aligned to temporal lobe dysfunction.

Symptoms of tumours in this area include:

- Fits
- Short term memory problems
- Inability to recall words

The cerebellum monitors and regulates motor behaviour, particularly automatic movements. Some recent studies have associated the cerebellum with cognitive functions, such as learning and attention. It has the functions:

- coordination of voluntary movement
- motor–learning
- balance
- reflex memory
- posture
- timing
- sequence learning

The brain stem can organize motor movements such as reflexes, it coordinates with the motor cortex and associated areas to contribute to fine movements of limbs and the face. It has functions like

- maintaining homeostasis by controlling autonomic functions (including blood pressure, breathing, digestion, heart rate, perspiration and temperature)
- alertness
- sleep
- balance
- startle response
- Associated cognitive disorders
- double vision
- nausea
- sleepiness
- weakness on one side of the body.

However, because so many nerves go through the brainstem, problems here can cause a wide range of symptoms.

3.PROPOSED VIEW OF BEHAVIOUR OF BRAIN

The idea that people have specialized systems that are invoked in specific situations could have dramatic consequences for economics. The standard model of economic behaviour

assumes that people have a unitary set of preferences which they seek to satisfy, and economists often criticize psychology for lacking such a unified perspective. The existence of such selectively-invoked, specialized, systems, however, raises the question of whether a unified account of behaviour is likely to do a very good job of capturing the complexities of human behaviour.

We know that brain carry information through the body by neurons. We can imagine two types of circuits may present in the brain for information transmission. These circuits are Synchronous Sequential Circuits and Asynchronous Sequential circuits.In particular, when two distinct groups ofneurons convey different information about the external world, the resulting perceptual judgment often adopts the information of one neuronal group and entirely suppresses the information carriedby the other.

In this paper Empirical models are used for brain lobe for finding behaviour to be used with data i.e. white and graymatter[5]. The fundamental model is mathematical, exactly as described above. With an empirical model, however, data is gathered for the variables, and using accepted statistical techniques, the data are used to provide estimates of the model's values. If histogram is generated then frequency of occurrence signals may be calculated.

An interpolation methods and complement are used to resize the image and complete separation between brain and skull of the MRI of image. Remove all connected component except maximum area connected component because maximum area contains only brain as one pixel. As the binary image my wrong evaluation that's why a quick hull algorithm for convexhull are computed in which the entire pixels inside the convexhull are set to 1 and outside it are set to zero. Then this binarized image multiplied by the original MRI of brain image and gets the MRI of brain without artefact and skull. After that this image is binarized using standard deviation approach and again multiplied pixel wise with original image. Now the image contains only gray matter and white matter, gray matter relatively shaded region than white matter i.e. white matter have brighter than the gray matter. Using the previous concepts white matter has higher intensity than the gray matter. Thus calculate the total intensity and mean intensity. Mean in calculated by total intensity divided by total number of pixel without black pixel. Here total number of pixel is calculated without black pixel because black pixel contains zero intensity (main region of white and gray matter contain no zero intensity). Depending on the mean intensity, the pixel intensity above mean value selected as white matter and pixel value below or equal to the mean value selected as gray matter.

Finally, as the center of gravity in neuroscience research shifts from elementary cognitive processes to the study of so-called higher functions — reasoning, social inference, and decision making — neuroscientists will increasingly reference, and draw inspiration from, the conceptual apparatus of economics, a unique distillate of our century-long reflection on individual and strategic behaviour.

4.CONCLUSIONS

Experimental economics is used to investigate how humans behave. Experimental economics are familiar with the computer science related to validating theories, suggesting new theories, and soforth. This paper reviews how neuroscience can utilize economics behaviour.

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