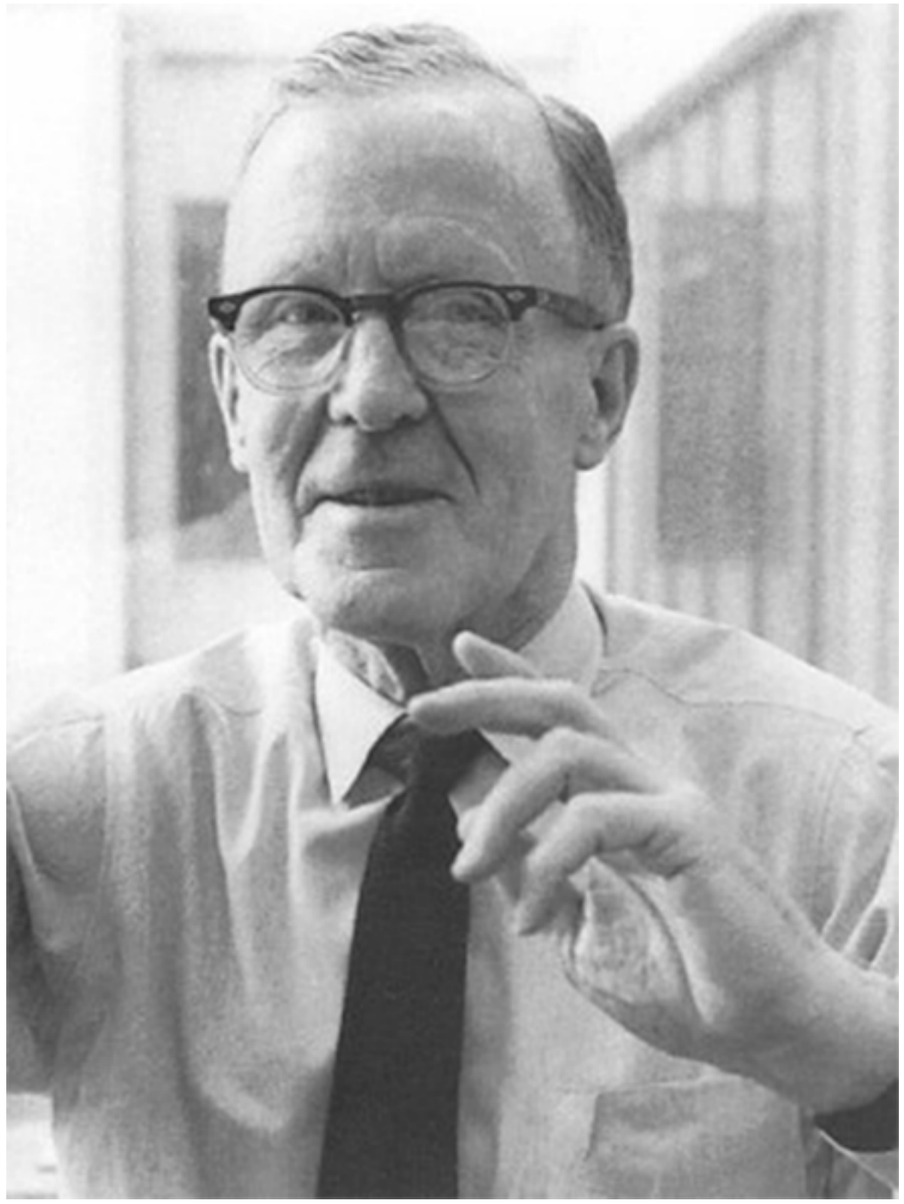
Biopsychology as a Discipline



steven j. barnes

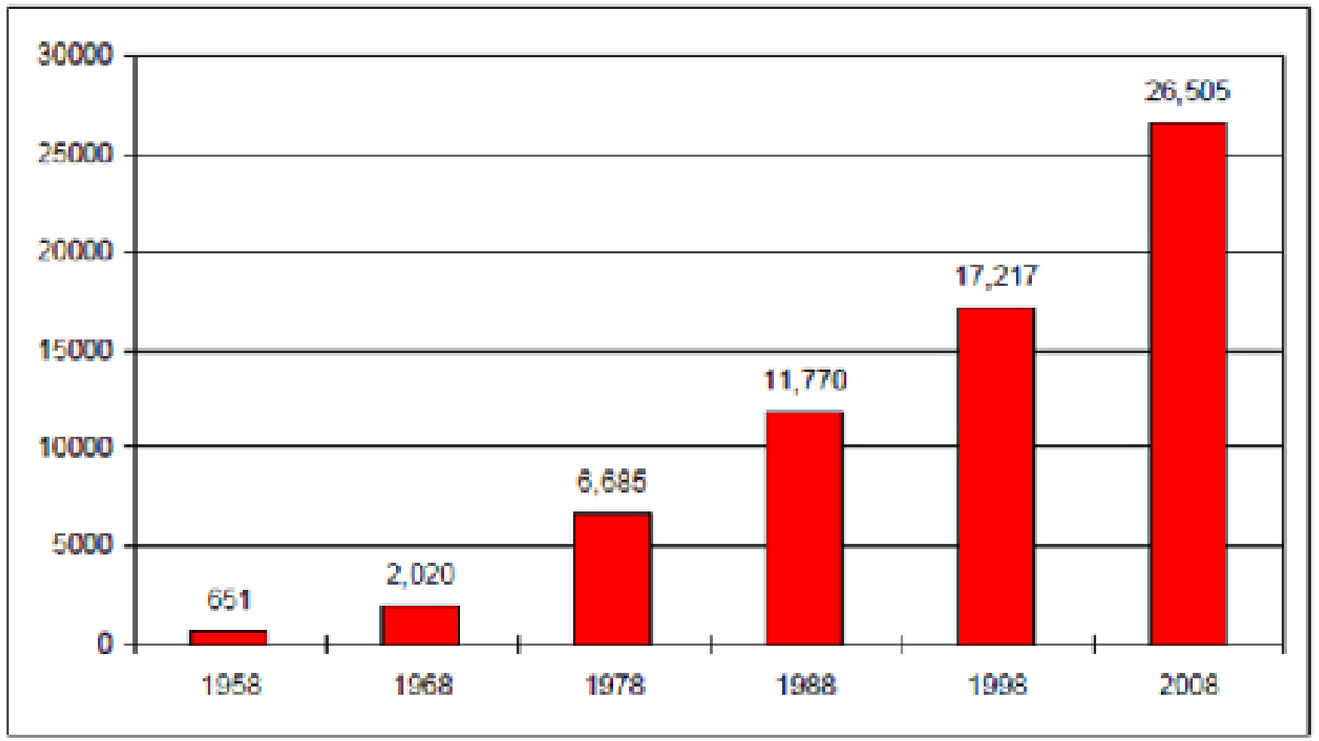
1. History of Biopsychology
2. Types of Biopsychological Research
3. Divisions of Biopsychology

Topics

- Define and discuss the field of biopsychology.
- Provide an overview of the historical origins of biopsychology.
- Compare the advantages and disadvantages of humans and nonhumans as subjects in biopsych research.
- Describe and compare the 6 divisions of biopsychology.

Lecture Learning Goals

Neuroscience is the scientific study of the nervous system.



Numbers of papers published annually in the neurosciences 1958 – 2008 (source: Web of Science).

Neuroscience

Neuroscience is the scientific study of the nervous system.

It has many different subdisciplines, including:

Neuroanatomy
Neurochemistry
Neuroendocrinology
Neuropathology
Neuropharmacology
Neurophysiology
Biopsychology

Neuroscience

Biopsychology is the scientific study of the biology of behaviour.

Biopsychology

aka Biological Psychology, Psychobiology, Behavioural Neuroscience, Behavioural Biology, etc.

Biopsychology

aka Biological Psychology, Psychobiology, Behavioural Neuroscience, Behavioural Biology, etc.

Each of these names denotes something slightly different.

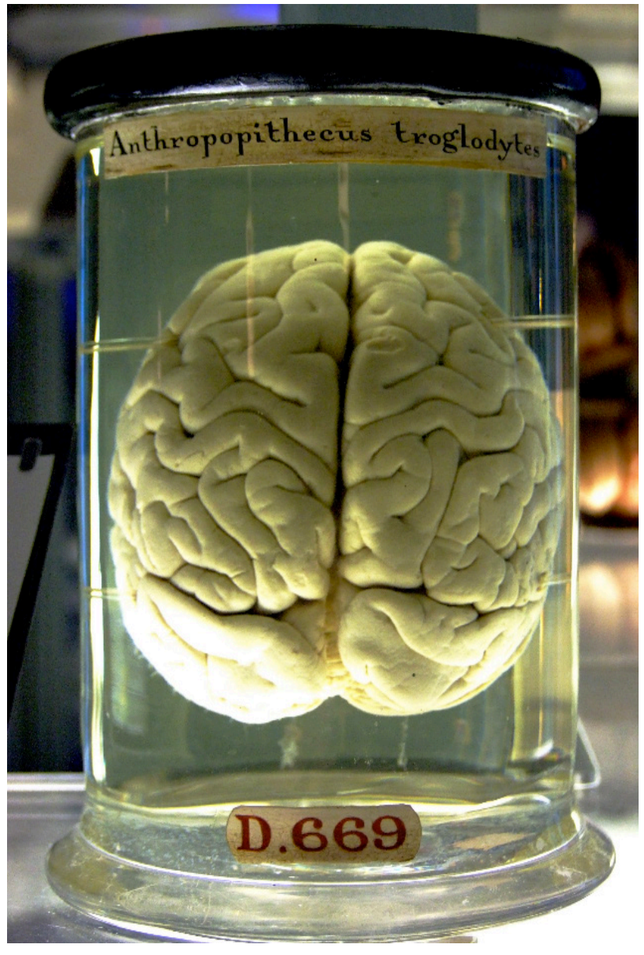
For example, 'biopsychology' denotes a biological approach to the study of psychology.

Biopsychology

Biopsychology starts with the assumption that brain is behaviour/cognition and vice versa.

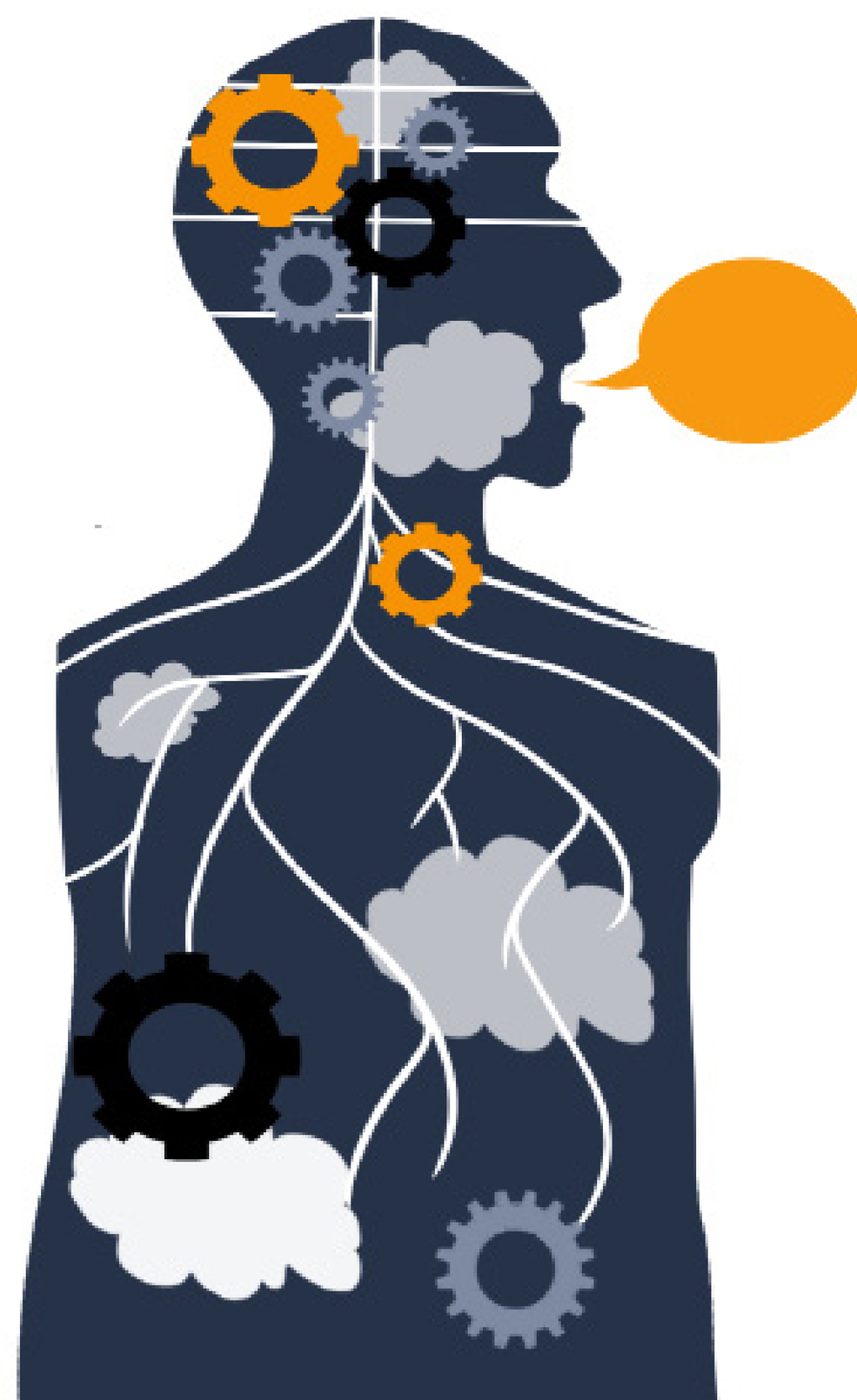
Biopsychology

Biopsychology starts with the assumption that brain is behaviour/cognition and vice versa.



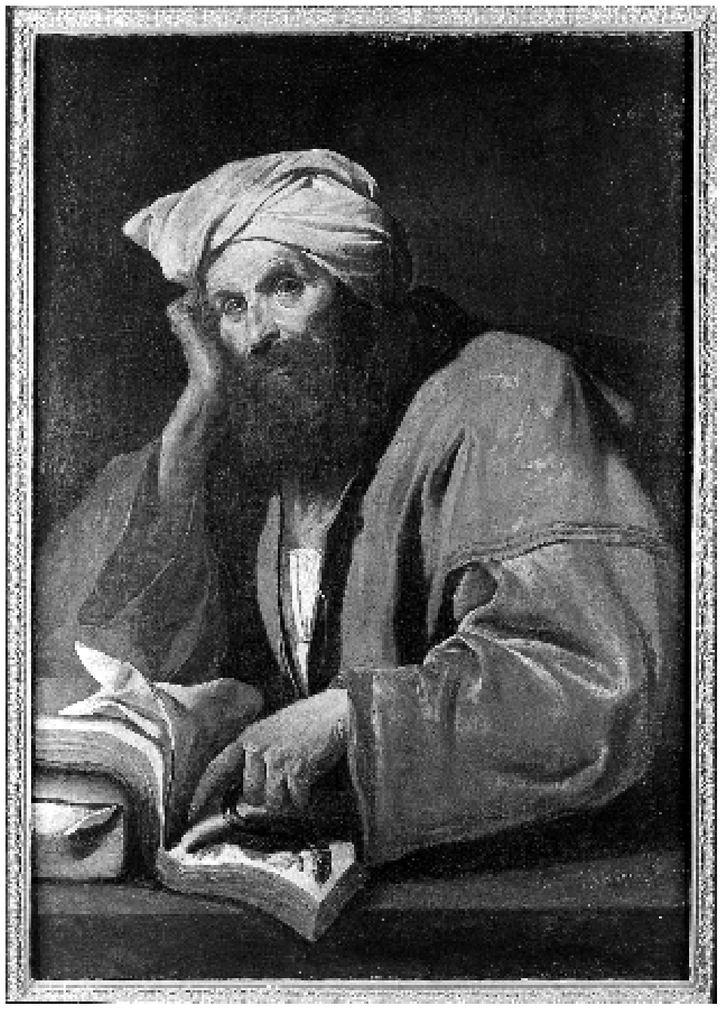
Biopsychology

But biopsychology doesn't restrict itself to just studying the brain.

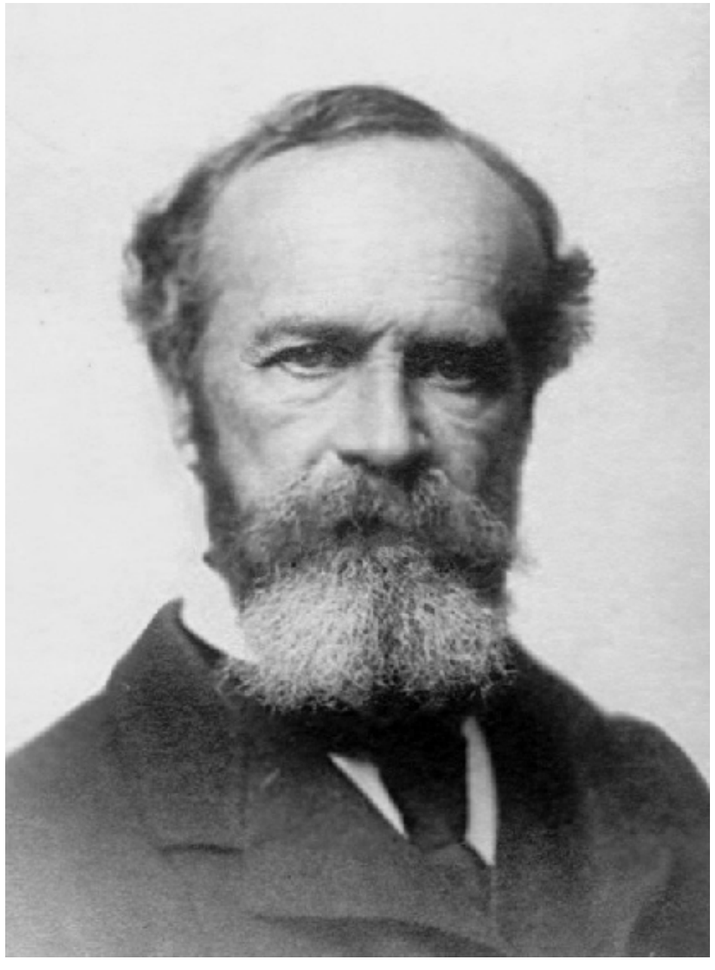


Biopsychology

Early Suggestions



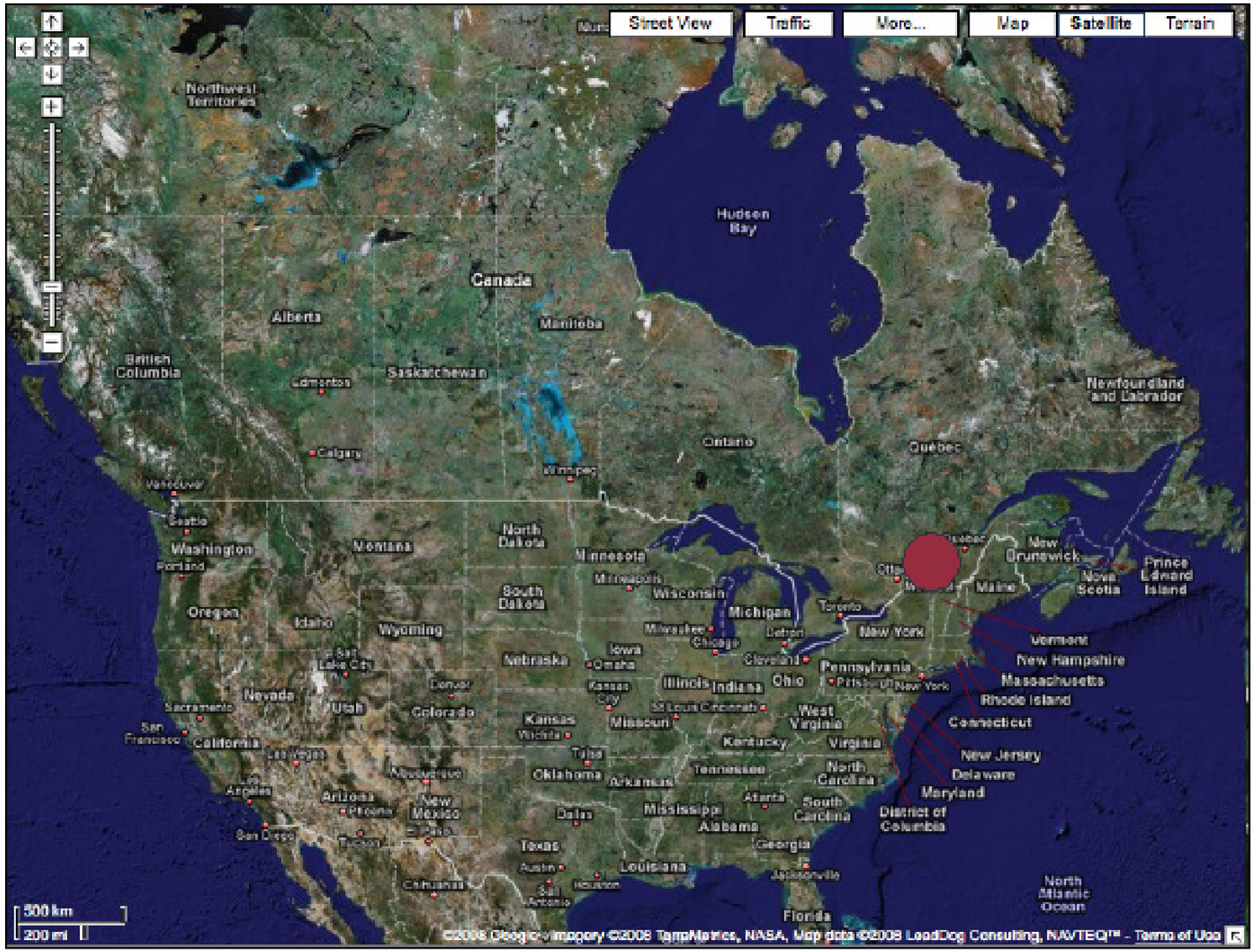
Avicenna (980-1037)



William James (1842-1910)

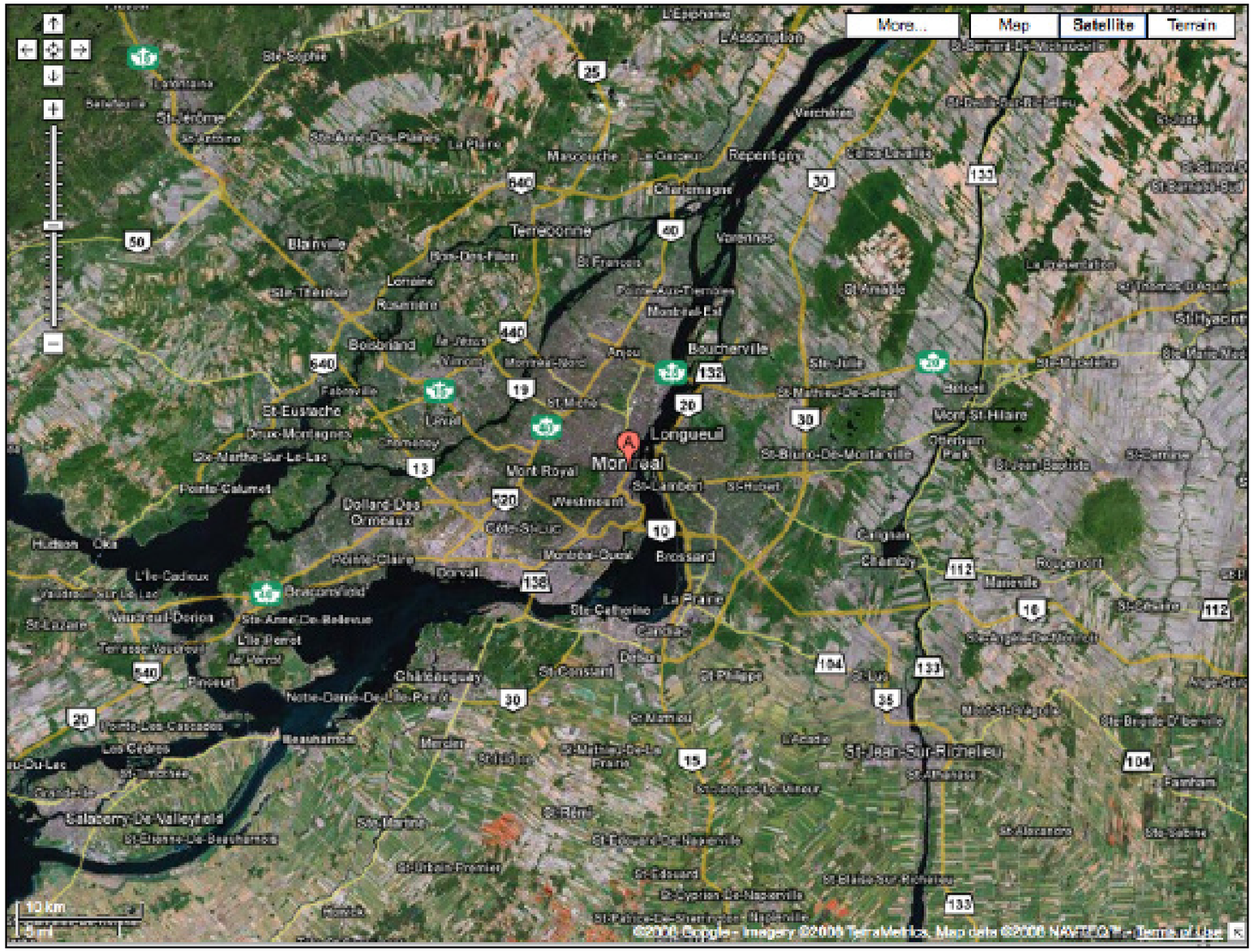
History of Biopsychology

Birth of Modern Biopsychology



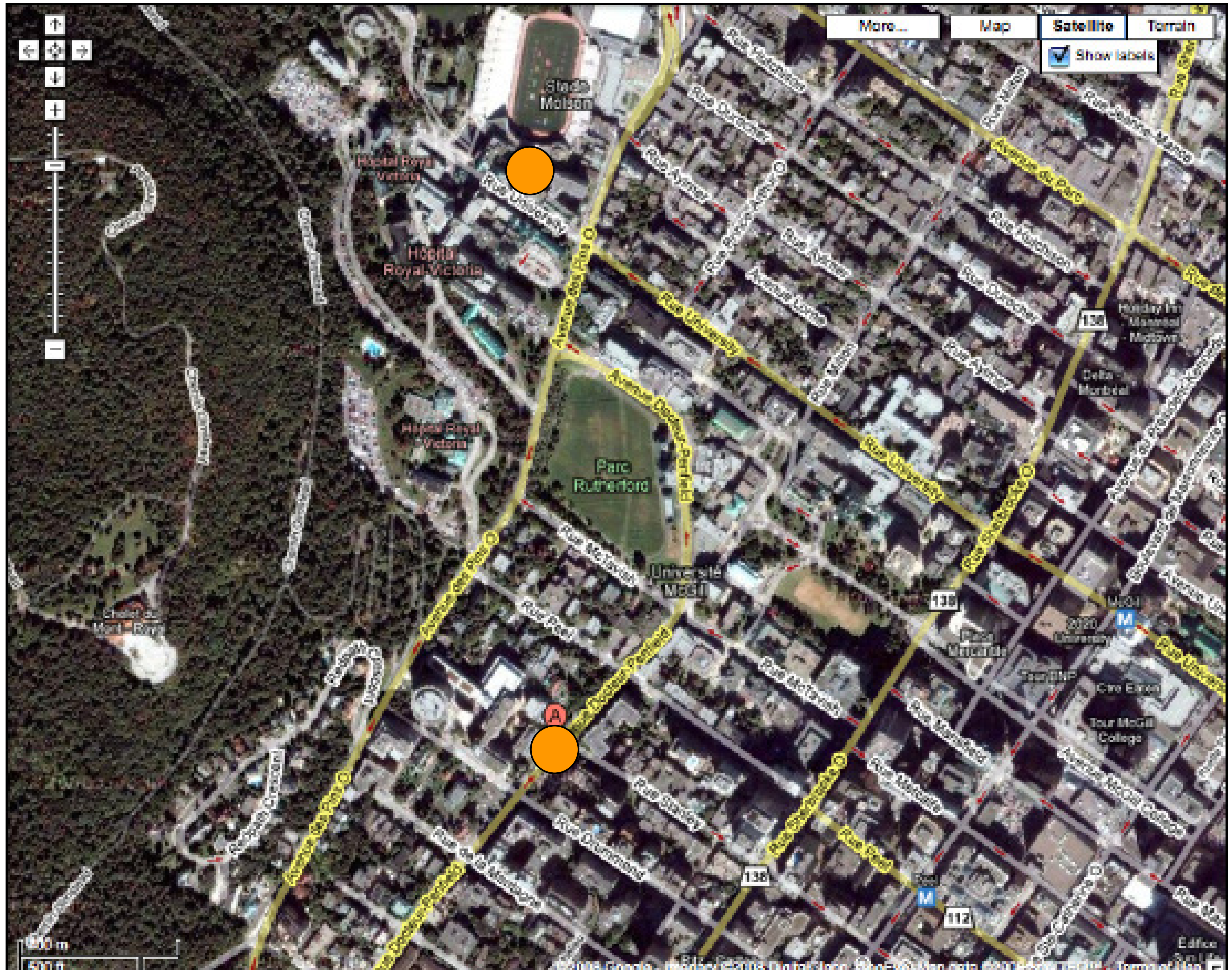
History of Biopsychology

Birth of Modern Biopsychology



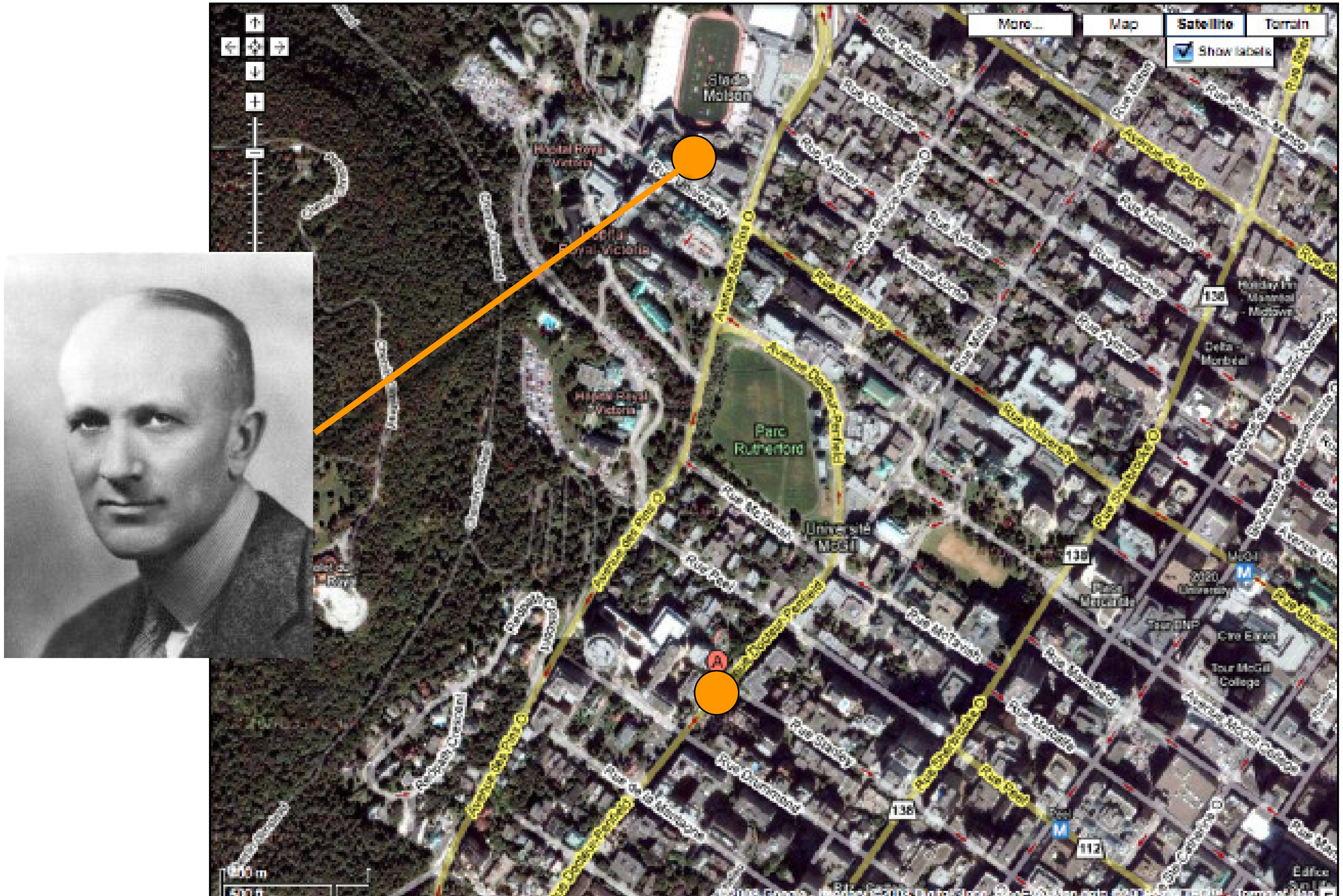
History of Biopsychology

Birth of Modern Biopsychology



History of Biopsychology

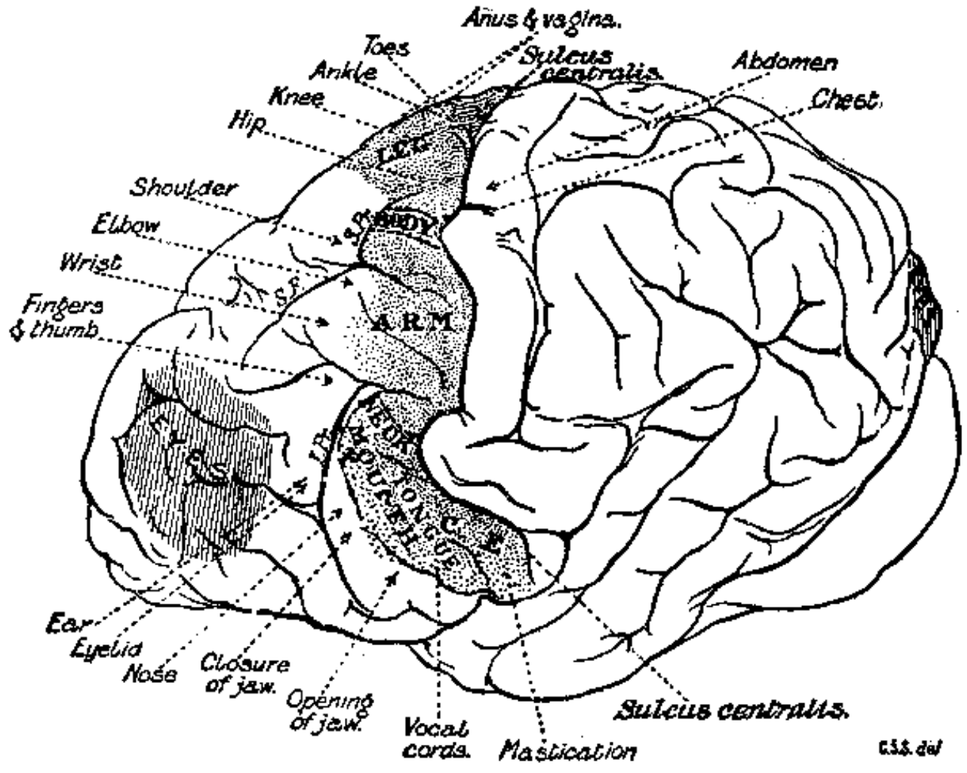
Birth of Modern Biopsychology



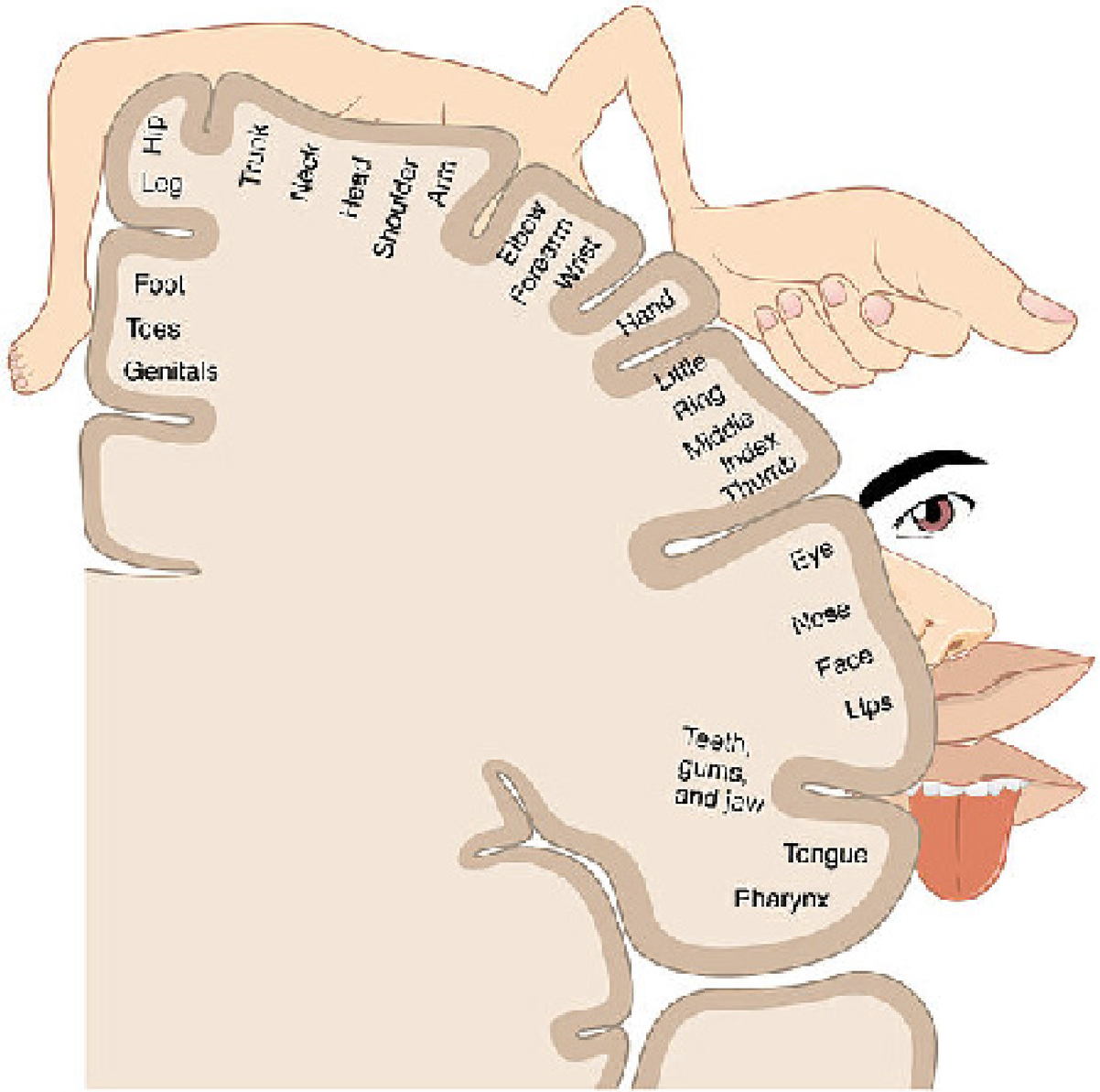
History of Biopsychology

Birth of Modern Biopsychology

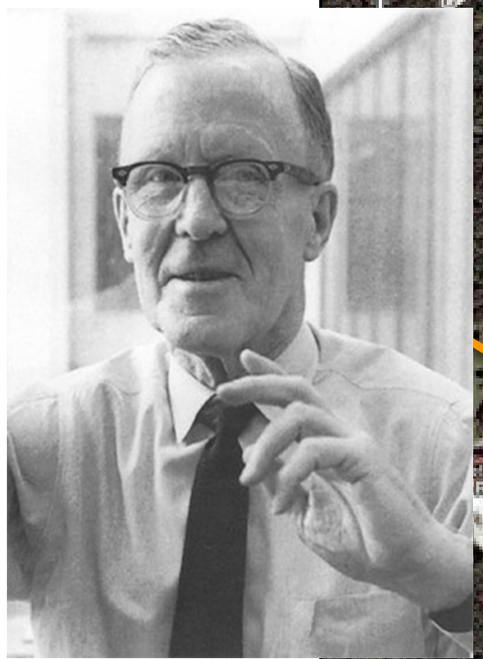
Wilder G. Penfield (1891 - 1976)

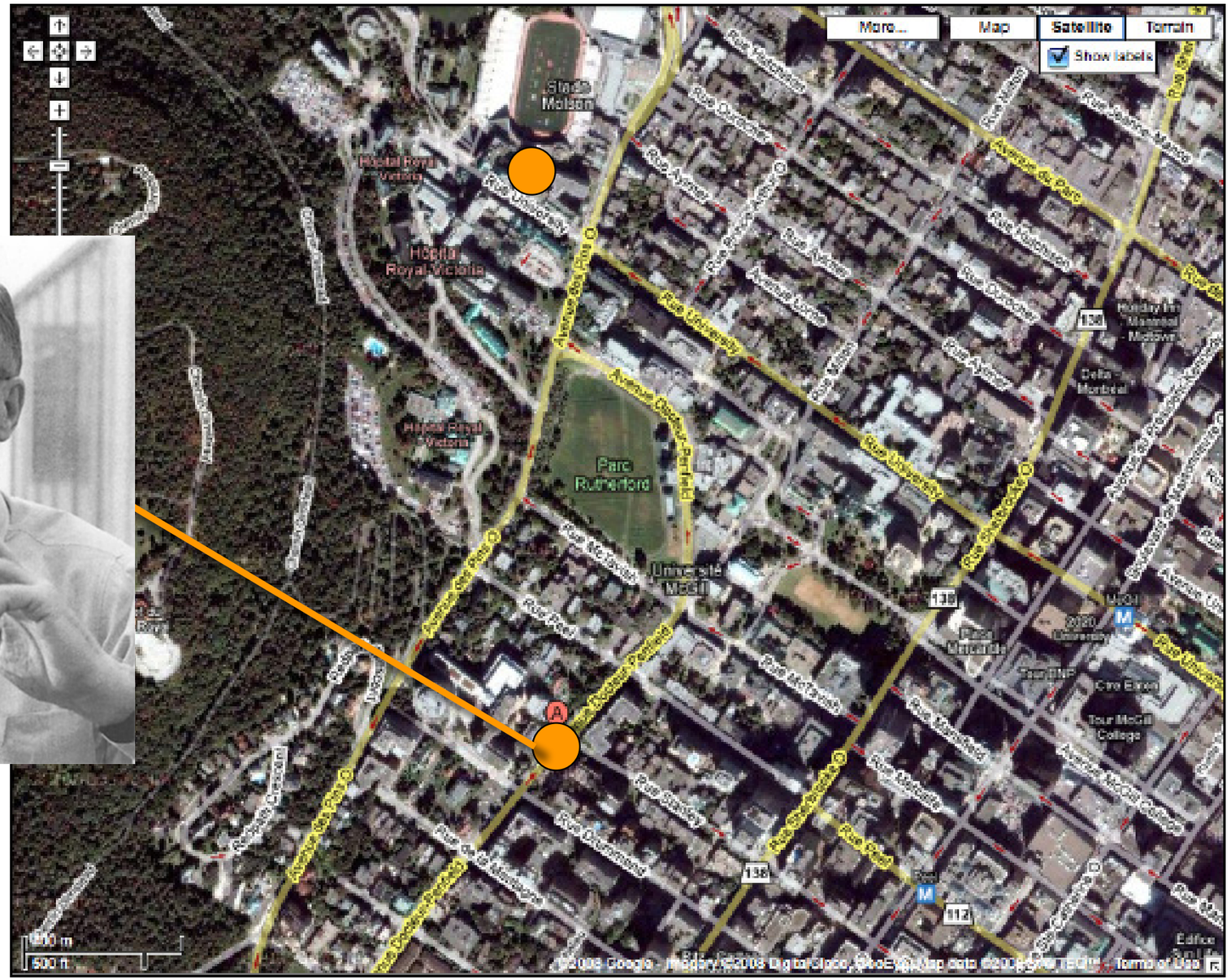


History of Biopsychology



History of Biopsychology

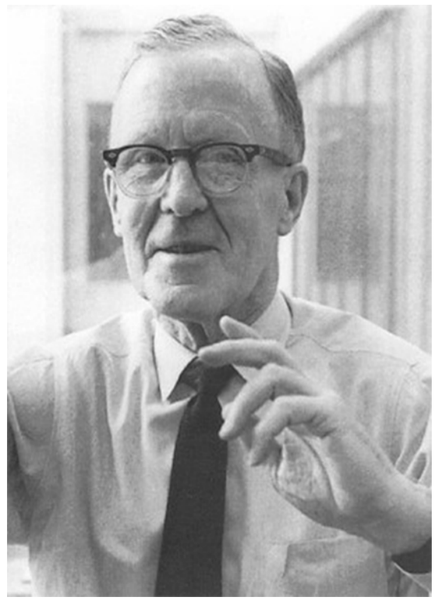




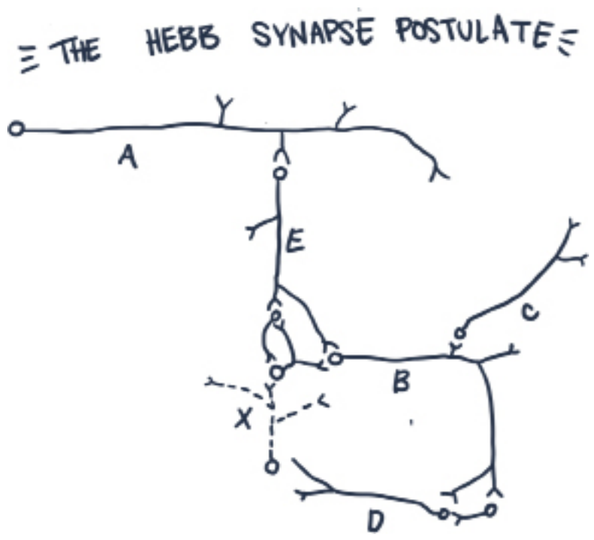
History of Biopsychology

Birth of Modern Biopsychology

Wilder G. Penfield (1891 - 1976)



Donald O. Hebb (1904 - 1985)



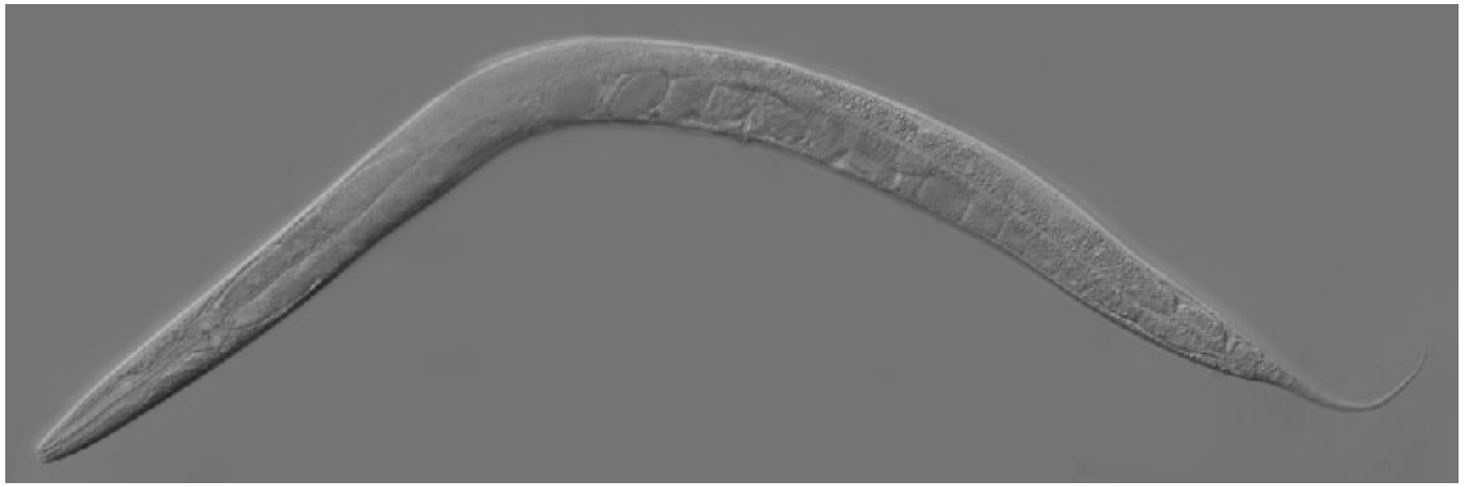
History of Biopsychology

Both human and nonhuman animals are the subjects of bio-psychological research.

Of the nonhumans, rats are the most frequently used subjects; however, mice, cats, dogs, and nonhuman primates are also widely studied.

Human vs. Nonhuman

Both human and nonhuman animals are the subjects of bio-psychological research.



Human vs. Nonhuman

Two most common positions:

1. **In support of non-human animal experiments**. They will produce such great benefits for humanity that they are morally acceptable.

2. **Opposed to non-human animal experiments**. The level of suffering and number of animals involved are both so high that the benefits to humanity don't provide moral justification.

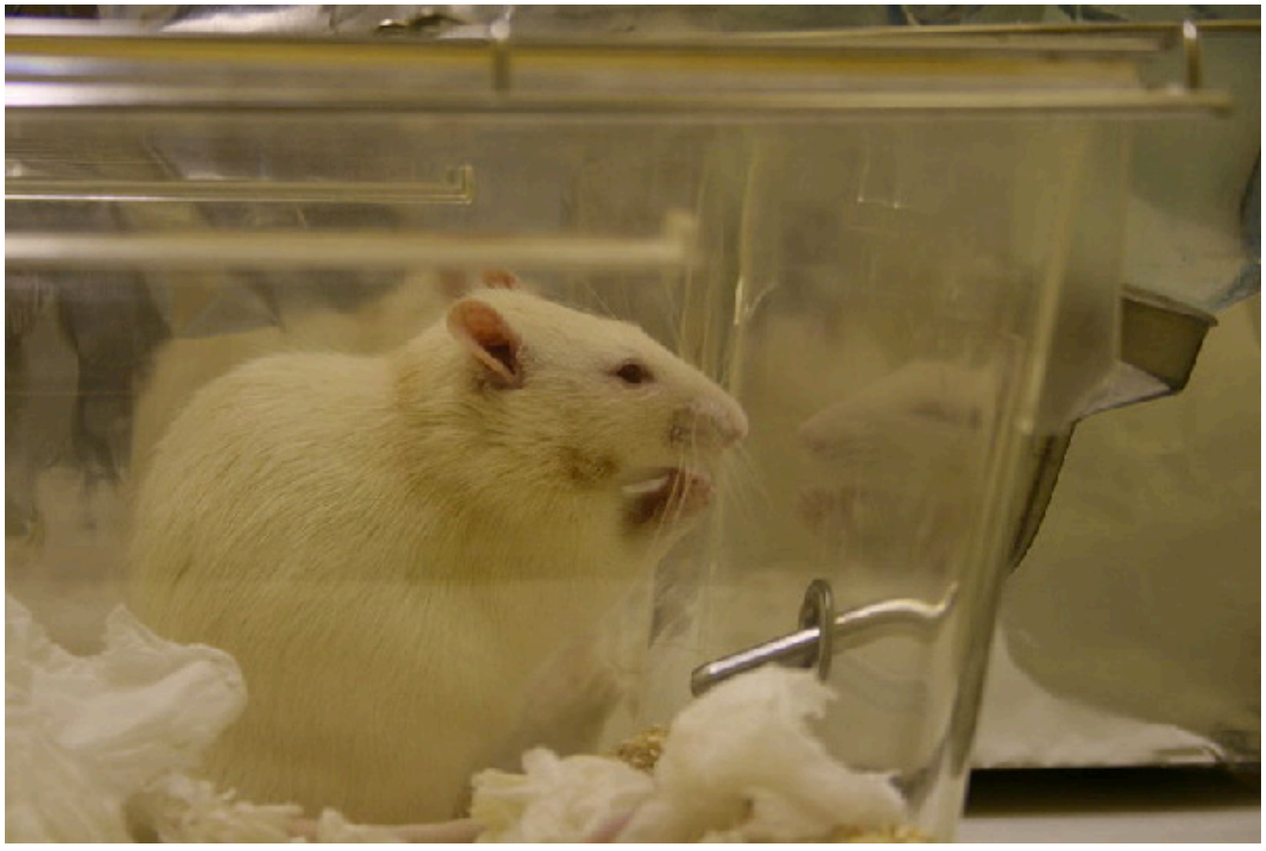
Animal Experimentation

There are six divisions:

1. Physiological Psychology
2. Psychopharmacology
3. Neuropsychology
4. Psychophysiology
5. Comparative Psychology
6. Cognitive Neuroscience

Divisions of Biopsychology

Physiological Psychology



Studies the mechanisms of behaviour through direct manipulation of the brain.

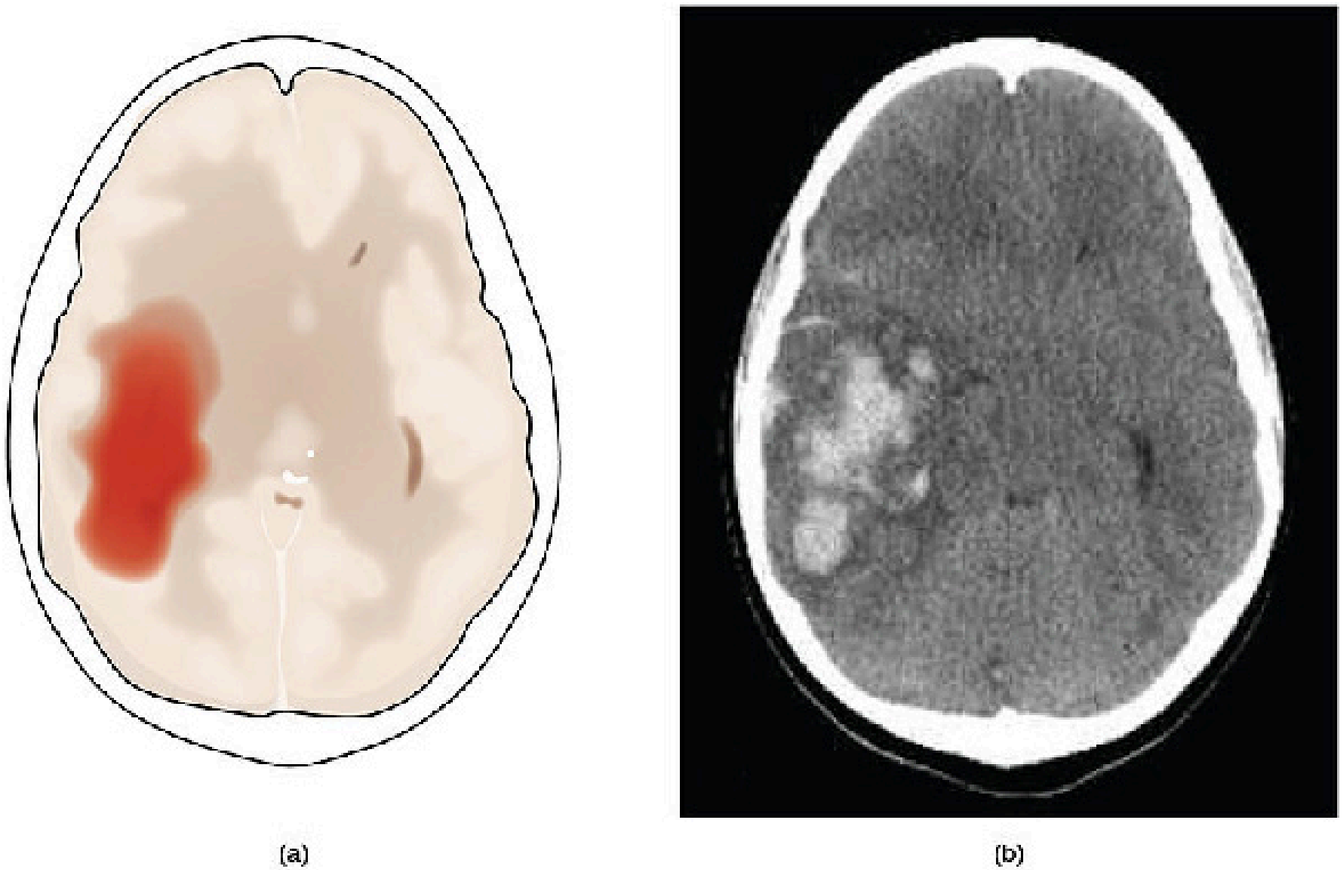
Divisions of Biopsychology

Psychopharmacology

Focuses on the manipulation of neural activity and behaviour with drugs.

Divisions of Biopsychology

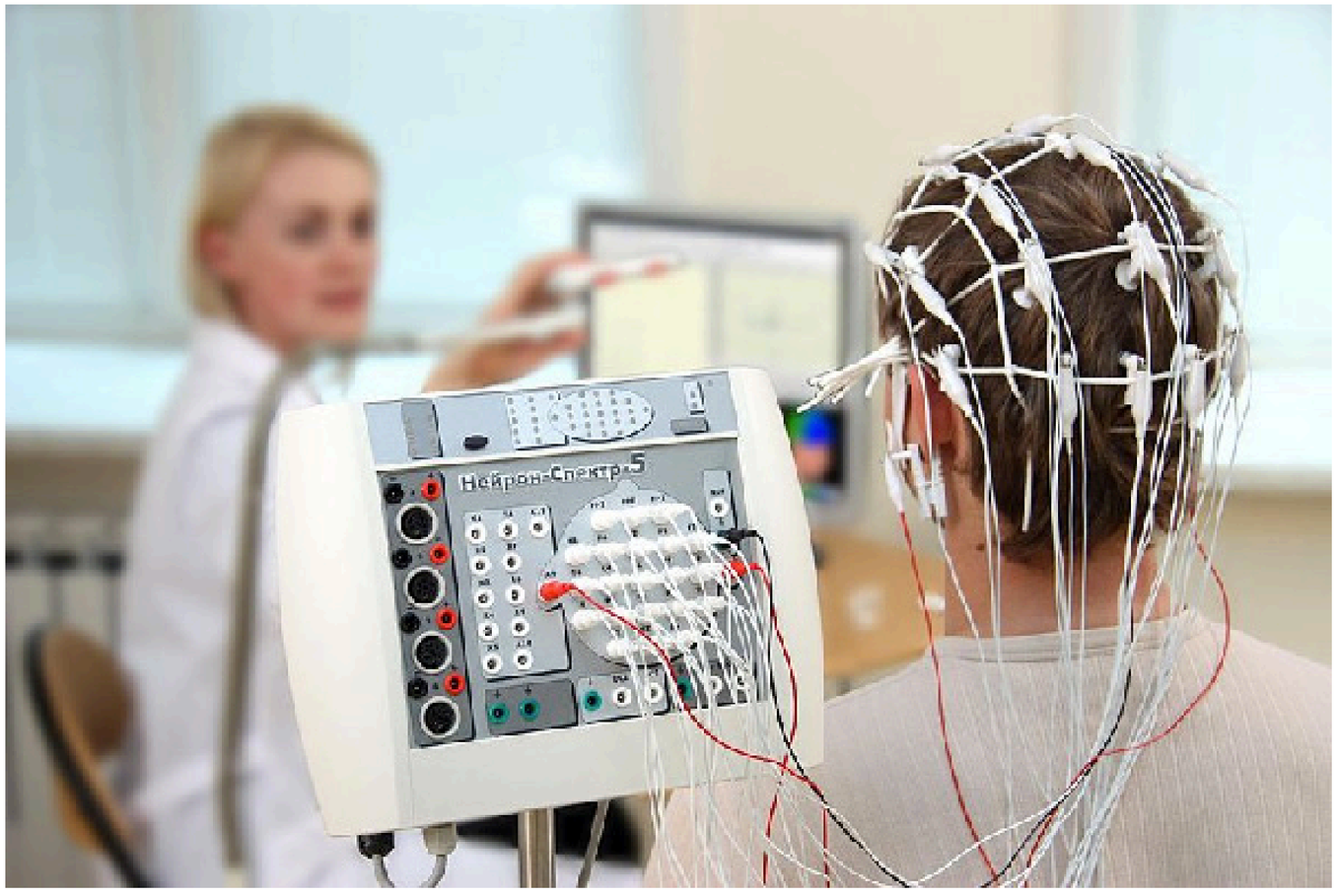
Neuropsychology



Studies the psychological effects of brain damage in humans.

Divisions of Biopsychology

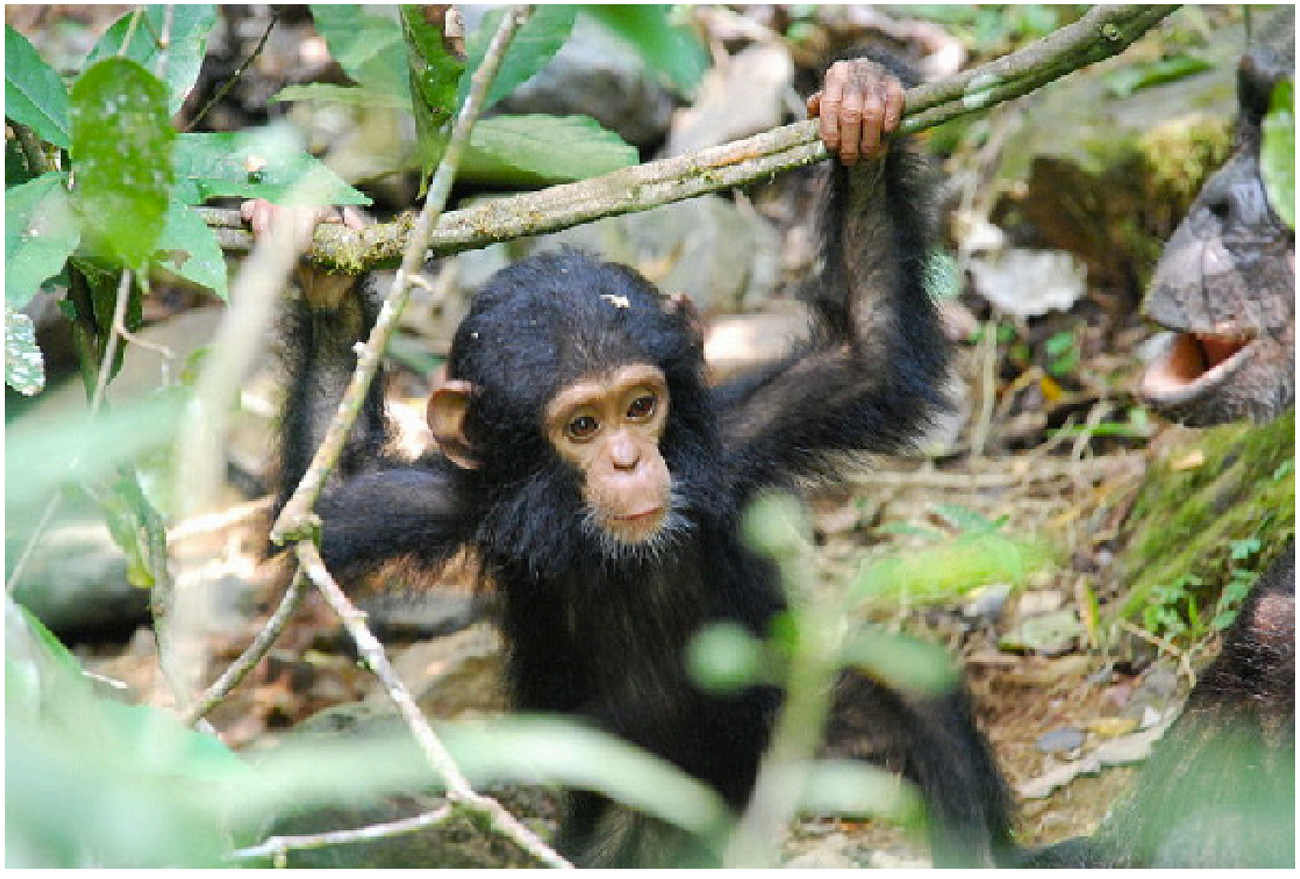
Psychophysiology



Studies the relationship between physiological activity and psychological processes in human subjects.

Divisions of Biopsychology

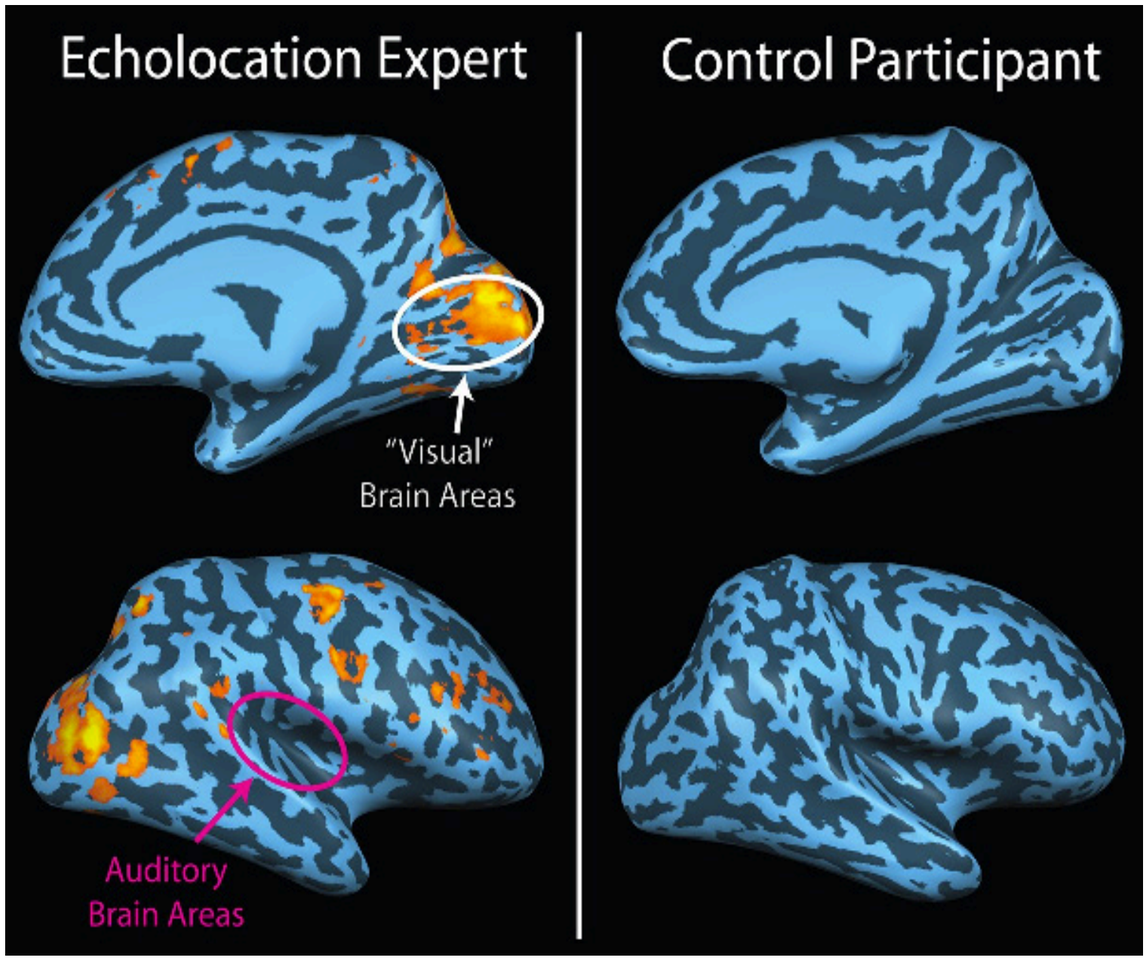
Comparative Psychology



Compares the behaviour of different species in order to understand the evolution, genetics, and adaptiveness of behaviour.

Divisions of Biopsychology

Cognitive Neuroscience



Studies the neural bases of cognition (thought, memory, attention, complex perceptual processes, etc.)

Divisions of Biopsychology