

Behaviorism of animals

Tuesdays 15.00, room 233

I – Behavioral terminology, historical aspects of human attitude to animals 25. 02.

II – Animal culture; Interspecies communication 04. 03.

III – Emotions, animal personality 11. 03.

IV - Feelings and ties 18. 03.

V – Learning, socialization (dr hab. Malgorzata Kapica) 25. 03

VI – Body language, aggression, association (MK) 01. 04.

VII – Body language, aggression, association (MK) 08. 04

VIII – Play, morality of animals Environmental enrichments, Final test 15. 04.

Behaviourism 1



What we know about animals?

- Archeological excavations (burials)
- Material culture

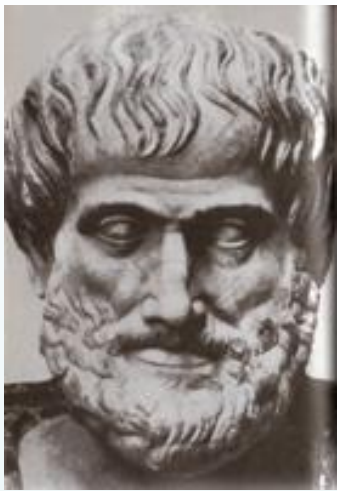


Humans have always been keen of animal behaviour

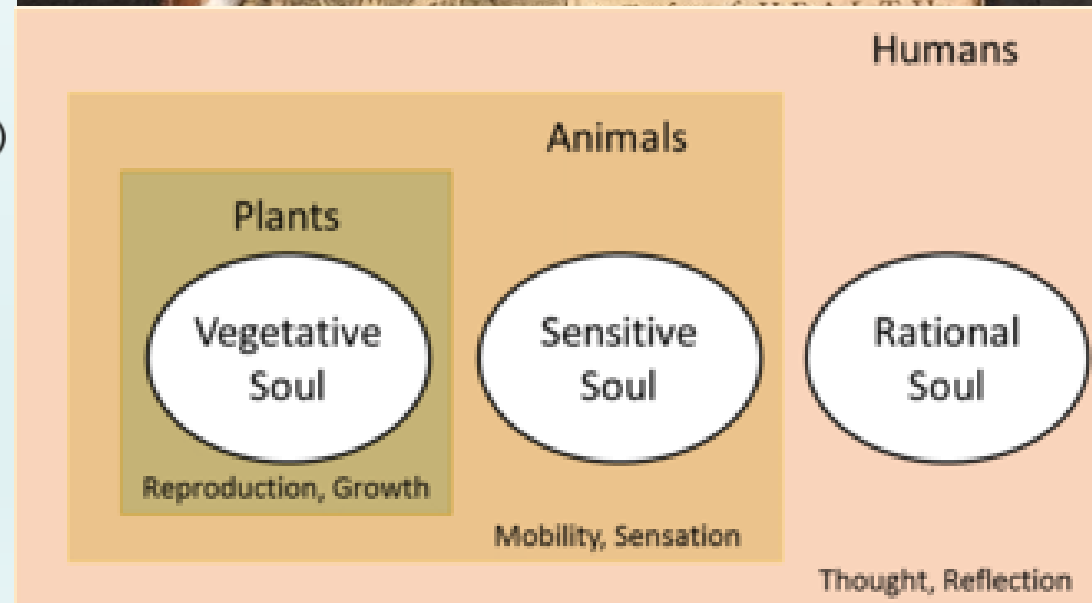
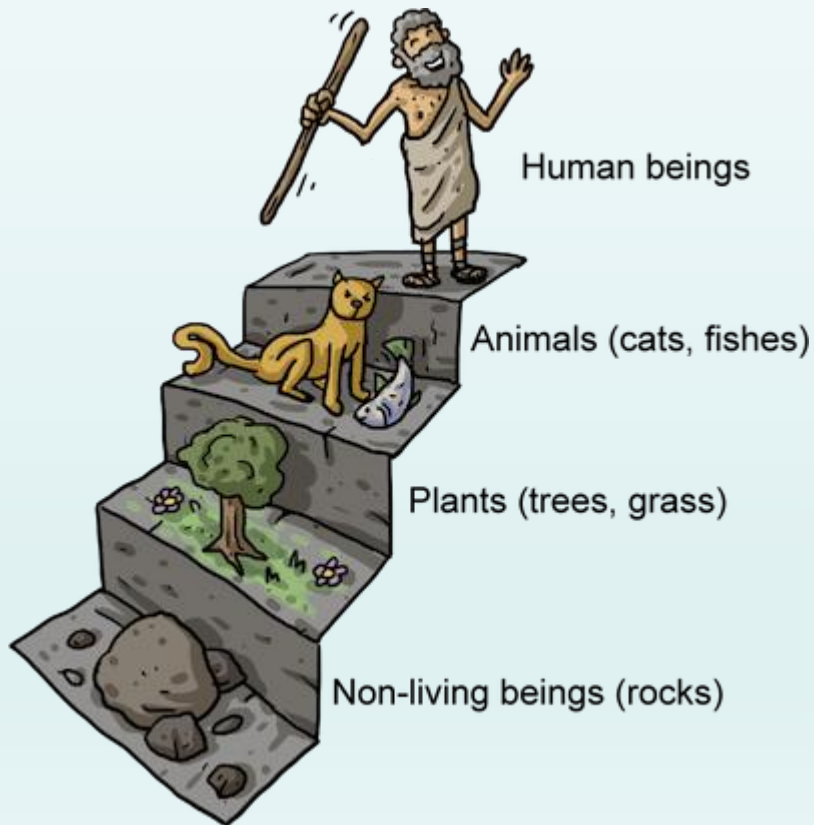
- 30,000-year old cave paintings
- Dordogne



- Admiration of the beauty of animals

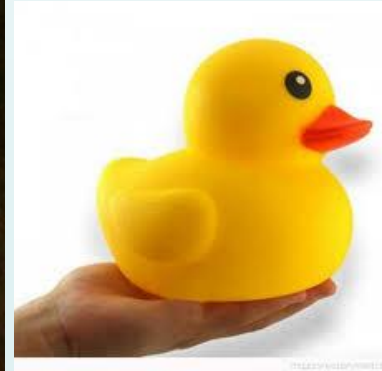


Aristotles (4th century BCE)



Other ideas

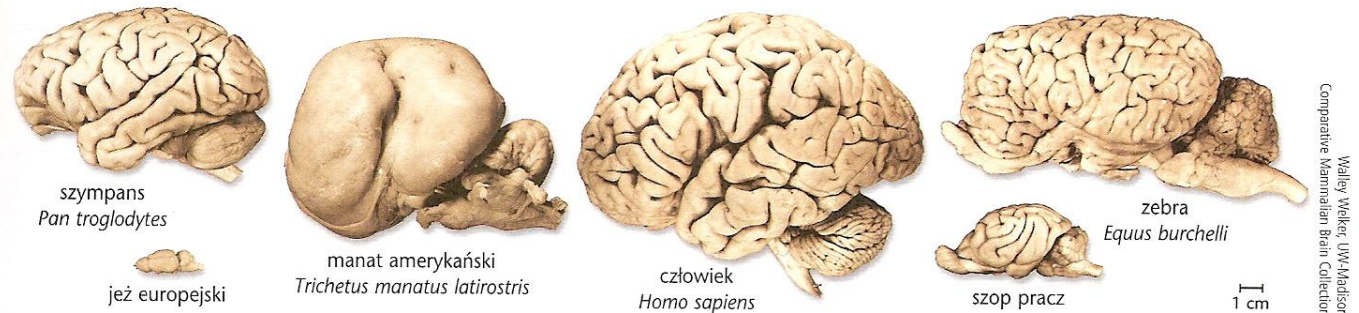
- St. Francis of Assisi
 - 13th century (Middle ages)
- Rene Descartes – 17th century (autopsy)



It squeaks ...

Other ideas

- Charles Darwin – 19th century – theory of evolution



Rysunek 5.13 Porównanie mózgów różnych gatunków ssaków

Ludzki mózg nie odbiega budową od mózgów innych ssaków. Główną różnicą jest jego całkowity rozmiar.

- Konrad Lorenz – rigid behavior patterns



Definitions

- **Ethology** – the study of animal behaviour in the wild. Ethologists combine observation of behaviour in the wild with experiments designed to illustrate the function of the behaviour.
- **Limitations:** Observer cannot control all factors influencing the behaviour of observed animal
- In the 19th century, descriptions of animal beh. were anecdotal and sentimentally anthropomorphic (with human emotions such as remorse attributed to animals).

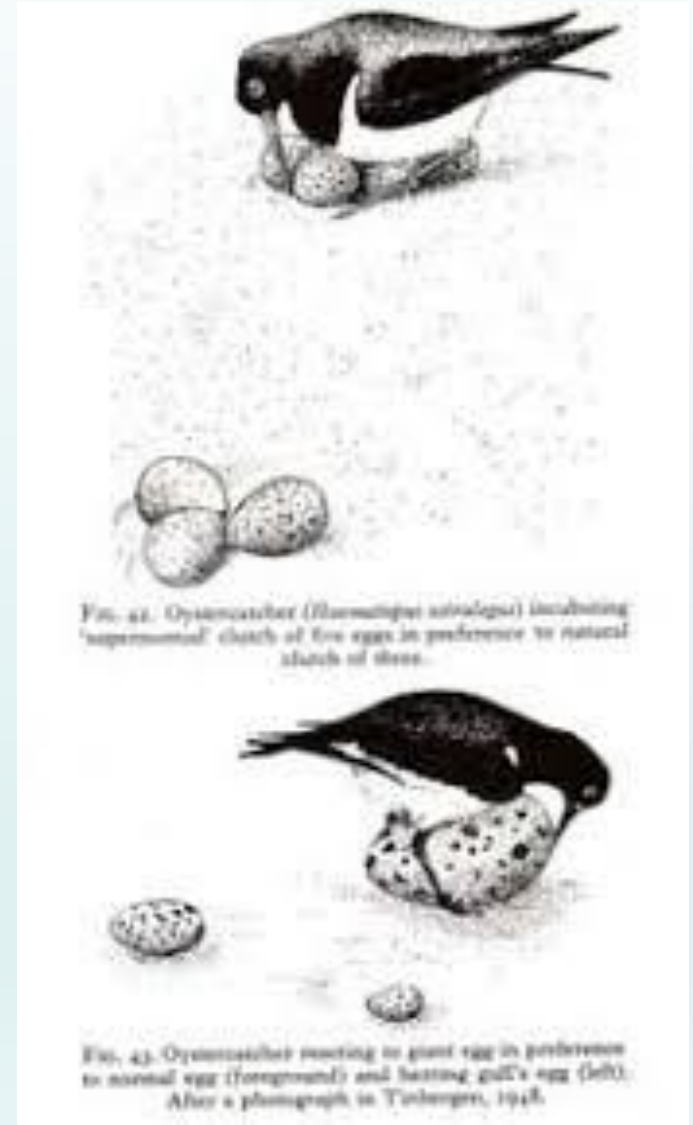
Problem: anthropomorphism sin

,the bird incubates eggs in the nest to raise its offspring'

Is it true?

or

,the bird brings food to its chicks to raise them ...' ???



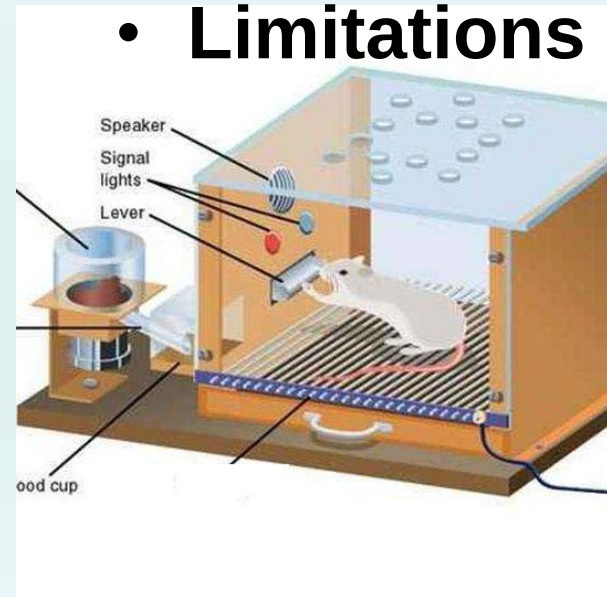
Cuckoo

- The Cuckoo is about 34cm tall. He can get 16 years old.
- It's a migratory bird, in the winter, it stays in Africa.
- They are brood parasites, they lay in every foreign nest one egg, which is similar to the other eggs.



Definitions

- **Behaviourism** – a school of psychology using hypothesis that behaviour is countable. The behaviourists would allow only observable stimuli, muscular movements (voices, face expression, mimicry), and glandular secretions to enter into explanations of behaviour.
- **Limitations** Laboratory animals



Behaviour

Behavior or **behaviour** is the range of actions and mannerisms made by organisms, systems, or artificial entities in conjunction with their environment, which includes the other systems or organisms around as well as the physical environment.

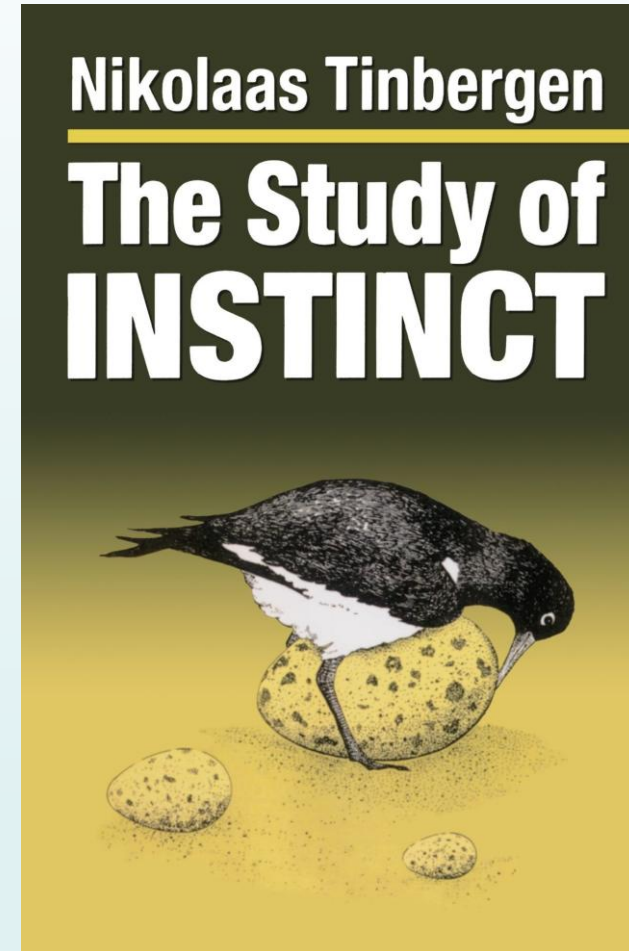
Introduction to Comparative Psychology (1894) p.53

- *In no case may we interpret an action as the outcome of the exercise of a higher mental faculty, if it can be interpreted as the exercise of one which stands lower in the psychological scale.*
- For example, Morgan considered that an entity should only be considered conscious if there is no other explanation for its behaviour.



Tinbergen's (1907-1988) 4 questions

- What it is for?
- How did it develop during the life of the individual?
- What mechanism control the behaviour?
- How did it evolve over evolutionary time?



Definitions

- **Zoopsychology**
- **Comparative psychology**
- Does the animal is able to feel consciously: pain and suffering, emotions (e.g. shame), compassion (empathy)?
- Does the animal is able to learn, thinking, understanding the problem, solve the tasks?
- Concept of play, morality, intelligence, personality, consciousness, self awareness (mirror test), theory of mind (cheating) ...

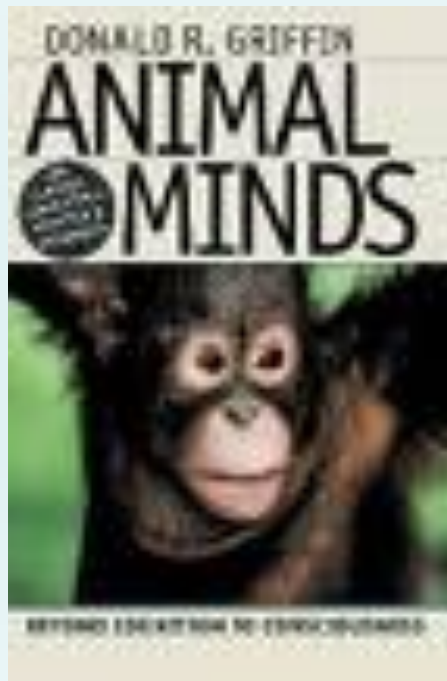


Year 1959 - Leonid Krushinsky

The animals are able to thinking (predict the future) – example: a predator predicts the escape route of its prey ...

Donald R. Griffin (1915 – 2003)

„Consciousness and thinking of animals should be subject to scientific research”

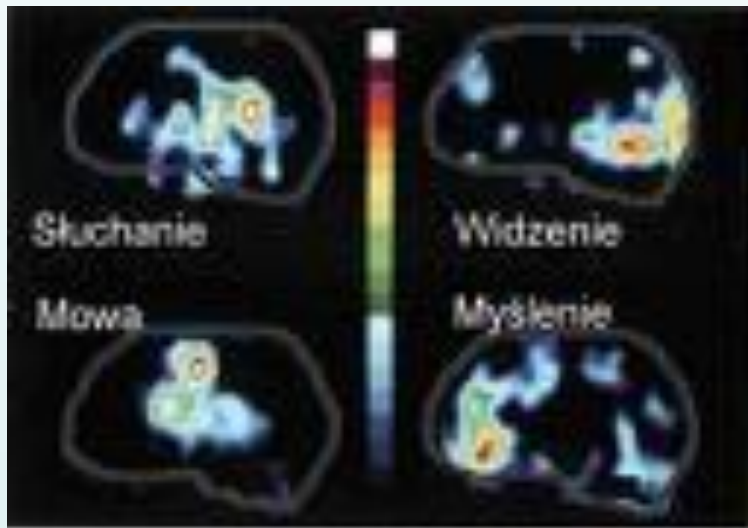


Other ideas

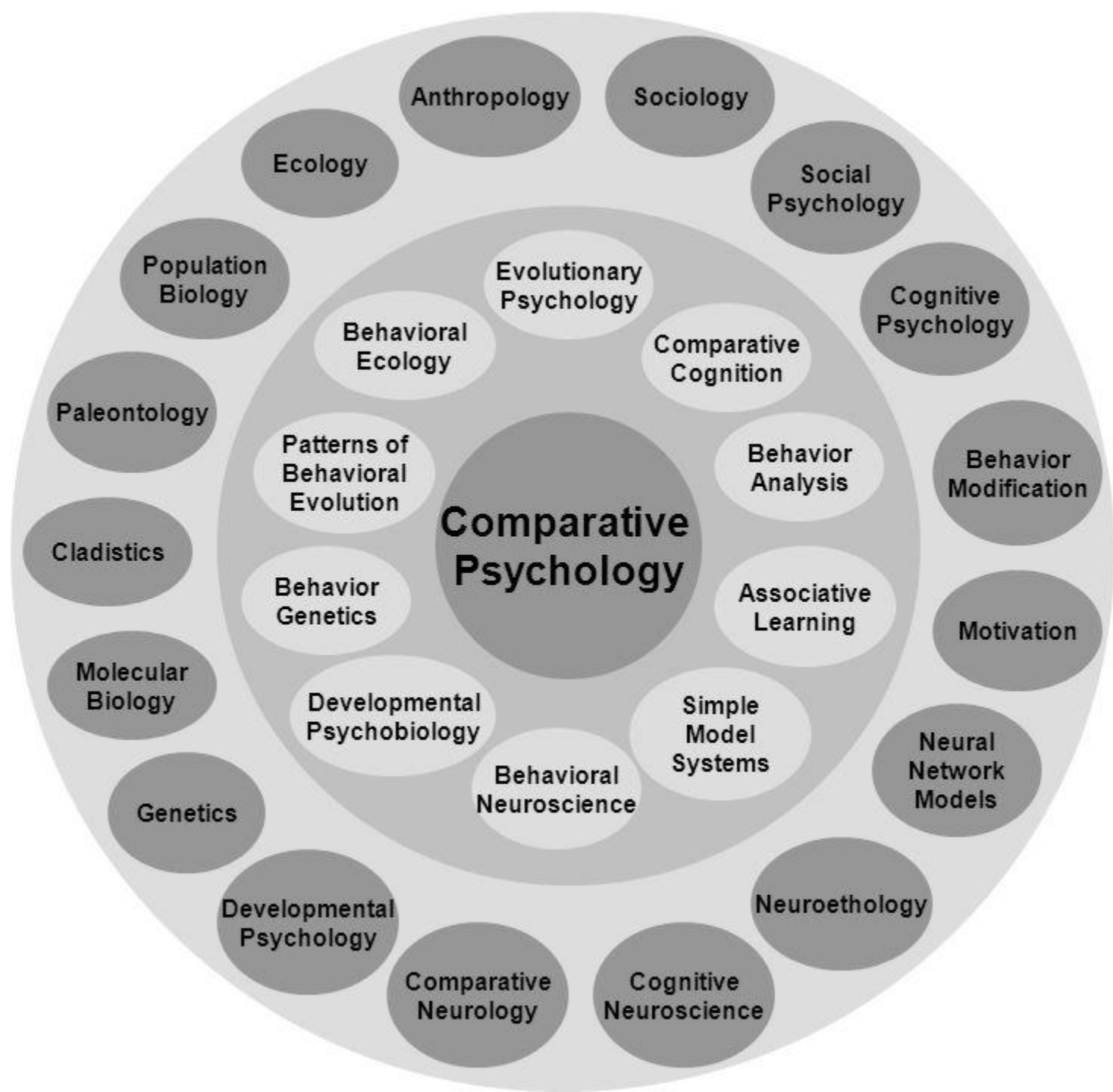
- The selfish gene (Dawkins 1976) – individual animal can be regarded as 'survival machine' by which genes survive to replicate, leaving more copies
- Sociobiology (Wilson 1975) – helping relatives
- Do animals are altruistic?

Is it possible to for example measure consciousness ?

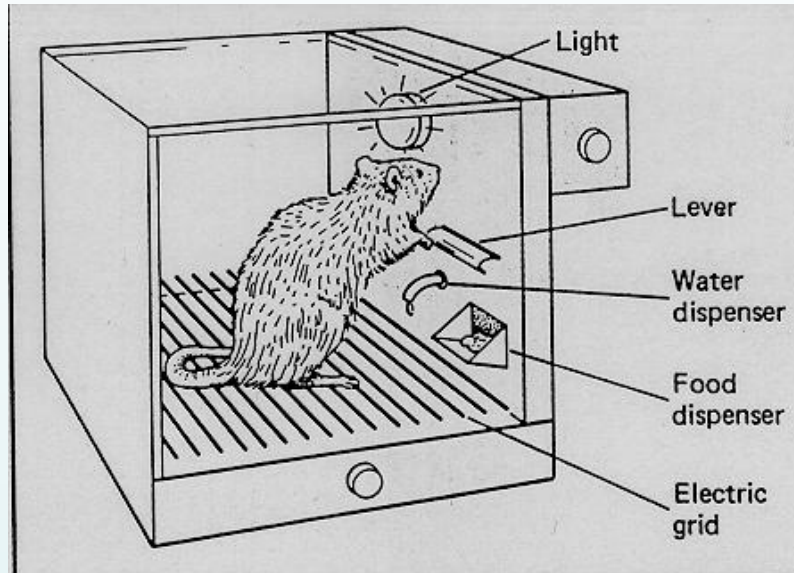
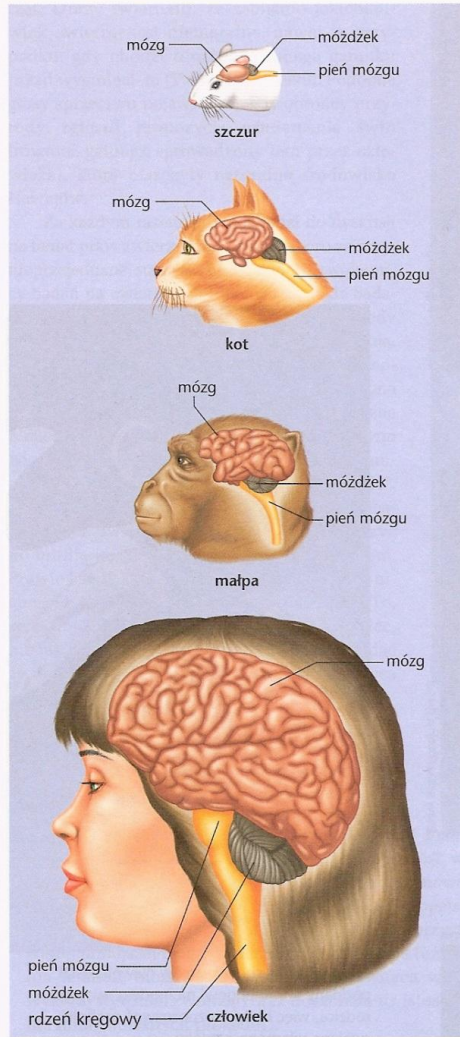
Thermography of brain activity



Fot: Carrots for rabbits



Behavioral relevance of the test



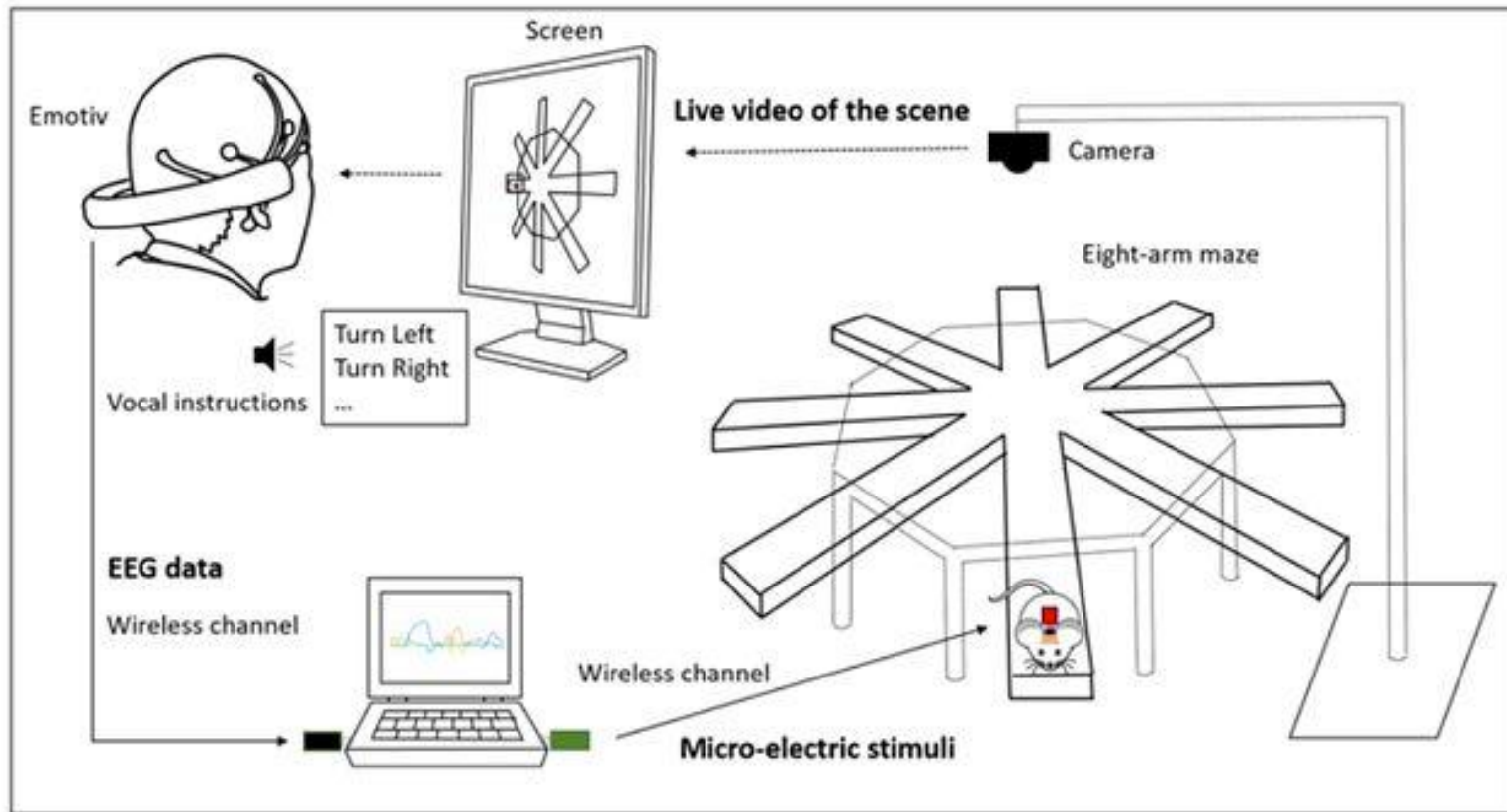
Opossum
(marsupial)



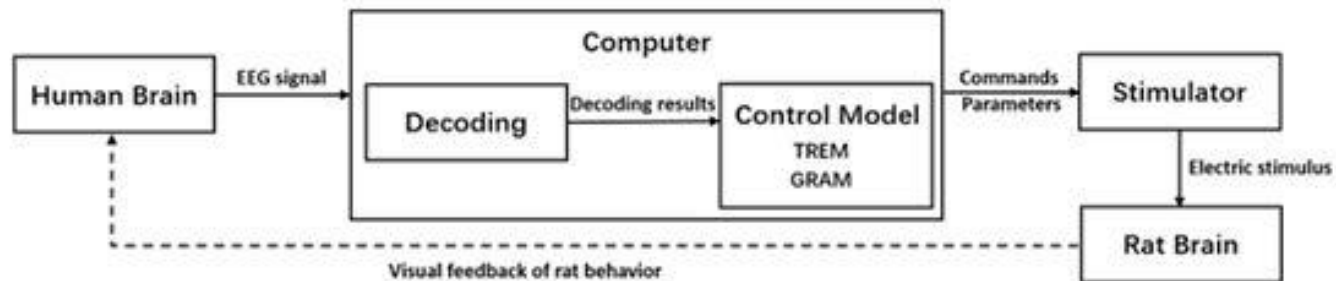
Rysunek 1.12 Mózgi niektórych gatunków
Ogólna struktura mózgowia jest podobna u wszystkich ssaków, choć jego wielkość jest różna u poszczególnych gatunków.

Figure 1

a



b



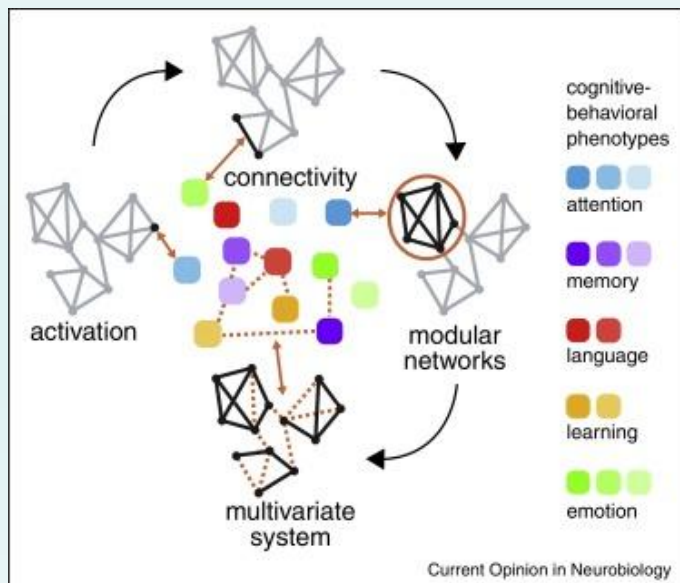
Factors that shape behaviour

- The structure and functioning of the nervous system
- The influence of other systems (endocrine)
- The current physiological status
- Experiences:
 - developmental plasticity
 - learning
 - changes connected to ageing (geriatrics)



Elements of behaviour

- perception of the stimuli (impulse is going from a sense organ to the brain)
- in the brain, 80-90% of axons build the connections (a net)
- the evaluation of stimuli (EMOTIONS)
- the generation of behavioural patterns



Factors influencing different behaviour in various species

- Various evolutionary solutions
- Adaptation to the type of food
 - insectivorous (bat, anteater, opossum)
 - carnivorous
 - herbivorous (including eating grass)
- Lifestyle – living alone or in a herd
- Coevolution of predators and prey

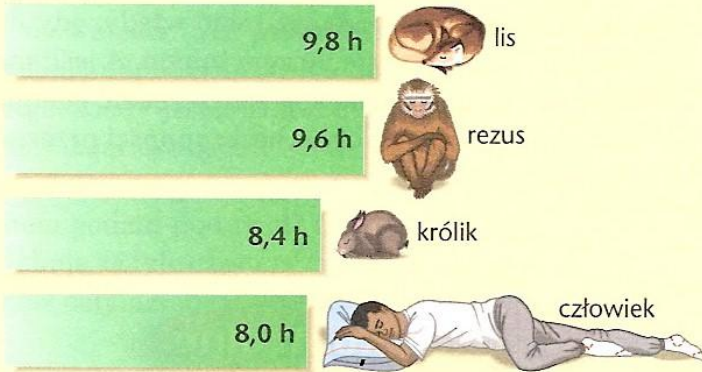


Sleep duration and lifestyle

Przesypianie większości doby



Umiarkowana ilość snu na dobę



Krótki, łatwo przerywany sen

