USE OF ANIMALS IN PSYCHOLOGICAL RESEARCH

Lecturer: Dr. Paul Narh Doku  
Contact: pndoku@ug.edu.gh  
Department of Psychology, University of Ghana
This session will deal with Why psychologists study animals. This will discuss both theoretical and practical reasons why animals are studied by psychologists.
At the end of this session, you will be able to:

– Explain why psychologists study animals.
– Mention and explain the theoretical reasons underlying the study of animals.
– Mention and explain the practical reasons underlying the study of animals.
The key topics to be covered in the session are as follows:

- **Part I – Why psychologist use animals**
- **Part II – Theoretical Reasons why psychologist study animals**
- **Part III - Practical reasons underlying the study of animals.**


The session notes titled “Use of Animals in Psychological research”
Use of Animals in Psychological Research

Lecture 7
Use of animals
Use of Animals

- Psychologist do research to learn more about behaviour in order to advance the welfare of humans
- Researchers and other scientists frequently use animals to conduct research that cannot be carried out with humans

Examples
- Experiments on early separation from mother
- Brain lesion experiments
Why psychologists study animals?

- Two reasons:
  a. Theoretical reasons
  b. Practical reasons
Theoretical Reasons

• Darwin’s Theory of Evolution

• Structure and Functions of the Central Nervous System

• The principle of parsimony
Darwin’s Theory
Darwin’s Theory of Evolution

• Darwin's theory states there are some form of similarities and continuity among all animals all known animals have evolved from a common ancestor.

• In spite of the common ancestry however, higher animals or primates (humans, apes, monkeys etc.) are more complex than the lower ones in many ways.
Darwin’s Theory of Evolution

- Similarities between and among animals is a function of their evolutionary closeness.

- E.g. humans are more similar to chimpanzees than they are to any other species in a wide variety of ways including the specific chemical structure of proteins and chromosomes.

- Again both humans and chimpanzees are more like monkeys than they are like rats and other rodents or other lower animals.

- Evolutionary relationship guide psychologists and other researchers in their choice of which animal to use in any given experiment.
For example, a researcher studying human memory and intelligence will choose an animal closely related to humans in terms of brain structure and operations.

On the other hand, a researcher interested in the structure and chemistry of the nerve cells can select from a wide range of animals because operational principle of the nerves vary very little from one species to another.

This continuity and commonalities imply that knowledge gained from animals could be beneficial to the understanding of some aspects of human behaviour.
Structure and function of CNS

Diagram showing brain morphology and encephalization quotient across different species (human, macaque, rat, mouse) with timeline indicating million years ago (80 to 0).
• Evidence from research has shown that the structure and functions of the Central Nervous System of both the humans and primates (mammals) are similar.

• CNS also performs similar functions in both humans and primates.

• It must be noted that this does not apply to all animals but to primate and rodents in particular.
• This distinction is very important because all animals do not have the same CNS in terms of structure and function.

• These findings give further support and credence to Darwin’s assertion that both and animals have certain features in common.

• It implies any differences which might exist in the structure and functions of the CNS of humans and primates may be a matter of degree.
The principle of parsimony

• This is a general scientific principle which states that if two propositions or theories are equally tenable, then the simpler one is to be preferred.

• Implies, in an attempt to understand complex issues, it is better to begin with the simpler and then gradually progress to the complex.

• That is if animals are lower than humans on the evolutionary ladder, then knowledge gained from the study of animals might provide insight as to what might be the case in humans.
On the basis of this assumption, it is logical and reasonable to start the study of humans from that of animals which is simpler and could be understood easily.

Understanding gained from animals will then provide us with some leads and insights into how to proceed with that of humans.

In effects, results from the study of animals facilitates hypothesis formulation and testing on some aspects of human behaviour.
Practical reasons for use of animals

- **Animals are readily and easily available**: researchers do not need the consent of animals unlike human participants in research.

- **Animals are good for genetic and generational study**: researchers may take too long time to study humans unlike animals like rats.

- **Less expensive; using animals is less costly**

- **Test of new drugs and studies involving irreversible damage** (e.g. brain lesion)

- **Ethical reasons**

- **Better understanding** (use of pets provide some insights into animal behaviour)
Arguments against use of animals

SAY NO TO ANIMAL EXPERIMENTS IN MAURITIUS!

Do not let our animals suffer!
Arguments against use of animals

• In 1980s, People for the Ethical Treatment of Animals and the Animal Right Coalition protested against the use of animals in research.

• Their concern is that use of animals is unnecessary and waste of time and resources because the two species are completely different.

• Granted that there are some level of similarity between the two species, it might be too remote and insignificant to allow for the kind of comparison being made between humans and animals.
Culture and animal studies

- It is argued that culture plays a role in behaviour.
- It is unacceptable to study animals in areas such as language and emotions and then assume outcome could be applied to humans.
- Both species have different levels and forms of language.
- This assertion is supported by various unsuccessful attempts made by psychologists to train chimpanzees to learn human language. (premack, a976 cited in Kalat, 2002).
Differences between vocal apparatus of chimpanzees and humans are the major factor for the inability of the former to learn human language.

Opponents of the use of animals say this a clear example of biological as well as cultural influences and differences between humans and animals.
Equal treatment

- Animals like humans are part of creation. They are individuals on their own right and must be treated in ways humans are treated.

- What is unacceptable to humans in terms of research must also be unacceptable to animals.

- This point is forcefully made by McCabe, (1986 cited in Christensen, 1994) that there is no rational basis for separating out animals for a rat is a pig as do is a boy. In other words they are all mammals.
Laboratory animals

- Critics have argued the use of animals raised in confinement are not likely to behave in the same manner as those in the wild.

- Because of their confinement and special case, these animals may lose significant aspects of their natural characteristics and behaviour.
Response to criticisms

- Proponents of use of animals have argued results obtained from animal studies are not directly extrapolated to humans, but they serve as basis and thus give indication as to what the behaviour of man might be like.

- In other words, they serve as hypothesis for further studies.

- On the issue of inflicting pain, the counter argument is that there are guidelines regulating the conduct of research involving animals in the same way humans are also protected.
Response to criticisms

• Endangered species are not used unless that is the only option available.

• On culture, they argue animals are mainly used in studies such as learning and those involving the links between CNS, hormones and behaviour and not issues which are mostly influenced by culture
Importance of animals in psychological research

• Major contributor to our knowledge of basic learning and motivational processes e.g. hunger, thirst and reproduction.

• Critical information about sensory processes; taste, vision, hearing, and pain reception.

• Understanding of range of psychoactive drugs and environmental and environmental toxicants

• Development of new drugs for treatment of anxiety, schizophrenia and depression

• Has contributed to the understanding of animals

• Helps explain the CNS