

## Lecture 1: What is Learning

- goal of most psychologists in the field of learning has been to discover general principles that are applicable
- “Learning is a change in behaviour due to experience”.
- There are three key aspects of this definition which we will go through in greater detail, change, behaviour and experience.

### Change

- Learning always involves some sort of **change**. This can be an increase in the frequency, intensity, speed, duration or form of a behaviour or equally this can be a
- Some psychologists insist that only durable changes qualify as learning. However then the problem arises as to what qualifies as a durable change. Adding durability seems to create more problems than it solves. The key issue in learning is whether a change in behaviour occurred, not how long it lasted.

### Behaviour

- What changes when learning occurs is behaviour
- Behaviour can involve anything from verbal reporting of what has been learned to the amount you salivate.
- In the end anything that an organism does that can be measured is behaviour.
- Generally it is not possible to directly observe learning, but the changes that we see in behaviour are the product of learning, and the process of learning is an internal process in which there are
- Sometimes learning is equated with these changes in the nervous system rather than a change in behaviour, however we presently have a better understanding of behaviour than of physiology and in the end it is the behaviour that is more important.
- we are a very long way away from understanding all of the changes that happen in the brain
- when we learn something complex like how to navigate a maze or play the piano. In the end, while learning may be reducible to changes in the nervous system what is generally of much greater utility is to be able to predict behaviour and so it is the changes in behaviour which are of paramount importance in learning.
- While we assess learning by observing a change in behaviour, the behaviour is actually a measure of “performance” rather than a direct measure of “learning”.
- Performance can always be observed and measured but learning needs to be inferred from changes in performance
- there are other things that can effect behaviour that are not learning.

### experience

- factors other than experience can result in changes in

behaviour. Some of the other

- factors which commonly influence behaviour and which need to be accounted for if we are going to attribute a change in behaviour to learning are: motivational states, pharmacological states, maturation, and physical changes in an organism.
- Ultimately learning, as you will be taught about in this course, is about adaptation to a changing world.
- Learning is a central part of human existence and so by understanding some of the principles which govern learning you will get a greater understanding of human behaviour and how to predict and manipulate human behaviour.

## Lecture 2: Types of Learning

### Habituation

- This is the simplest form of learned behaviour and it involves changes in responding to a single stimulus which is presented repeatedly.
- types of behaviour that show evidence of habituation range from the very simple to complex motivated behaviours.
- Habituation is a ubiquitous form of learning in that it occurs in single cell protozoa, invertebrates, insects, mammals and in people.
- In 2000 Eric Kandel won the Nobel Prize for Medicine and Physiology for his work on the neural mechanisms of learning which he discovered through examining habituation in sea snails.
- When an animal or a person is born we are not a completely blank slate but we already possess a variety of complex abilities.
- Our survival depends on these abilities: to breathe, to pump blood and oxygen around our bodies, and to ingest nutrients among many other things. Some of these innate behaviours are triggered by particular events in the environment.
- Reflexes are present at birth or appear at predictable stages in development.
- Reflexes are important in protecting us from injury, such as our reflexive response to withdraw from pain.
- Other reflexes are important in food consumption, such as the sucking reflex which is present at birth in human infants.
- It is commonly assumed that these reflex responses, particularly simple reflex responses, will automatically occur the same way every time the eliciting stimulus is presented. However, this is not the case.
- Reflexes can be modified in order to allow for flexible responding to environmental stimuli.
- In fact the simplest kind of learning is alterations in the size and nature of a response as a result of repeated presentations of the eliciting stimulus. The response can decline in size and duration as consequence of repeated stimulation, a process known as habituation. Alternatively,
- "Habituation is a decline in responding to repeated presentations of a stimulus."
- Habituation is important because it allows us to ignore unimportant stimuli which occur repeatedly.
- However, you may get a decline in responding for reasons other than habituation. For example, you may get a reduction in the startle response of the rat because after having repeatedly jumped in response to the loud noises the rat may become tired.
- It may be fatigue that causes the response to decline.