Lecture 1: Administration

So what is learning?

Learning can be defined in countless ways. However, psychologists would generally agree with the definition that: "Learning is a change in behaviour due to experience".

- This definition seems deceptively simple but there are a number of aspects of this definition, which need to be unpacked in order to understand what the study of learning involves. There are three key aspects of this definition, which we will go through in greater detail, change, behaviour and experience.

Learning Due to 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 decrease in the frequency, intensity, speed, duration or form of a behaviour. For example, when we learn to ride a bike we show increases in our speed and the time that we can stay on the bike before we fall off and the accuracy with which we can steer the bike. However, when we learn to quit smoking we show decreases in the number of cigarettes that we smoke and increases in the time before we have that first cigarette in the morning.
- 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.
- 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 changes in the ability of synapses to excite or inhibit other synapses.
- 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. It is much easier to determine whether a rat has learned how to navigate a maze by measuring how quickly it moves from one part of the maze to another part of the maze, than it is from looking at the neurons in its hippocampus, which encodes memories of spatial relationships.

Neural Process of Learning (observation)

- Also, although we have a rudimentary understanding of some of the neural processes involved in learning 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. An example of the distinction between learning and performance can be seen in the following instance. Imagine a primary school child who performed poorly on standardized maths tests. As a consequence of his poor performance his teacher concluded that he hadn't learned the maths concepts and so assigned him to the remedial maths class. However, when his father introduced an incentive scheme