# *PSYC1001 Summery Notes*

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## Lecture 2: Clinical Perspectives in Psychology ~1/3

**PROFESSOR RICHARD BRYANT**

Learning Outcomes:
1. What does Psychology have to do with the real world?
2. How does basic psychology inform clinical practice?

### ***Psychology and the real world***

Psychology is the scientific investigation of mental processes, based on scientific method, experimental control and strict measurement to form a basis of understanding from the changing psychological aspects of the world.

#### *Stress disorders*

PTSD is a stress disorder that affects about 10% of survivors after a traumatic event. Patients suffer distressing memories of the event, anxiety, and avoidance of reminders.

### ***Psychological Debriefing***

A 'managing stress response' that has been used for over 30 years as trauma counselling within 48 days of a traumatic event. It requires people to discuss their expedience and emotions on the basis that talking about it is a good thing. It is a method intended to prevent PTSD, and millions are invested into programs every year, **but there is no evidence that it works**.

#### *How can we conclude if psychological debriefing works or not?*

*1. Measurement*

Patients need to be assessed before treatment with standardised measures, so a starting point of ones distress can be determined. Properly developed measurement tools are essential to being able to monitor a persons progress.

*2. Comparison*

A comparison condition is needed, as we can only know if a treatment works if there is something we can compare it to. Observed changes in a patients wellbeing may be due to

- Time having passed
- The amount of attention received
- The number of repeated assessments, if any

Therefore, there MUST be a comparison condition to rule out these factors. A comparison condition may be someone that suffered the same experience, but did not receive psychological debriefing. Both cases would be evaluated a certain amount of time after the event.

*3. Controlling for Bias*

A bias sample and allocation to a treatment can be avoided by randomisation. e.g. the type of treatment a patient gets is pure chance.

*4. Assessment Bias*

Bias in how people are assessed, hence, the assessment after treatment must be independent. This means that the person carrying out the assessment of a patient has no knowledge of what prior treatment the patient has experienced so as to not provide a biased opinion. This is known as a blind assessment.

*a. Double blind studies:*

Often used for trails involving drugs, so the clinicians nor the patient know exactly what is being administered.

*5. Quality checks*

It's critical to ensure standardised procedures are being followed properly so as any results from assessments are reliable. Treatment 'fidelity' checks ensure people do what they are meant to do, so sessions, and questions asked of the patient are up to standard.

*Applying this knowledge to psychological debriefing*

These principals were ignored for decades, so people believed psychological debriefing worked. Controlled trails have now shown that is does not prevent psychological disorders despite being 'liking it'.

Psychological debriefing is now being debunked, and policy makers are looking for new alternatives that have been tested and have evidence (this is a new thing - policy makers basing decisions on scientific evidence). For example WHO requires multiple trials to validate a psychological intervention before they put it in place. It is being recognised that it is not scientific, or ethical, to deliver ineffective treatment.

Example: Study in Peshawar, Pakistan, shows that:

- 60% of participants have experienced war and conflict
- 20% of participants have experience natural disaster

Therefore, any psychological trails need:

- Random allocation to groups
- Independent assessments
- Standardised assessments
- Strict protocols for interventions
- Checks that interventions are valid

to be considered controlled.

***What does Basic psychology say about trauma response?***

1. Classical Conditioning

What we understand of human psychology is based on classical conditioning. In relation to trauma, Classical conditioning is learning that certain environmental stimuli predict harmful events, therefore teaching association.

Example in Rats fearing light (a **fear conditioning model**):

- If a light was to turn on every time an electrical shock was administered to a rat the rat would begin to associate light with an electric shock, and fear the light
- When a light was turned on, with no electric shock, the rat would display fearful behaviour, sucks freezing, increased heart rate, changes in blood pressure, and release of stress hormones.
- Hence, the trauma is an electric shock, and the reminder is the light. Distress is then caused because of the rats fear of the light.

These **animal models** are shaping how we understand and treat traumatic stress disorders.

2. Extinction Learning

Extinction is where a subject will relearn a response when stimuli are repeatedly presented without a negative outcome, teaching them that there is no longer anything to fear. This idea explains why trauma victims may gradually feel better over time - events that they associate with their trauma are encountered, and when nothing bad happens, they begin to relearn that it doesn't mean a negative outcome.

Example in firefighters:

- Cadets were ran through fear conditioning and extinction learning before they experienced any trauma
- Four years later, after being exposed to trauma of the job, they were assessed for stress disorders.

- Those who developed stress disorders were poorer in extinction learning before they started work

This shows that basic animal models of learning are critical to understanding human responses, and being about to identify people who are at risk. Hence, this opens up the possibility of better prevention methods.

3. Treatment

The rat example shows that extinction learning (new learning of the light being safe) treats the rats of its fears. We can therefore apply this to treating humans, but providing reminders of traumas in a safe way, that leads them to learn that they don't need to be fearful. This is the now the main way we treat patients after trauma, and its based on vital animal work.

*Can animal neuroscience shape clinical practice?*

***Yes,*** it can teach us about the basics of the brain's model in whats considered to be a more ethical manner.

*Neurobiological model of PTSD*

Fear conditioning occurs in the amygdala, and the medial prefrontal cortex (MPFC) regulates the amygdala, which is essential to extinction learning. Therefore, its been proven that those who suffer from PTSD are deficient in the MPFC.

*The same brain regions underpinning extinction in rats predict exposure therapy for fear in humans.*

*Neurotransmitters*

Glutamate is the major excitatory neurotransmitter, and animal studies show that its linked to emotional learning. By increasing glutamate experimentally before extinction trails, we can increase extinction learning in rats. This can than be applied to humans to improve therapy for stress disorders. This method is not like most anxiety medications, its not acting as a bandaid, rather aiming to aid fixing the root problem.

***In summery***

- Basic Psychological principals and research shape major policies and practices in society
- This basic work is essential for developing new approaches to many disorders
- It is also essential for testing if what we do works or not

Much of what we know about Psychology and neuroscience would not be known without animal models and experiments.

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## Lecture 3: Psychological Perspectives ~2/3

**PROFESSOR SIMON KILLCROSS**

Learning Outcomes:

1. The scientific approach in Psychology
2. A brief history of scientific psychology
3. How psychology is taught
4. Relationship between psychology and other disciplines
5. Provide framework for you to think about psychology
6. Preview some of the topics and themes you study in this course

**Definition**: Psychology is the scientific study of behaviour and mental processes where behaviour is overt actions, & mental processes are thoughts, emotions, and the interaction between the two. Examples of overt actions of behaviour include:

- Heart rate, sweating, reactions, brain scans, all of which provide a index into ones physiological state.

All of these actions must be able to be measures objectively

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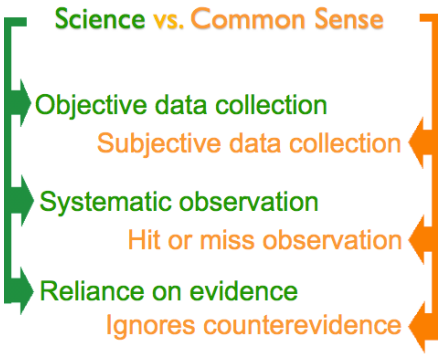
*Goals of scientific psychology*

- *Description* of behaviour using careful observations
- *Prediction* allows for specification of the conditions under which a behaviour likely will or will not occur
- *Explanation* involves identifying the causes of the behaviour (why something occurs)
- *Facilitating* changes in behaviour (therapy)




*Why <u>scientific</u> psychology*

Psychology isn't necessarily common sense. It is not looking for a description of what is happening rather an explanation of why and how. Common cliches can be used to explain most behaviour, such as 'birds of a feather flock together' or 'opposites attract', but this common sense, or knowledge, can be proven wrong.

The aim is to come up with a hypothesis, and design an experiment to **show you are wrong**. This continues until its accepted that if it cant be disproved, it must be accurate.

***Psychology and Learning***

*Education and Learning smart*

What is the best way to learn? There is not 'magic' way, rather a variety of techniques that work better than others.

Some Myths

- Humans only use 10% of their brain
- "Left brain" and "right brain" people differ
- You must speak one language before learning another
- Brains of males and females differ i ways that dictate learning abilities
- Each child had a particular learning style

"Brain training" games are also useless, while you will improve greatly at the games, it wont apply to other activities in life.

*How to improve your learning*

Some methods will work in different situations and across different topics, to provide retention, but findings have shown…..

<u>What Works</u>

1. Self testing
2. Distributed practice

<u>What may work</u>

1. Elaborative interrogation
2. Self explanation
3. interleaved practice

<u>What doesn't work</u>

1. Highlighting and underlining
2. Re-reading
3. Imagery for text

Links to research on slides

*Why are we not taught this?*

- Often teachers are not being told what works based on experimental evidence.
- There is an awful lot of overwhelming information and research, making it hard for people to sort through it to find the most practical information.

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*Psychology can reveal things about ourselves that we didn't know*

Milgram's studies of obedience to authority is an example of this, and begins to explain some of human history, such as why people willingly participated in the holocaust.
His experiment involved asking a volunteer to play the role of a 'teacher' in an associated learning experiment. When the 'student' answered incorrectly, they were asked to administer electric shocks, at increasing voltages.

While some would refuse to administer the shock as the voltage got higher, others would continue. It was found that the following factors affect obedience to authority

- Perceived authority of the person giving orders
  - eg Wether they were wearing a lab coat, and wether they were a man
- Presence of contradicting authority
  - eg If another person of authority was there telling them they didn't need to continue
- Level of direct responsibility for the outcome
  - Blind obedience is more likely to occur when people shift the responsibility for their actions to something or someone else

Other experiments, such as awareness tests, and change blindness, have also revealed how much the mind misses when something its being focuses on. In general, humans are not good at understanding what is happening in our heads, and understanding other peoples behaviours.

*A very brief history of psychology*

- Psychology emerged in part from philosophy, although its defended as an empirical science
- Early assumption was that the goal was to understand the structure and contents of the mind
- Phenomenology - metaphor of looking inwards to examine ones own conscious
- Wilhelm Wundt - got observers to report on their experiences under different conditions "what do you think when you look at this object'

- Introspection — the examination or observation of one's own mental and emotional processes
  - This failed as peoples self-reports were not reliable
- Functionalism — considering mental life and behaviour in terms of active adaptation to the person's environment
  - Willian James emphasises the analysis of psychological processes in terms of their function
  - eg attention serves to highlight analysis on certain stimuli
  - Consistent with evolutionary framework
  - focus on the rules and steps to achieve a task, rather than the underlying mechanism
    - It has then be argued by Jerry Fodor that the task can be implemented into a processing study, such as a computer or alien nervous system (like a software logarithm)
- Behaviourism
  - An early challenge to introspection
  - Argued that subjective experience could not be verified by an objective observer
  - **This was a highly successful approach**
  - Radical Behaviourism
    - Only an observable behaviour is qualified as scientific
    - Hence internal states (eg thoughts and emotions) are NOT part of scientific psychology
  - Methodological Behaviourism
    - Acceptable to study internal states as long as these can be LINKED to observable behaviours
    - **Still the approach that underlines much of cognitive psychology and associative learning today**