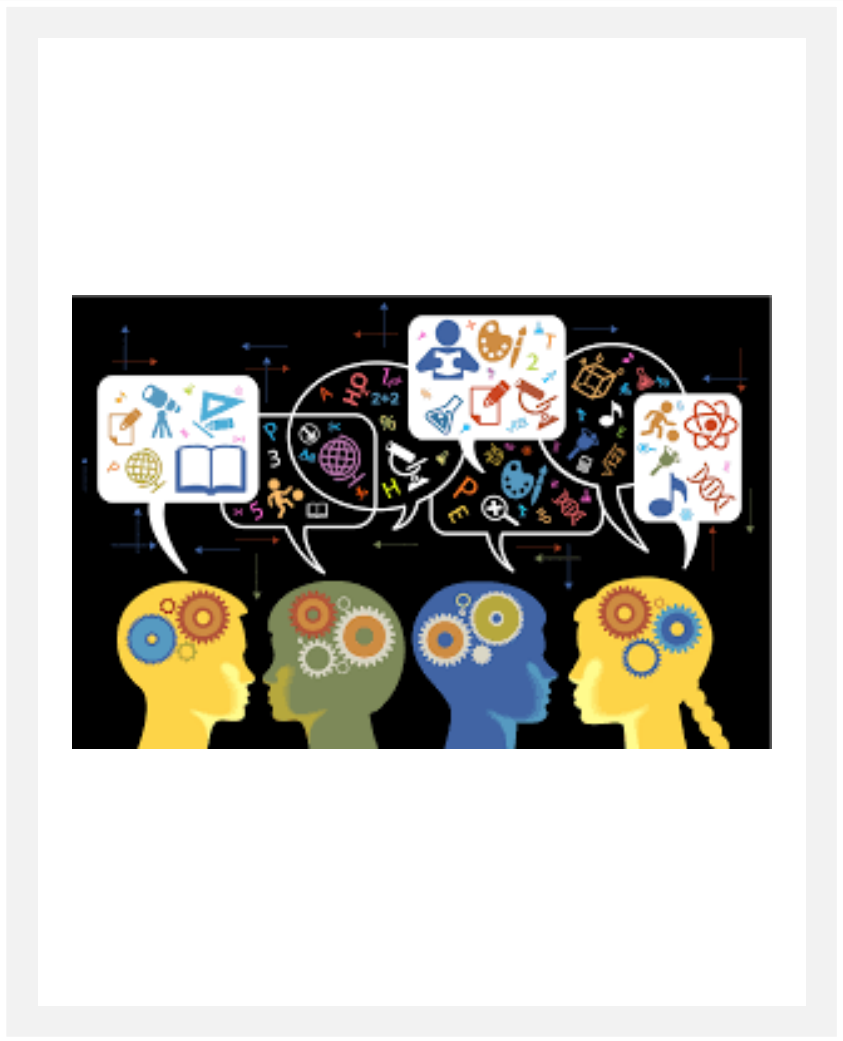


RESEARCH IN PSYCHOLOGY

Psychology as a Science

IS PSYCHOLOGICAL RESEARCH SCIENTIFIC?

- Two main questions...
- 1. Is Psychology a science? Does it meet the criteria for a science?
- 2. Should Psychology be a science? Should we strive for this as a discipline?
- 3. What is the alternative?

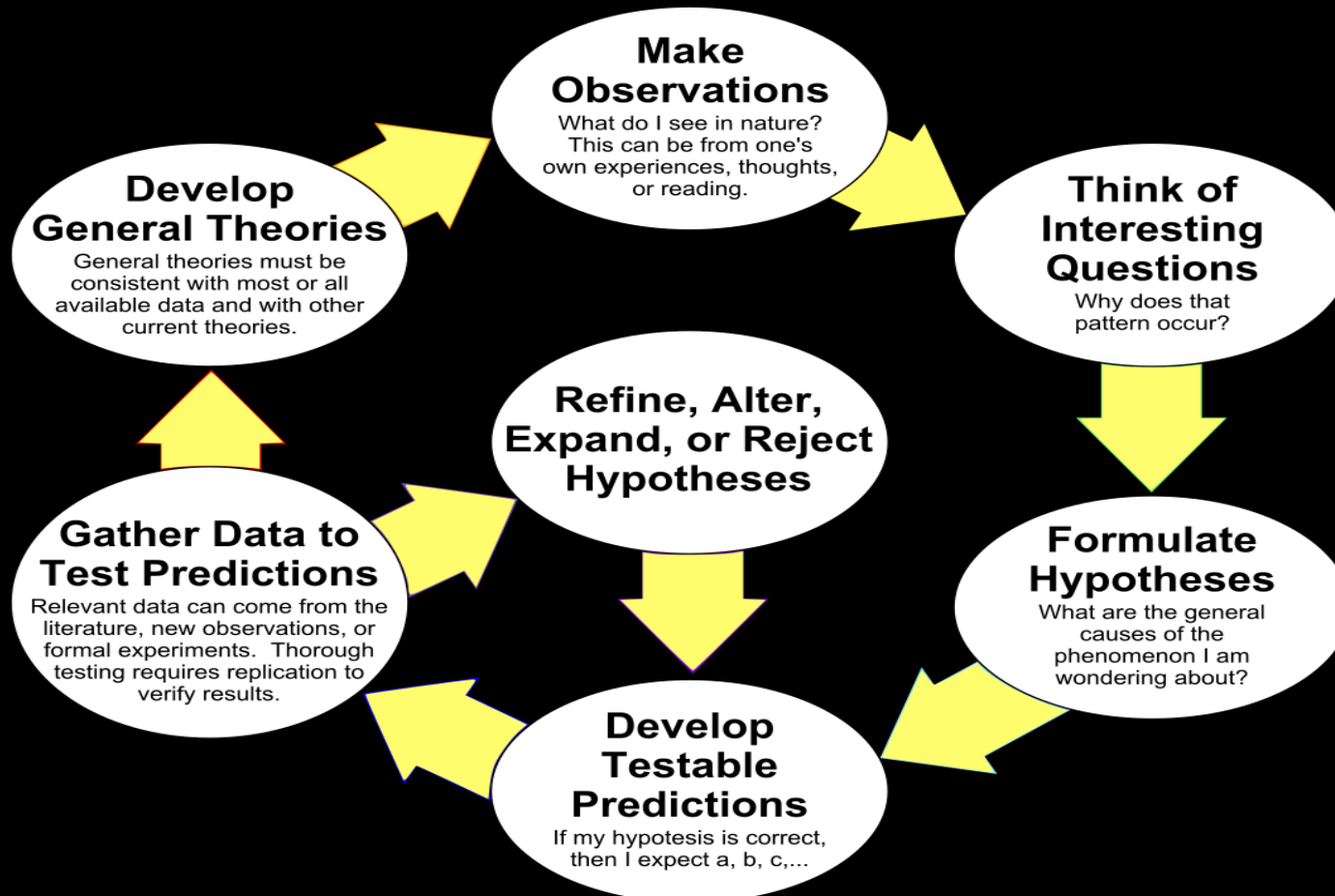


WHAT IS SCIENCE?

- According to Eysenck & Keane (1990), science has the following features;
- The use of the scientific method
- The ability to make controlled observations and the manipulation of variables
- Reductionism
- Falsifiability
- Objectivity
- Replicability
- The testing of theoretical predictions
- A clear theoretical orientation (paradigm)



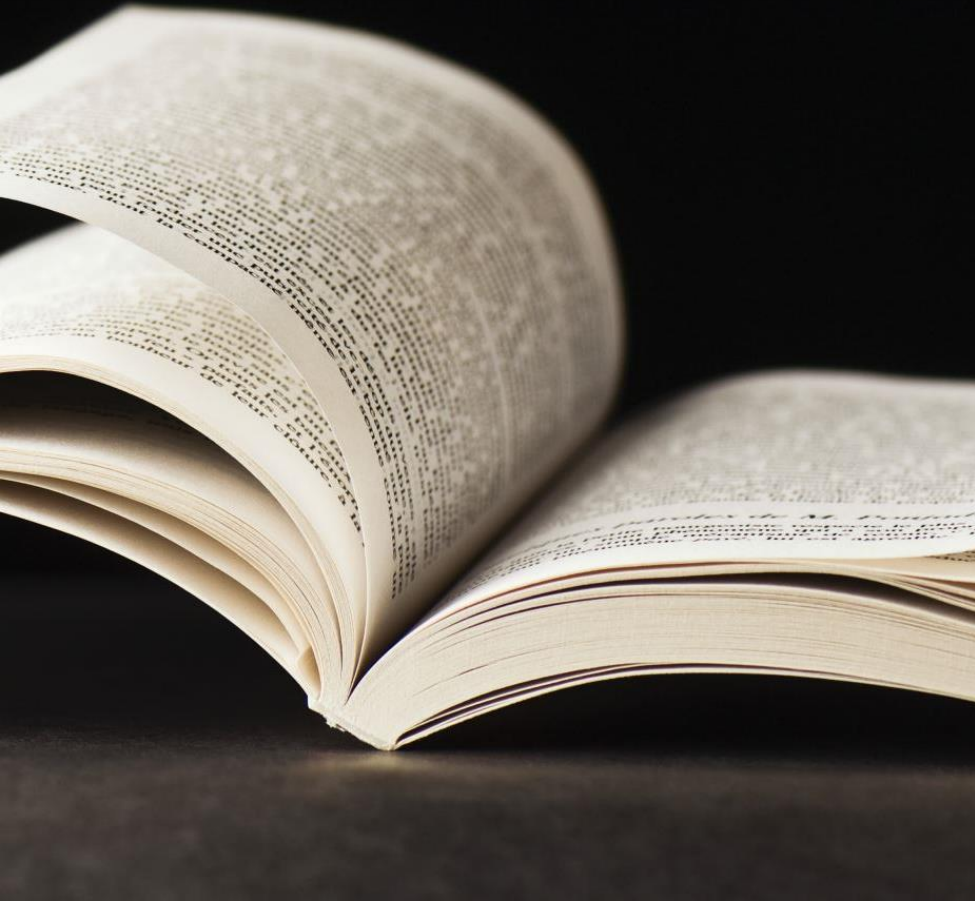
THE USE OF THE SCIENTIFIC METHOD





MUCH OF PSYCHOLOGICAL RESEARCH IS
CONDUCTED USING THE SCIENTIFIC
METHOD

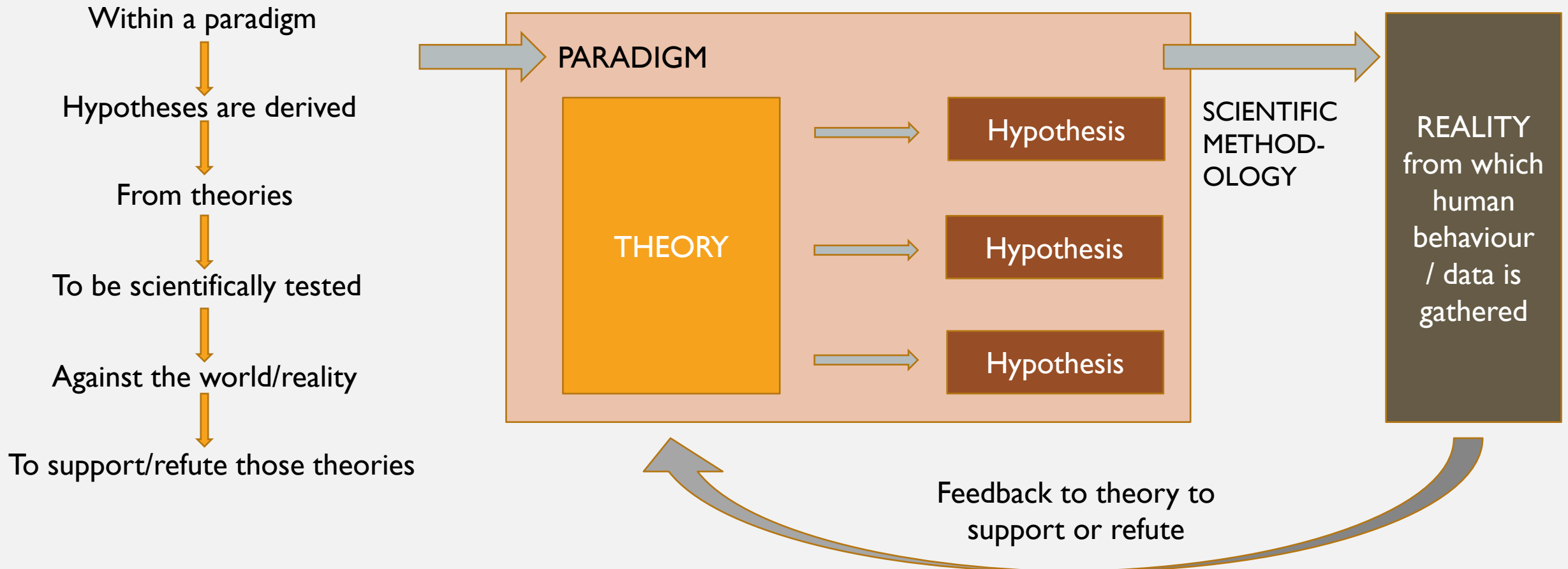
How does this relate to this module of Study Skills?



JOURNAL ARTICLES

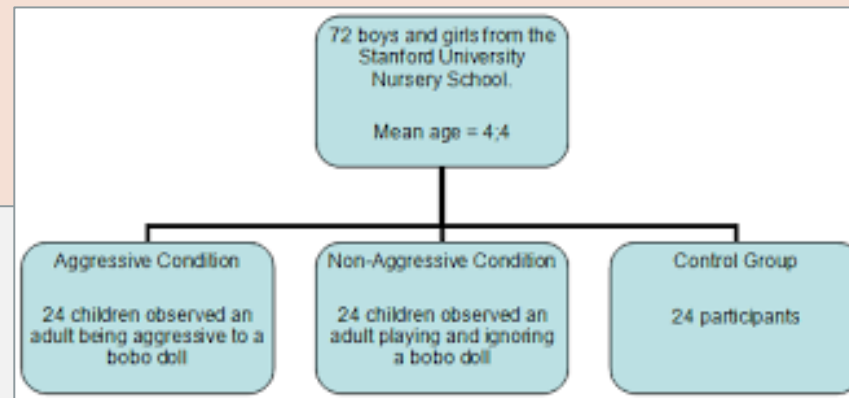
- Much of the literature that you will be reading will be in the form of Journal Articles.
- These follow a specific format, and you will be learning what this entails in more detail in Semester two.
- However, for this session we will be considering the merits of Psychological research and the way in which you will be required to present your work for many of your assessments.

THE SCIENTIFIC METHOD



CONTROLLED OBSERVATIONS AND MANIPULATION OF VARIABLES

- Think of examples that you have come across where research has used controlled observations...
- E.G. Dement & Kleitman (1957) The relation of eye movements during sleep to dream activity: an objective method for the study of dreams.
- And the manipulation of variables?
- The Bobo Doll Experiment and the three conditions (variables).



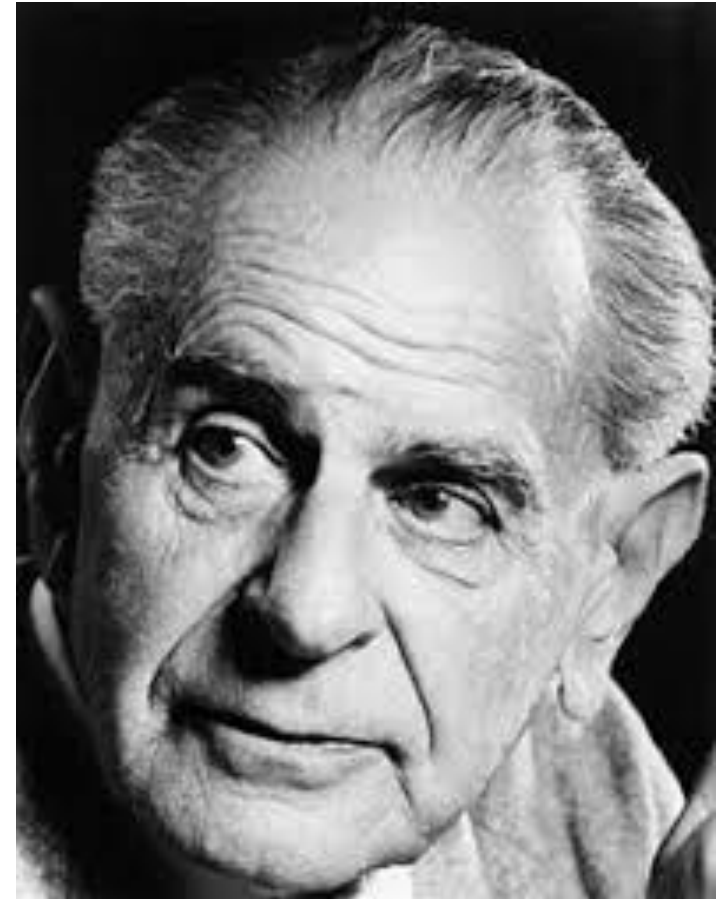
WHAT IS FALSIFICATION?

- According to Popper (1969), we do not seek to prove a theory or idea, we seek to disprove it.
- If we cannot disprove a theory, concept or idea, then we can tentatively accept it as being non- falsifiable. But does this mean that these ideas are true?
- We must look at the available evidence until such time that new findings emerge...This is why we always include a null hypothesis in research.
- Think of Freudian ideas of the unconscious, can we disprove these concepts? Does this mean that they are correct?
- The goal of scientific research is to disprove our theories and ideas.
- Just because you've never seen a black swan, it doesn't mean they don't exist...



SO, CAN PSYCHOLOGY EVER BE TRULY SCIENTIFIC?

- Is Psychology fully objective?
- Are all psychological investigations fully controlled?
- Is there a clear paradigm (more on this later)
- Can we always produce replicable results?
- According to Popper (1972), Psychology is unique because we are humans studying ourselves. How is it possible to remain fully objective and impartial?
- We always have an idea of what we are looking for. We start out with an idea or concept that we expect to see... even in animal studies...



AN ADDITIONAL POINT-

The Heisenberg uncertainty principle states that it is impossible to know simultaneously the exact position and momentum of a particle. That is, the more exactly the position is determined, the less known the momentum, and vice versa. This principle is not a statement about the limits of technology, but a fundamental limit on what can be known about a particle at any given moment. This uncertainty arises because the act of measuring affects the object being measured. The only way to measure the position of something is using light, but, on the sub-atomic scale, the interaction of the light with the object inevitably changes the object's position and its direction of travel.

- Heather (1976), people are not passive recipients; they actively engage in life and in research.
- Laboratory experiments are artificial and not representative of life. Generalising from these artificial situations are useless- they give us no indication of how an individual will respond or react in the real world.
- Think of the Heisenberg Uncertainty Principle....

Lacking in ecological validity

Mundane realism

IS OBJECTIVE SCIENTIFIC RESEARCH POSSIBLE IN PSYCHOLOGY?

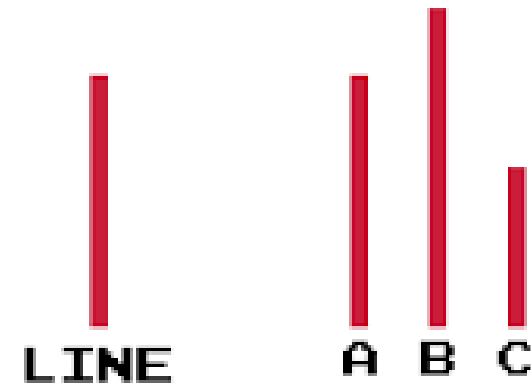
- Most people would agree that scientific research is necessary to separate the common-sense statements from the scientific facts.
- Take the following statements often quoted as examples of common sense:
- Birds of a feather flock together....
- How do we know? How would we test this?
- What about
- Opposites attract.....
- How do we know which of these opposing statements is true, if at all?
- This is where EMPIRICAL evidence is key



REPLICABILITY

- Replicability is an important feature of science. It means that a study should produce the same results if repeated exactly, either by the same researcher or by another.
- [Conformity in a lift](#)
- Social Psychology has demonstrated repeatedly, the power of social influence and conformity to social norms. Back in 1955 Solomon Asch showed how relatively easy it is to elicit compliance in individuals.
- [Asch \(1955\)](#)

WHICH LINE IS
THE SAME LENGTH
AS THE LINE
ON THE LEFT?



DOES PSYCHOLOGY SHARE THE SAME GOALS AS SCIENCE?

- According to Allport (1947) science has three main goals. These are;
 - Prediction
 - Understanding
 - Control
- Do we have these within psychology?



UNDERSTANDING, PREDICTION AND CONTROL

- **Understanding** – theories should provide understanding by being orderly (follow a pattern), consistent (reliable), parsimonious and true (valid).
- **Prediction** – a good theory should generate precise hypotheses to stimulate research to support or refute an idea. We should be able to test these hypotheses using statistics and probability, which allow us to make inferences from our findings.
- **Control** – theories should be useful and have practical implications, such as solving problems and improving the human condition.



EVALUATION

- You should now appreciate that psychology does not always address all three goals of science consistently in all cases. Sometimes we have one or two of the goals but not necessarily all three.
- However, will psychology meet all three goals one day, if not now?
- Does the use of the scientific method justify psychology being called a science?
- According to Miller (1983), psychologists are 'dressing up' and playing at being a science. We are in fact a pseudoscience and this can be dangerous.
- How and why? Think of the implications...



HOWEVER...

- Not all of the goals of science may be appropriate for psychology.
- One such example is Humanism, which openly opposes the label of science.
- And, according to the social constructionists, Psychology cannot be a science.
- Moreover, using the scientific method can sometimes result in detrimental outcomes. Think for example of psychopathology or criminality – can we guarantee that a specific behaviour will arise?



HUMANISTIC PSYCHOLOGY

- Psychology should not be classed as scientific because we are interested in understanding the uniqueness of human experience, which will be different for each and everyone of us.
- The humanistic approach advocates the idiographic approach, does not aim to make predictions, has limited scope for control and is concerned with UNDERSTANDING.



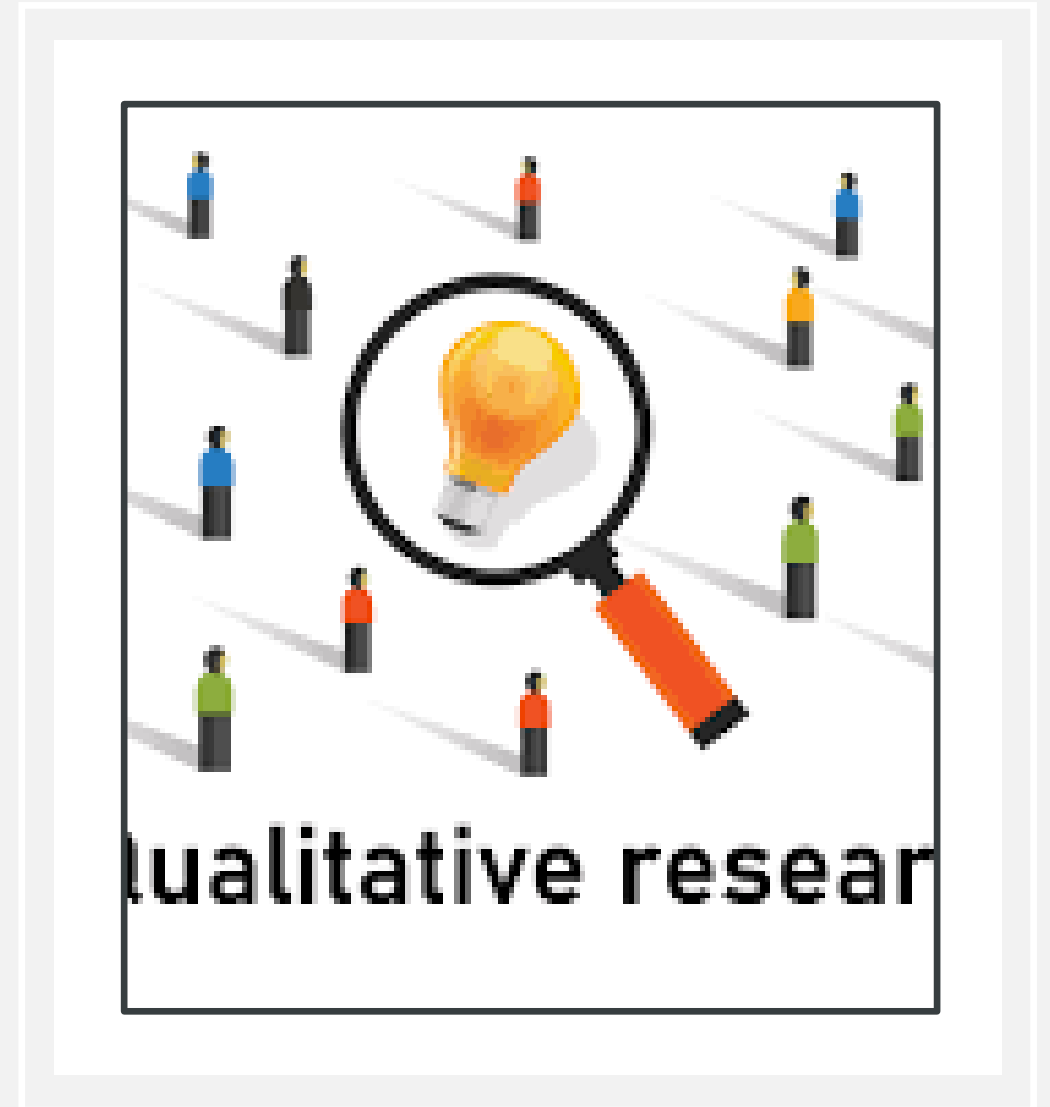
PSYCHOLOGY AND PARADIGMS

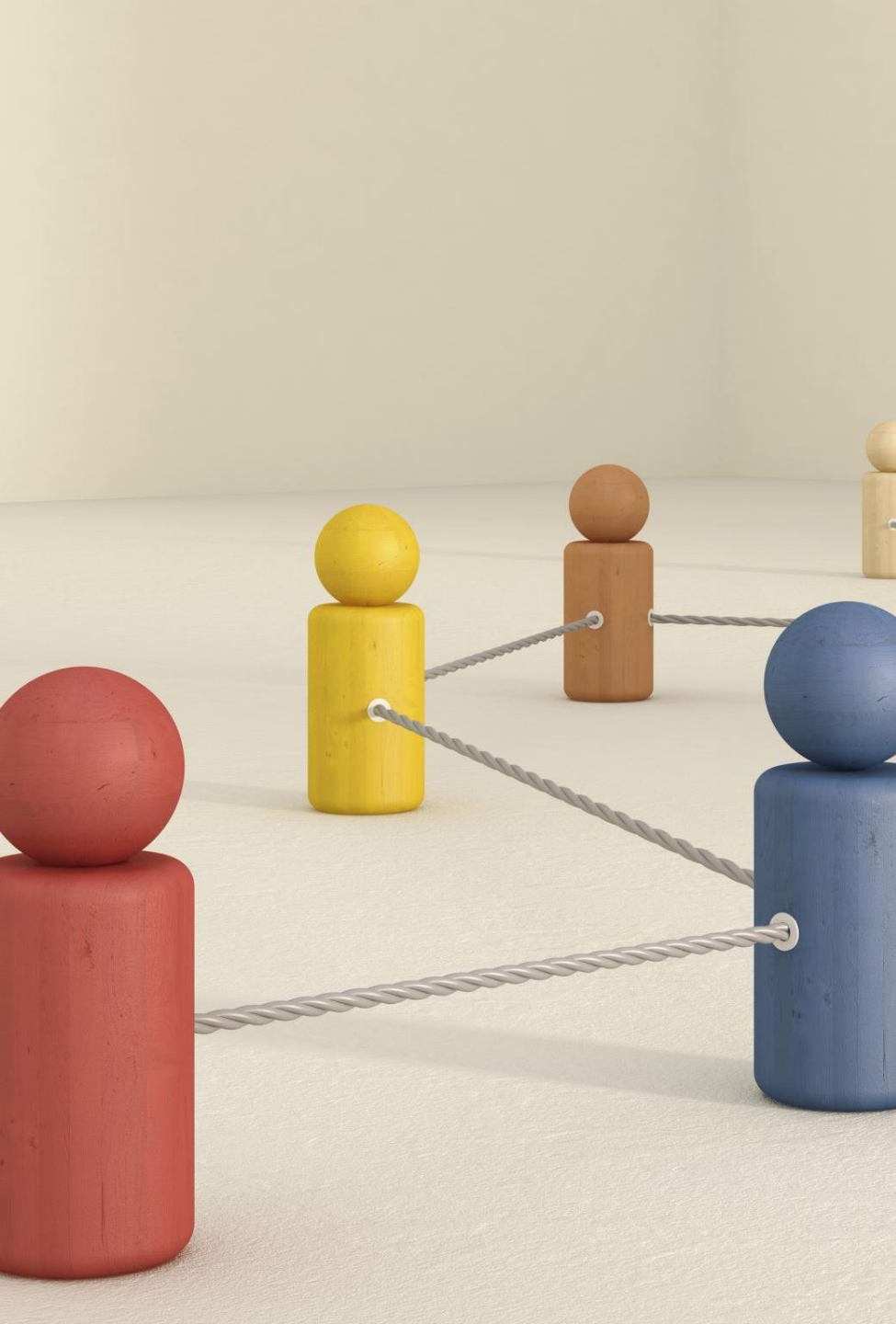
- According to Kuhn (1962) a science must have an overarching theoretical orientation which guides research, practice and investigation.
- There are three stages involved in the development of a science:
 1. Pre-science, there is no clear paradigm, but much debate about the direction of a theoretical approach.
 2. Normal science, a generally accepted explanation and interpretation of all findings.
 3. Revolutionary science, new evidence from research creates a paradigm shift where the old science is replaced by the new paradigm.
- Where is psychology situated?



HOWEVER, NOT ALL PSYCHOLOGICAL RESEARCH IS SCIENTIFIC...

- In recent years, an emphasis has grown on the value of individual experiences and people's views, perceptions and feelings.
- Whereas traditional Psychology has relied on controlled replicable data collection (referred to as quantitative data), there is a substantial body of evidence that now focuses on qualitative research, exploring individual's unique experiences and perceptions of their world.
- Nonetheless, both quantitative and qualitative research is still presented in largely the same reporting format, hence the need for this session in terms of academic report writing.





STRUCTURE OF A RESEARCH REPORT IN PSYCHOLOGY

- Five main elements –
 - Abstract
 - Introduction
 - Method
 - Results
 - Discussion



ABSTRACT

- Objective of the study: This describes why the researchers carried out the research.
- Summary of the background research.
- Methods used: This describes the research was conducted.
- Results obtained: This describes the most important findings of the research.
- Conclusions drawn: This describes what they found in the research and the larger implications.

INTRODUCTION

- A good introduction addresses the research questions:
- What research has been carried out in this area by other researchers? and,
- what is the point of the present study?
- It provides a discussion of the background research derived from the psychological literature.
- It begins with broad terms in order to set the context for the study.
- It provides relevant evidence using studies from the literature.
- It should state the rationale for the study.
- And it concludes with the specific aim of the study, including the research hypothesis/es or research question/s.



METHOD

A good method section should include all of the practical information necessary for someone else to replicate the work.

Divided into
the
following
subsections:

Design

Participants

Apparatus/
Materials

Procedure

RESULTS: QUANTITATIVE

- **Descriptive statistics**

- Clear presentation of the findings
- Presents demographic information, mean scores, frequencies etc
- Tables of means and standard deviations
- APA format of tables
- Comments on what these indicate about the findings of the study

-

- **Inferential statistics**

- Describes the type of statistical analysis used
- Presents observed values and statistical significance
- Provides a brief written summary of the findings.

RESULTS: QUALITATIVE



- Outlines and justifies the type of qualitative analysis. E.g. Thematic Analysis, IPA etc.
- Presents example quotes from the narrative
- Presents key themes, concepts etc.
- Draws together Superordinate and sub-ordinate themes
- Organises/summarises these themes



Remember, in Psychology
nothing is ever 100% proven or
proved!

DISCUSSION

- The final section which includes the following elements:
- The main findings
- These findings in relation to the research hypotheses or questions stated in the introduction, alongside the supporting literature
- Explanations for unexpected results and an evaluation of the methodology
- The potential implications
- Future research suggestions
- The relative importance of the findings

FINALLY...THE ROLE OF APA FORMATTING

- You will be learning how to structure your own research reports in semester two, but it helps to prepare your understanding of how and why we introduce you to APA referencing and formatting so soon in your studies, as it underpins all that we do!
- APA has strict guidelines not just for referencing, but for report writing too, whether or not you are writing a quantitative or qualitative study.

