

## **LOGICAL THINKING SUMMARY NOTES:**

### **WEEK 1: Introduction to logical thinking** **PG 2**

- Aims of logical thinking, 3 benefits to logical thinking
- 3 challenges facing psychologists

### **WEEK 2: non-rational forms of persuasion and barriers to logical thinking** **PG 4**

- Non-rational forms of persuasion
- Barriers and limitations to logical thinking- unavoidable and avoidable barriers

### **WEEK 3: The ground rules of logical thinking (7)** **PG 7**

### **WEEK 4: The double-edged sword of language** **PG 9**

- 3 foundational aspects of language
- 3 requirements of a good definition
- Sources of confusion in language
- Using language as an explicit and implicit measure

### **WEEK 5: Identifying, analysing and casting arguments (diagramming)** **PG 13**

### **WEEK 6: deduction and induction** **PG 15**

- Deductive arguments and Inductive arguments
- The hypothetico-deductive method

### **WEEK 7: Evaluating arguments** **PG 19**

- Fallacies
- 10-question procedure to evaluating argument

### **WEEK 9: The 'isms' in psychology and why they matter** **PG 23**

- Ontology, epistemology
- The two types of psychologists

### **WEEK 10: arguing about enduring conceptual issues in psychology** **PG 26**

- The mind-body problem
- Determinism vs free will
- Reductionism vs holism
- Nature vs nurture

### **WEEK 11:** **PG 30**

- Common misconceptions when reviewing empirical psychological research

### **WEEK 12: how psychology, philosophy and science fit together** **PG 34**

- Narrow science vs broad science
- Misconceptions of science and philosophy in psychology

## **WEEK 1: INTRODUCTION**

### **AIMS OF LOGICAL THINKING:**

1. TO achieve consciousness-raising- we want to be able to understand and evaluate material
2. How can we evaluate our material?
  - I. Clarity= ask how clear it is and look at it clearly
  - II. Coherence= is it consistent? Does it make sense?
  - III. Conciseness= separating what is important from what is not important- need to be able to judge what is worth our attention
3. In order to achieve the 3 Cs we need to be able to look at material in 2 ways:
  - I. Synthetically- standing back and looking at everything, the overall relations and connections, putting it all together
  - II. Analytically- breaking down into smaller parts, examining details

### **WHY LOGICAL THINKING AS A SUBJECT?**

1. Logical thinking gives us the right tools for achieving the aims of becoming more aware, understanding, evaluating, and doing good scientific research.
2. In every area of study, students are typically expected to develop the capacity for critical and clear thinking- but students are rarely given any specific training in the tools of critical analysis

### **WHY IS LOGICAL THINKING IMPORTANT FOR PSYCHOLOGISTS- 3 CHALLENGES FACING PSYCHOLOGY**

1. Separating scientific psychology from pop psychology, and knowing what it takes to do good science
  - Academic psychology is defined as the scientific investigation of mind and behaviour- aims to separate fact from myth, to overcome misconception, and to extend our knowledge and understanding of who we are and why we behave as we do
  - Scientist- practitioner model- psychologists are trained as scientists first, and then as practitioner. Psychological practice must be scientifically grounded and evidence-based. Only forms of practice that have been validated through scientific research are recommended.
  - MACHADO & SILVA- conceptual analysis:
    - 3 components to the scientific method: experimentation, mathematization, and conceptual analysis
    - psychology has a poor view of the scientific method because we focus on just the first two and neglect the 3, and conceptual analysis is a central part of the scientific method
    - authors show evidence that we have neglected and devalued conceptual analysis- they go on to give examples of how it helps psychology.

- Petocz argues that conceptual analysis is actually the most important of the 3 components, because it is primary (also needed for doing good experiments and developing good mathematical models)
  - Critical inquiry acknowledges our cognitive fallability. It acknowledges we could all go wrong so we must constantly check out investigations.
2. Psychology is not a black-and-white subject- psychology's richness and complexity makes critical thinking skills vital for finding our way successfully through all the different and competing material.
  3. Psychology still has not worked out a clear and coherent position on the big questions- have significant practical implications

### **3 BENEFITS TO LOGICAL THINKING:**

1. Raising level of awareness of our own assumptions
2. Increase in expertise- better understand material that faces us, we see it more clearly- apply the three C's in our own work- show how you have used your reading and information to develop and support your point of view
3. Promoting open-mindedness and freeing us from the constraints of authoritarianism by enabling independence of thought- Doonesbury comic strip