

Cognitive Psychology and its Applications



SUMMARY

Topic	Knowledge, skills & understanding
Perception and Attention	<ul style="list-style-type: none"> • Perception <ul style="list-style-type: none"> – Processing sensory information: know what is meant by 'top-down' and 'bottom-up' information processing – Visual perception: understanding the nature of constancy and the problem of illusion; and the influence of factors such as motivation, expectation, emotion and culture on perception • Attention <ul style="list-style-type: none"> – Reasons for attention: understand the limits on human information processing. Be familiar with the need for selective and divided attention – The nature of selective attention: understand models of selective attention including Broadbent's, Treisman's, Deutsch and Deutsch's & Kahneman's models. Be familiar with the evidence upon which they are based
Remembering and Forgetting	<ul style="list-style-type: none"> • Remembering and Forgetting <ul style="list-style-type: none"> – The nature of memory: Models of memory: the multi-store model (Atkinson and Shiffrin) and its alternatives (including episodic, semantic and procedural memory, levels of processing and working memory). Empirical investigations of the ways in which people recall information. – Reasons for forgetting: theoretical explanations of why we forget: decay, interference, retrieval failure, repression • Using memory <ul style="list-style-type: none"> – Memory in everyday life: understanding the processes involved in the recognition of faces, visual and iconic memory. Compare competing explanations for face recognition (feature analysis vs. holistic form). – Eyewitness testimony: understanding factors affecting the reliability of the testimonies of eyewitnesses to incidents.

Language	<ul style="list-style-type: none"> • The nature of language <ul style="list-style-type: none"> – Defining language: know definitions of language, syntactic, semantic and interactive. Compare human language and communication systems in other species (e.g. bee dancing). • The functions of language <ul style="list-style-type: none"> – Language in thinking: Understanding the theoretical explanations of the relationship between language and thinking (the work of Whorf, Piaget and Vygotsky). The extent to which cultural factors may influence the expression and interpretation of language. – The communicative function of language: understand how language forms are affected by the social context.
Thinking	<ul style="list-style-type: none"> • The nature of thinking <ul style="list-style-type: none"> – Defining thinking: different definitions of thinking: thinking as association; thinking as cognitive restructuring; thinking as adaptation. – Ways of thinking: that there are different ways of thinking: insight; convergent and divergent thinking; cognitive styles; probabilistic reasoning etc. • Issues in thinking <ul style="list-style-type: none"> – Representation: the ways in which we represent knowledge; concepts; schemes; cognitive maps; enactive, iconic and symbolic representation; the problem of thinking about thinking. – Investigating thinking: different sources of evidence for making inferences about thinking: introspection and thinking aloud protocols; behavioural observation; measuring reaction times, analysing errors; physiological measures.
Problem Solving and Artificial Intelligence	<ul style="list-style-type: none"> • Problem solving <ul style="list-style-type: none"> – How humans solve problems: understand how humans solve problems by trial and error, development of learning sets, lateral thinking and brainstorming. – Studying human problem solving: know how human problem solving has been investigated: Gestalt approach to problem solving, solving adversary and non-adversary problems. • Artificial Intelligence <ul style="list-style-type: none"> – The nature and scope of artificial intelligence: know what the terms 'computer' and 'artificial intelligence' mean. Understand the difference between strong and weak artificial intelligence. – Solving problems using artificial intelligence: understand how computers have been used to solve problems including the General Problem Solver, Means-End Analysis programs, expert systems.