

1.1 The three approaches

Name: _____ Class: _____ Date: _____ Total: 34 marks

KEY WORDS neuroplasticity • schema • social identity theory

The three approaches

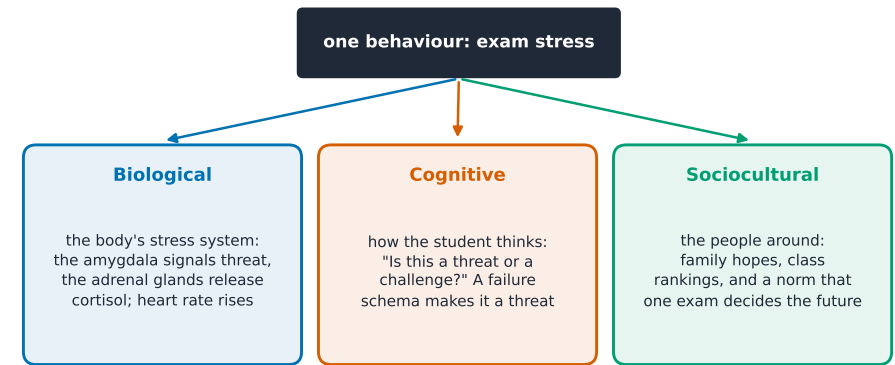
Objective

Explain behaviour through the biological, cognitive and sociocultural approaches, describe one named study for each idea with its result, and answer Paper 1 Section A short-answer questions (4 marks each) for the course first assessed in 2027.

1 Key knowledge and worked examples

Approaches toolkit. Biological: localisation (H.M.); neuroplasticity (Maguire: 16 taxi drivers against 50 controls, a correlation; Draganski: juggling, an experiment); MRI shows structure, fMRI activity from blood flow, EEG electrical timing; neurotransmitters and hormones (Kosfeld oxytocin: 45% against 21% gave all); twins (Kendler: genes about 38% of depression risk); gene-environment interaction (Caspi 5-HTT, only after stressful events). Cognitive: a model must make predictions; multi-store and working memory; schemas and reconstructive memory (Bartlett); System 1 and 2, anchoring (wheel 10 → 25%, 65 → 45%); leading questions (Loftus and Palmer: “smashed” 40.8 mph, “contacted” 31.8 mph); flashbulb memory (Neisser and Harsch). Sociocultural: social identity (Tajfel’s minimal groups); social learning, four steps (Bandura); conformity (Asch: about a third of answers; Bond and Smith: higher in collectivist cultures); Berry’s four acculturation strategies.

Worked example 1: one behaviour, three levels. Exam stress before the gaokao: biological (cortisol rises), cognitive (the student appraises the exam as a threat), socio-cultural (family hopes and class rankings). Each level explains a different part of the same behaviour.



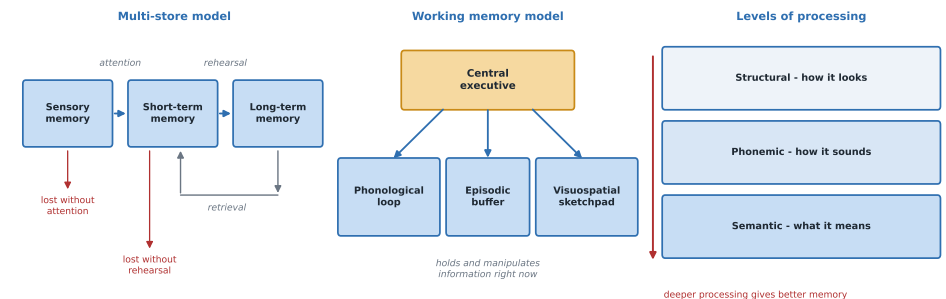
The levels interact: a threat appraisal raises cortisol, and a calm teacher can lower both.

Worked example 2: a 4-mark answer. *Describe one study of the reliability of memory.*

Loftus and Palmer (1974) showed 45 students films of car crashes and asked how fast the cars were going when they “smashed” or “contacted” each other (the IV was the verb). “Smashed” gave a mean estimate of 40.8 mph and “contacted” 31.8 mph. A week later, 32% of the “smashed” group said they had seen broken glass, against 14% of the “hit” group. This suggests that a leading question can change the memory itself, so memory is not always reliable.

The four marks come from: the study named, the method (what was changed), the result with numbers, and a link back to the question.

Worked example 3: a model makes predictions. Working memory predicts that two tasks clash only when they use the same part. Repeating words (phonological loop) and counting aloud (also the loop) clash; repeating words and picturing a map (sketchpad) do not.



2 Practice

2.1 Define localisation of function and neuroplasticity. [2]

2.2 Maguire et al. (2000) found that taxi drivers had a larger posterior hippocampus. State the comparison, explain why this study cannot show that driving caused the change, and name a study that can. [3]

2.3 Explain the logic of a twin study, and what Kendler et al.'s (2006) figure of about 38% means for depression. [3]

2.4 Using the working memory model, predict which pair of tasks will interfere more: (a) learning a word list while tapping a rhythm on the desk and picturing a route; (b) learning a word list while saying “the, the, the” aloud. Give a reason. [2]

2.5 In Tversky and Kahneman's (1974) study the wheel stopped at 10 or 65. State the two typical answers and name the bias. [2]

2.6 Name Berry's acculturation strategy for each student who moves from Chengdu to study in Toronto: (a) she keeps speaking Sichuanese at home and also joins the school's debating club; (b) he stops using Chinese and spends time only with Canadian friends; (c) she mixes only with other Chinese students and avoids local events; (d) he feels part of neither group. [4]

3 Exam-style questions

3.1 (*Paper 1 Section A.*) Describe one study of neuroplasticity. [4]

3.2 (*Paper 1 Section A.*) Explain how schemas can affect memory, with reference to one study. [4]

3.3 (*Paper 1 Section A.*) Explain social identity theory, with reference to one study. [4]

3.4 (*Original, 6 marks.*) Using Caspi et al. (2003), explain why one approach alone cannot fully explain depression. [6]

Solutions

2.1 Localisation: particular brain areas do particular jobs, such as the hippocampus storing new memories (1). Neuroplasticity: the brain's ability to change its structure with experience (1).

2.2 Sixteen London taxi drivers were compared with 50 other men (1). It is a correlation: men with a larger hippocampus may be more likely to become, or stay, taxi drivers (1). Draganski et al. (2004) changed the experience in an experiment (three months of juggling), so it can show cause (1).

2.3 Identical twins share almost all their genes, non-identical twins about half, and both pairs share a home (1). If identical twins are more alike in a behaviour, genes probably play a part (1). 38% means genes explain about 38% of the differences between people in depression risk, so most of the difference comes from other factors (1).

2.4 Pair (b) (1): saying "the" aloud uses the phonological loop, the same part that holds the word list; tapping and picturing a route use other parts (1).

2.5 About 25% after the wheel showed 10, about 45% after 65 (1); anchoring bias (1).

2.6 (a) integration; (b) assimilation; (c) separation; (d) marginalisation (1 each).

3.1 Maguire et al. (2000) used MRI scans to compare 16 London taxi drivers with 50 men who were not taxi drivers (1). The drivers' posterior hippocampus was larger (1), and it was larger in drivers with more years in the job (1). This suggests the hippocampus grew with the demands of learning the city's roads, which is neuroplasticity (1). (Draganski et al. 2004, juggling and grey matter, also earns full marks.)

3.2 A schema is an organised set of knowledge that we use to make sense of new information (1). Bartlett (1932) had English students read "The War of the Ghosts", a Native American story, and retell it several times (1). The retellings became shorter, and unfamiliar details became familiar ones (a canoe became a boat) (1). This shows reconstructive memory: schemas change what we recall to fit what we already know (1).

3.3 Part of our self-esteem comes from the groups we belong to, so we favour our own group (1). Tajfel (1971) divided Bristol schoolboys into groups by a trivial task, a preference for one of two painters (1). The boys gave more points to their own group, often choosing the largest gap between groups over the most points for their own (1). So even a meaningless group creates in-group favouritism (1).

3.4 Caspi et al. followed 847 New Zealanders from birth (1). People with a short version of the 5-HTT gene were more likely to become depressed (1), but only after several stressful life events (1). The gene alone (biological) does not predict depression, and stress alone does not either (1): the result depends on both, a gene-environment interaction (1). So a full explanation needs the biological approach and the person's life events, as in the diathesis-stress model (1).

Review guidance: name the study, the method, the result and a link to the question; correlation before cause; (R1 3.4) both "only after" and the link to more than one approach. Authored guidance.