The three approaches

IB DP Psychology SL core approaches (biological, cognitive and sociocultural)

The three approaches: biological, cognitive and sociocultural

- explain behaviour at three levels: biological, cognitive and sociocultural;
- describe studies of localisation, **neuroplasticity**, chemical messengers and **genes**;
- explain **models** of memory, schemas, biases in thinking and the reliability of memory;

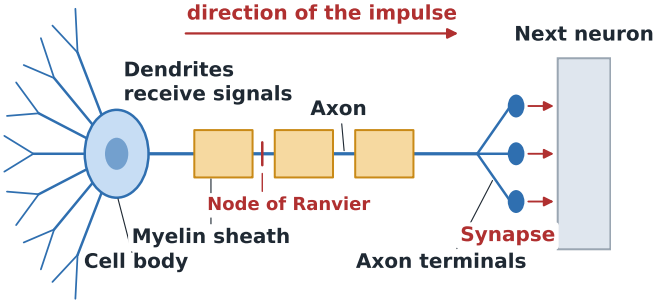
The three approaches: biological, cognitive and sociocultural (2)

- explain social identity, social learning, **conformity** and **acculturation**;
- answer a 4-mark Paper 1 question with a named study.

The biological approach

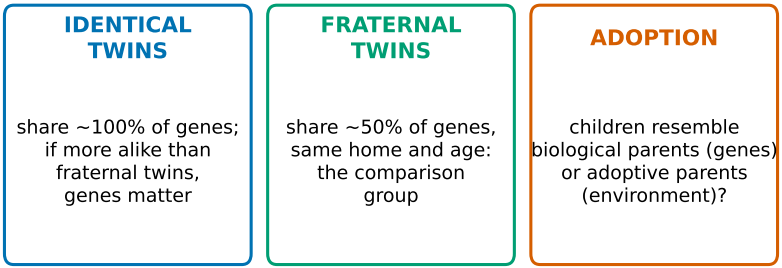
- The **biological approach** explains behaviour by what happens in the body: the brain, chemical messengers and **genes**.
- It assumes that thoughts and feelings have a physical basis, so changing the body can change behaviour.
- **Localisation of function** means that some brain areas do special jobs.
- After an operation in 1953, the patient H.M. lost both hippocampi.

Figure: The biological approach



- A labelled neuron: dendrites, cell body, axon with myelin sheath and nodes of Ranvier, axon terminals and the **synapse** with the next neuron
- Match each part of the diagram to the text.

Figure: The biological approach ·



heredity and environment interact: these studies estimate how much each explains, not which one wins

- Three boxes: identical twins share about 100% of **genes**, fraternal twins about 50%, and adopted children are compared with biological and adoptive parents
- Match each part of the diagram to the text.

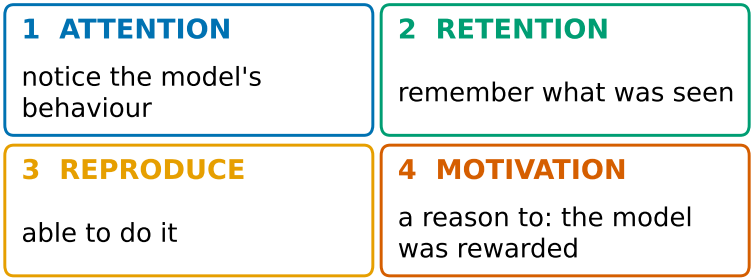
The cognitive approach

- The **cognitive approach** studies mental processes such as memory, thinking and **attention**.
- Because we cannot see these processes, cognitive psychologists build **models** : simple pictures of how a process might work.
- A good model makes **predictions** that an experiment can test.
- The **multi-store model** (Atkinson and Shiffrin, 1968) says memory has three stores in a line: sensory memory, short-term memory and long-term memory.

The sociocultural approach

- The **sociocultural approach** explains behaviour by the groups and **culture** around us.
- It assumes we learn how to behave from other people.
- **Social identity theory** (Tajfel and Turner) says part of our self-esteem comes from the groups we belong to.
- In Tajfel's "minimal group" study (1971), Bristol schoolboys were split into groups by a trivial task (which of two painters they preferred).

Figure: The sociocultural approach



the Bobo doll study: children copied the aggression they watched an adult model

- Bandura's four steps of observational learning
- Match each part of the diagram to the text.

How the approaches work together

- Good answers often use more than one approach.
- Depression, for example, has a biological side (**genes** and serotonin), a cognitive side (negative thinking) and a sociocultural side (poverty, loneliness and how a **culture** talks about mental illness).
- Caspi's study shows two of these working together.
- Topic 2 uses this idea in each context, and the concept of **perspective** asks you to say which approach a claim comes from and which approaches it leaves out.

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Sources for this lesson

- International Baccalaureate, *Psychology guide* (first assessment 2027) and subject brief.
- E. A. Maguire and others, "Navigation-related structural change in the hippocampi of taxi drivers", *PNAS* (2000).
- M. Kosfeld and others, "**Oxytocin** increases trust in humans", *Nature* (2005).

Sources for this lesson (2)

- E. F. Loftus and J. C. Palmer, "Reconstruction of automobile destruction", *Journal of Verbal Learning and Verbal Behavior* (1974).
- A. Tversky and D. Kahneman, "Judgment under uncertainty: **heuristics** and biases", *Science* (1974).
- S. E. Asch, "Effects of group pressure upon the modification and distortion of judgments" (1951); H. Tajfel, "Experiments in intergroup discrimination", *Scientific American* (1970).

Common errors

- Describing a study without saying what it shows about the behaviour in the question.
- Treating the three approaches as rivals; most behaviour has causes at all three levels, and the levels affect each other.
- Saying a brain scan "proves" a cause; fMRI shows where activity changes, and most scan studies are correlational.

Common errors (2)

- Saying **genes** "decide" a behaviour; **twin studies** and Caspi's work show genes acting together with the environment.
- Calling memory a recording; Bartlett and Loftus show that it is rebuilt each time we remember.
- Writing "Asch proved everyone conforms"; most answers were correct, and **conformity** varies with group size and culture.

Key terms

- **Neuroplasticity**: the brain's ability to change its structure and connections with experience.
- **Neurotransmitter**: a chemical that carries signals across the gap between nerve cells.
- **Schema**: a mental framework of knowledge that guides how we understand and remember.

Key terms (2)

- **Reconstructive memory**: the idea that memories are rebuilt each time we recall them, so they can change.
- **Social identity**: the part of a person's self-concept that comes from the groups they belong to.
- **Conformity**: changing behaviour or beliefs to match a group.
- **Acculturation**: the changes that happen when people from one **culture** live in contact with another.

Check yourself

- 1.
- Explain gaokao stress at the biological, the cognitive and the sociocultural level. 2.
- What did Maguire et al. (2000) find in London taxi drivers, and what does it show? 3.
- In Loftus and Palmer (1974), how did the verb in the question change speed estimates? 4.