8020 ENGLISH

IB Diploma Programme Psychology

Giáo trình luyện thi chuyên sâu

Song ngữ Anh–Việt

8020 ENGLISH

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Lời mở đầu · Foreword

Cuốn sách này thuộc bộ giáo trình luyện thi chương trình quốc tế của **8020 English (8020 Education)** — trung tâm luyện thi trọng điểm **IELTS · SAT · AP · IB · A-level · IGCSE** và săn học bổng du học. Toàn bộ nội dung được biên soạn bởi đội ngũ **Giáo sư · Tiến sĩ · Thạc sĩ** tốt nghiệp các trường top đầu thế giới, bám sát khung chương trình chính thức, trình bày đầy đủ lý thuyết, ví dụ mẫu, hình minh hoạ và hệ thống bài tập có lời giải chi tiết.

This book is part of the 8020 English international exam-prep series: complete English theory with Vietnamese explanations, worked examples, illustrations and fully-solved practice, aligned to the official framework.

Thành tích 8020 English

9.0 IELTS cao nhất	**1570** SAT cao nhất
5/5 AP — điểm tuyệt đối	**90/100** IB Diploma
100% GV $\geq$ 8.0 IELTS / 1500 SAT	**CMU** Tiến sĩ ĐH #1 Hoa Kỳ về CS

Đội ngũ tiêu biểu: Thầy Châu Cát Tường (Academic Head, ThS Western Sydney, top 1% IELTS 8.5) · TS Nguyễn Anh Huy (Carnegie Mellon, cựu kỹ sư Amazon) · TS Nguyễn Phước Trường (Toán, ĐH Klagenfurt) · cùng đội ngũ giảng viên SAT 1500–1600, IELTS 8.0–8.5.

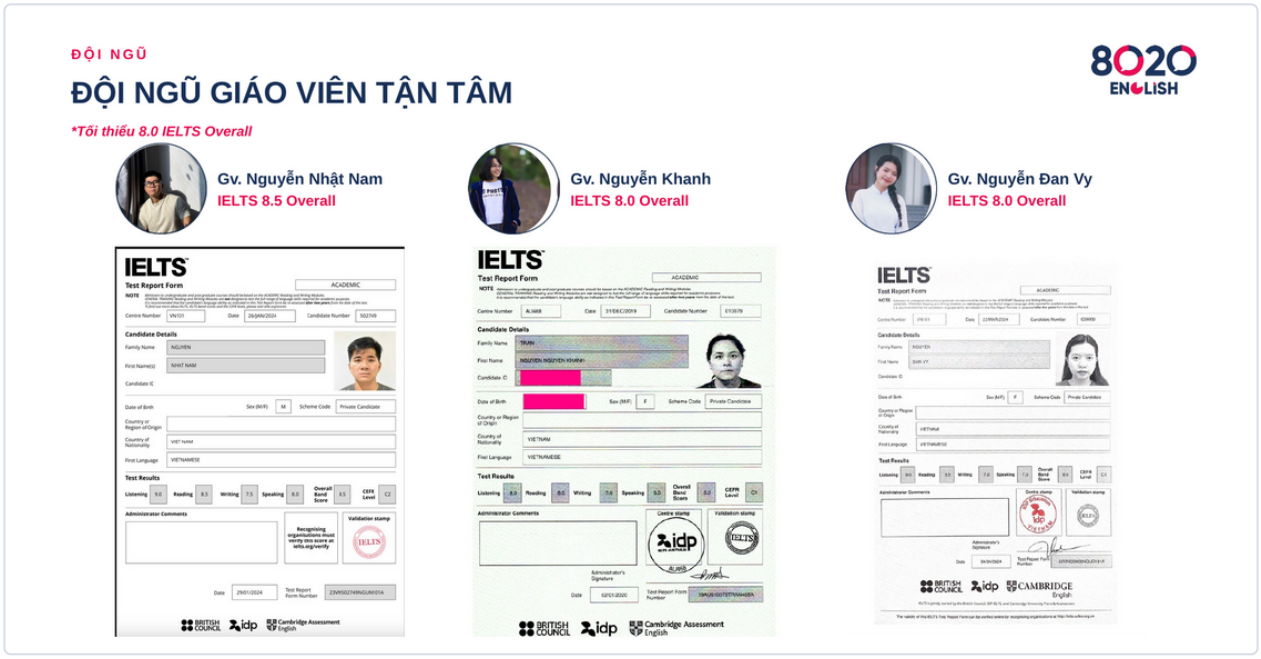
Kết quả học viên — điểm thi thật: IELTS 8.0–9.0 · SAT 1550 / 1570 / 1590 · AP 5/5 (Calculus BC, Microeconomics) · IB 90/100 (Economics) · Duolingo 110 · PTE 90 · TOEFL 120. **Bảng vàng SAT:** Khánh Đăng 1510 · Thảo Nguyên 1520 · Tâm Anh 1530.

"Cuối cùng đã đậu vào trường top như mong muốn." — Phan Thị Thanh Hằng, IELTS Overall 8.5.

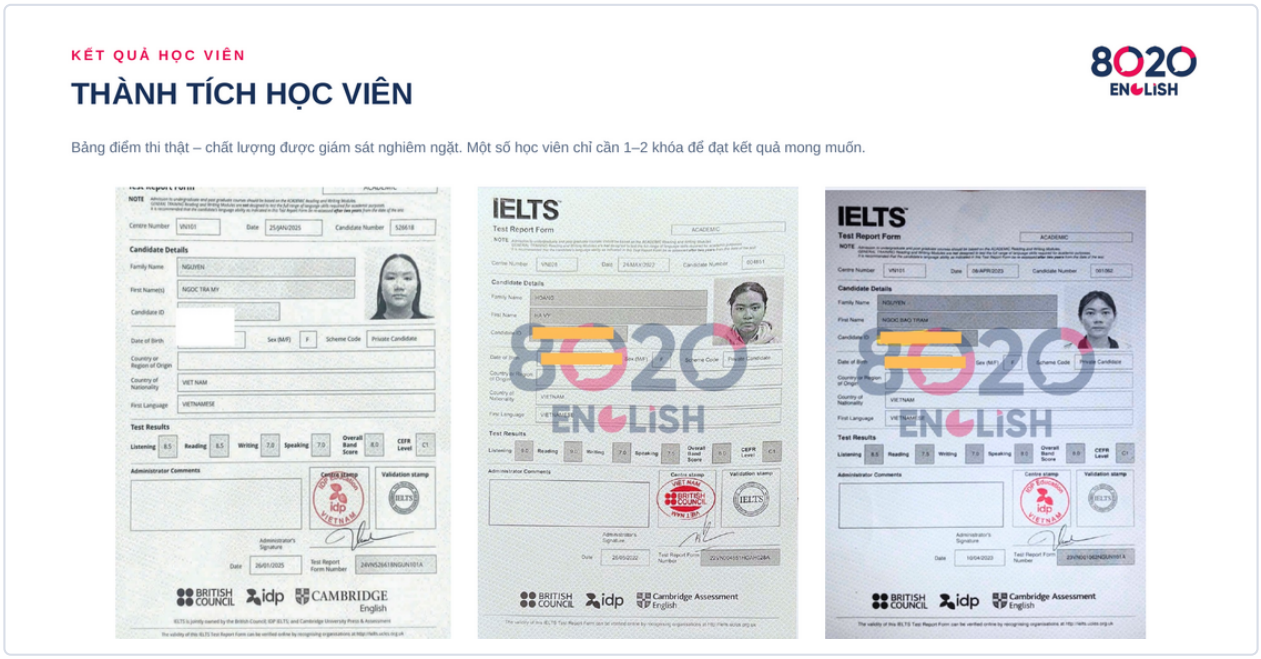
Cách dùng sách hiệu quả: mỗi Unit gồm (1) **Lý thuyết trọng tâm** tiếng Anh kèm **giải thích tiếng Việt**; (2) **Ví dụ mẫu** có lời giải; (3) **Hệ thống bài tập** kèm **lời giải chi tiết**. Hãy tự làm bài trước khi xem lời giải để đạt hiệu quả tối đa.

THÀNH TÍCH THỰC TẾ · 8020 ENGLISH

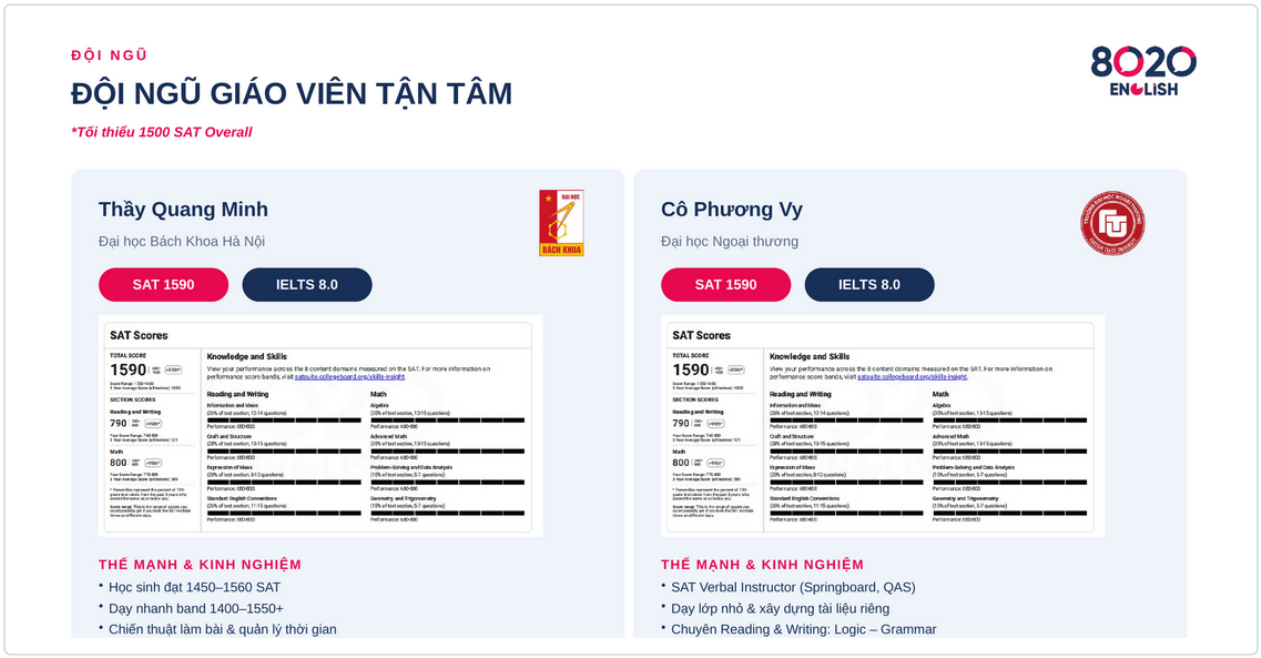
Điểm thi thật · Bằng & bảng điểm thật của giảng viên và học viên 8020 English — **Điểm thật · Thầy thật · Kết quả thật**



Giảng viên 8020 — IELTS 8.5 & 8.0 Overall (British Council · IDP · Cambridge)



Học viên 8020 — IELTS 8.0 Overall (bảng điểm thật)



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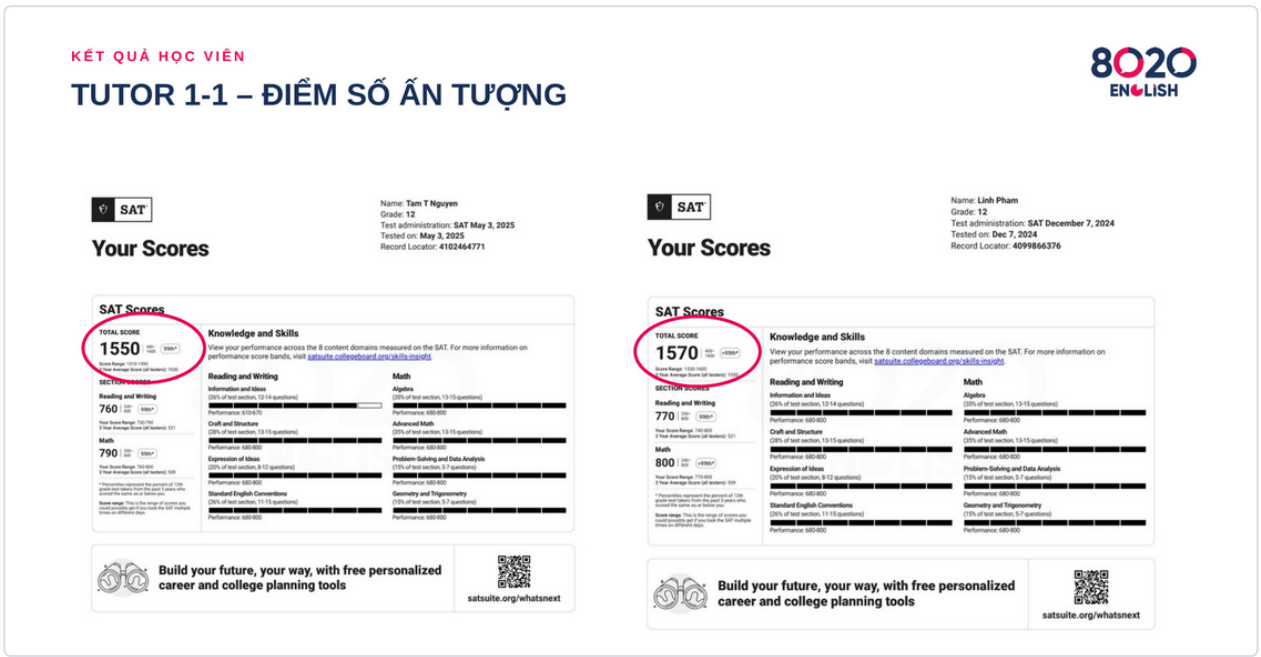
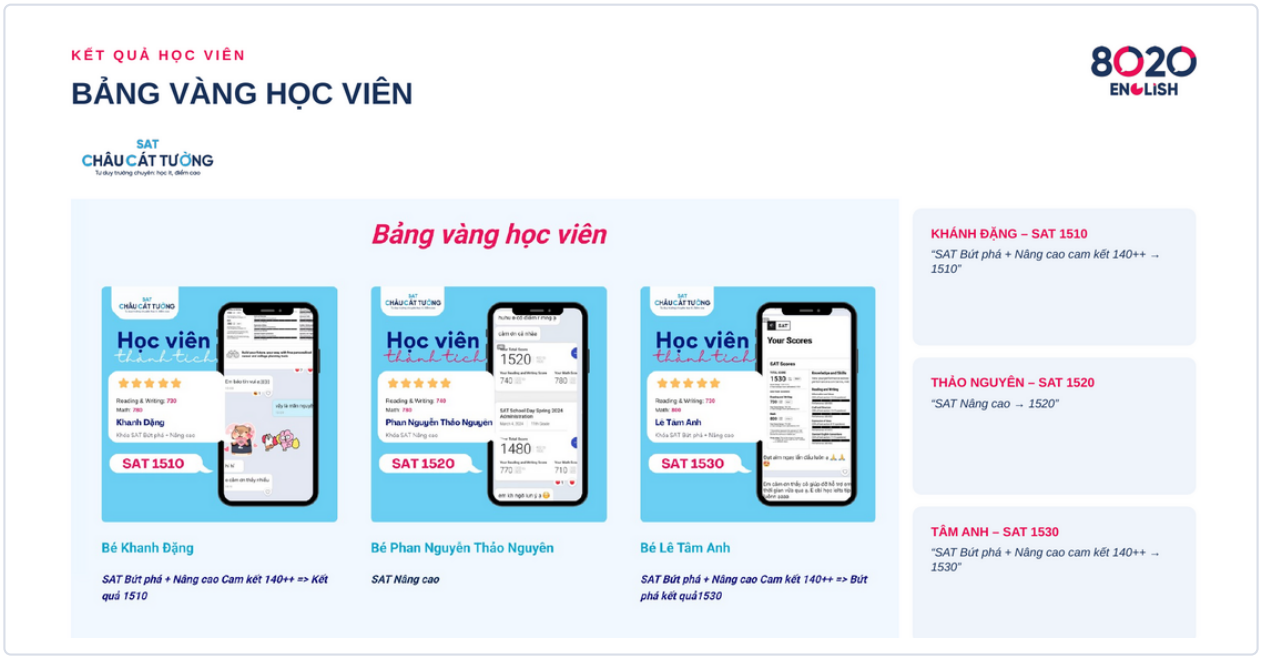
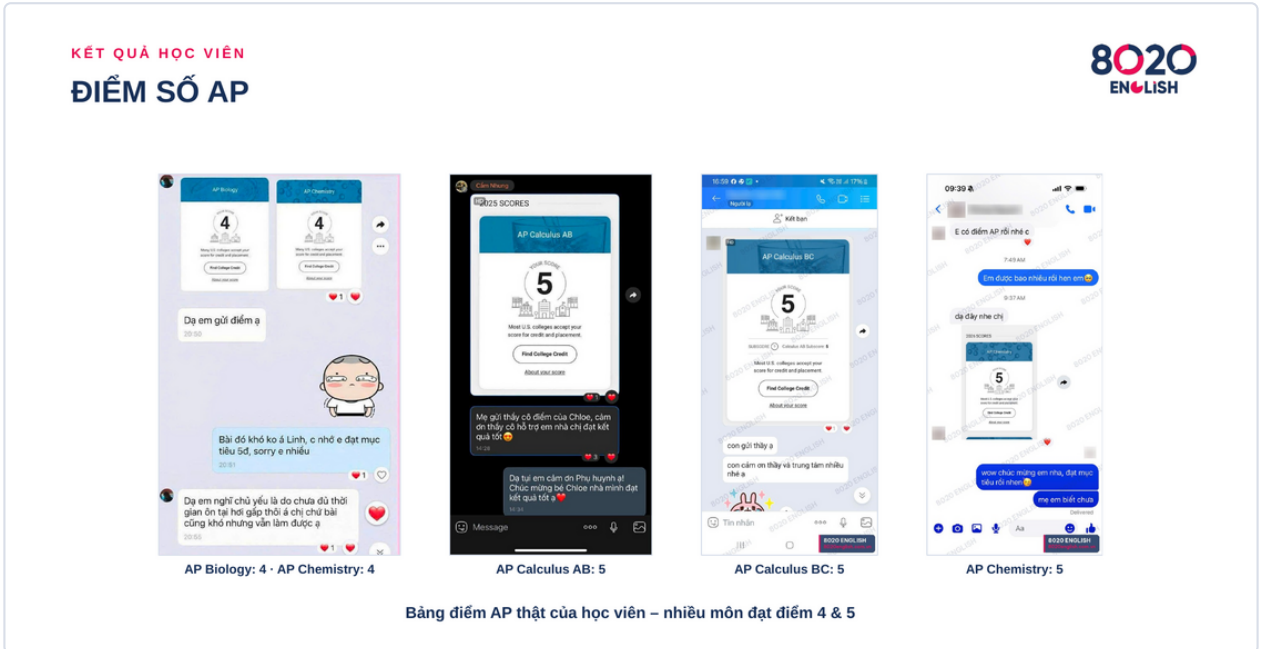


Học viên 8020 — SAT 1550 & 1570 (College Board)



Bảng vàng SAT — Học viên đạt 1510 · 1520 · 1530



Điểm AP thật — Calculus AB/BC 5/5 · Biology & Chemistry 4–5 (College Board)

Mục lục · Contents

Research Methodology and Ethics

Mục tiêu Unit: Quy trình nghiên cứu khoa học trong tâm lý học (giả thuyết, biến số, thao tác hoá khái niệm); phương pháp thực nghiệm (thí nghiệm phòng lab, hiện trường, tự nhiên/bán thực nghiệm) và các thiết kế thí nghiệm; nghiên cứu tương quan và case study; các phương pháp định tính; kỹ thuật chọn mẫu; độ tin cậy–độ giá trị; và các nguyên tắc đạo đức trong nghiên cứu tâm lý học.

1.1 The scientific inquiry process

1.1.1 Aims, hypotheses, and variables

Psychological research begins with a clearly stated **aim**: a general statement of what the researcher intends to investigate (e.g., "to investigate the effect of sleep deprivation on reaction time"). From the aim, the researcher derives a testable **hypothesis** – a precise, falsifiable prediction about the relationship between variables. A **directional (one-tailed) hypothesis** predicts the specific direction of an effect (e.g., "participants who are sleep-deprived will have *slower* reaction times than well-rested participants"), typically used when prior research strongly suggests a direction. A **non-directional (two-tailed) hypothesis** predicts only that a difference or relationship exists, without specifying direction (e.g., "there will be a difference in reaction time between sleep-deprived and well-rested participants"). Every hypothesis is tested against a **null hypothesis** (H_0), which states that any observed difference or relationship is due to chance alone; a study either finds enough evidence to reject H_0 (a "significant" result) or fails to reject it.

Khái niệm cốt lõi

An **independent variable (IV)** is the variable the researcher deliberately manipulates (or, in a quasi-experiment, the pre-existing variable used to form groups). A **dependent variable (DV)** is the variable that is measured to detect the effect of the IV. **Operationalization** is the process of defining variables in concrete, measurable terms – for example, "aggression" might be operationalized as "the number of times a confederate is verbally insulted in a 5-minute interaction," and "sleep deprivation" might be operationalized as "less than 4 hours of sleep in the previous 24 hours, self-reported." Precise operationalization is essential because it is what actually gets measured, replicated, and criticized.

VN **GIẢI THÍCH TIẾNG VIỆT**

Quy trình nghiên cứu bắt đầu từ một **mục tiêu (aim)** chung, sau đó cụ thể hoá thành **giả thuyết (hypothesis)** có thể kiểm chứng được. Giả thuyết **một chiều (directional)** dự đoán rõ hướng tác động; giả thuyết **hai chiều (non-directional)** chỉ dự đoán có sự khác biệt mà không nói rõ hướng. **Thao tác hoá (operationalization)** là bước biến một khái niệm trừu tượng (như "gây hấn," "thiếu ngủ") thành một định nghĩa cụ thể, đo lường được – đây là bước bắt buộc để nghiên cứu có thể lặp lại (replicate) và bị phản biện một cách công bằng.

(!) Lỗi thường gặp: A common error is stating a hypothesis using vague, unoperationalized terms (e.g., "screen time affects wellbeing"). An IB-level hypothesis must name the specific IV

and DV in measurable form (e.g., ”hours of smartphone use per day” and ”score on a validated wellbeing questionnaire”), otherwise the study cannot be meaningfully designed, replicated, or falsified.

1.2 Experimental research methods

An **experiment** manipulates an independent variable to measure its effect on a dependent variable, while controlling **extraneous variables** (any variable other than the IV that could affect the DV) so that a causal claim can be made. **Confounding variables** are extraneous variables that vary systematically *with* the IV, making causal conclusions unsafe – for example, if all participants in a ”sleep-deprived” group happen to be tested later in the evening than the ”well-rested” group, time of day is confounded with sleep condition.

Khái niệm cốt lõi

Lab experiments take place in a controlled environment with high control over extraneous variables (strong internal validity) but may lack **ecological validity** (how well findings generalize to real-life settings) and are vulnerable to **demand characteristics** (cues that let participants guess the study’s purpose and change their behaviour accordingly). **Field experiments** manipulate the IV in a natural setting, trading some control for higher ecological validity, and participants are often unaware they are being studied (reducing demand characteristics), which raises separate ethical questions about consent. **Quasi-experiments** use a pre-existing IV (e.g., gender, diagnosis, personality trait) that cannot be randomly assigned, so causal claims are weaker because the groups may differ systematically in ways other than the IV. **Natural experiments** exploit a naturally occurring change in the IV (e.g., a new policy, a natural disaster, the introduction of a technology) that the researcher does not control or manipulate at all, and cannot ethically or practically create.

Ví dụ mẫu · Worked example

A classic quasi/natural experiment: **Charlton et al. (2000)** studied children on the remote island of St Helena before and after television was introduced for the first time, measuring aggressive behaviour on the playground using structured observation. Because the researchers could not manipulate or randomly assign exposure to television, this is a **natural experiment** with a naturally occurring IV (pre- vs post-television). They found no significant increase in aggression after television was introduced – a finding often used to question simple ”media causes aggression” claims and to illustrate that a strong pre-existing social structure (small, close-knit community with high adult supervision) may moderate media effects.

VN **GIẢI THÍCH TIẾNG VIỆT**

Biến độc lập (IV) là biến được nhà nghiên cứu **chủ động thay đổi**; **biến phụ thuộc (DV)** là biến được **đo lường**. Chỉ thí nghiệm thật (có phân nhóm ngẫu nhiên) mới cho phép kết luận **nhân–quả**. Thí nghiệm bán thực nghiệm (quasi-experiment) dùng một IV đã tồn tại sẵn (ví dụ giới tính) nên **không** có phân nhóm ngẫu nhiên thật sự ⇒ kết luận nhân quả yếu hơn. Thí nghiệm tự nhiên (natural experiment) khai thác một sự kiện có sẵn ngoài đời (như việc Charlton và cộng sự (2000) tận dụng việc đảo St Helena lần đầu có truyền hình) mà nhà nghiên cứu hoàn toàn không kiểm soát được.

1.2.1 Experimental designs

Once a study has a lab or field experimental design, researchers must decide how participants are allocated to conditions.

Independent samples (between-subjects) design: different participants are randomly allocated to each condition. Strength: no order effects, since each person only experiences one condition. Limitation: individual differences between groups (e.g., one group happening to have more naturally anxious people) are not controlled, requiring larger samples and random allocation to balance out. **Repeated measures (within-subjects) design**: the same participants take part in every condition. Strength: participant variables are controlled because each person acts as their own control. Limitation: vulnerable to **order effects** – practice effects (improving with repetition) or fatigue/boredom effects (declining with repetition) – usually addressed with **counterbalancing** (e.g., an ABBA design, or splitting participants so half do condition A first and half do condition B first). **Matched pairs design**: different participants are used in each condition, but they are paired on key variables likely to affect the DV (e.g., IQ, age) before being split so that one member of each pair is in each condition. Strength: partially controls participant variables without order effects. Limitation: time-consuming, and it is impossible to match on every relevant variable.

Design	Key strength	Key limitation
Independent samples	No order effects	Participant variables uncontrolled; needs larger n
Repeated measures	Controls participant variables	Order effects (practice/fatigue); needs counterbalancing
Matched pairs	Reduces participant variables without order effects	Time-consuming; imperfect matching

The three experimental designs compared. Choice of design is itself a methodological decision examiners expect you to justify.

Ví dụ mẫu · Worked example

A researcher wants to test whether caffeine improves memory recall using a word-list task. Using a **repeated measures** design, every participant completes the task twice: once after caffeine, once after a placebo. Explain one order effect that could threaten the internal validity of this design, and how counterbalancing would address it.

Order effect: If every participant always receives caffeine first and the placebo second, any improvement in the second attempt could be due to a **practice effect** (increased familiarity with the word list or task format) rather than the placebo being genuinely worse than caffeine – confounding the order of conditions with the IV itself. **Counterbalancing solution:** using an ABBA design or randomly splitting the sample so half the participants receive caffeine-then-placebo and the other half receive placebo-then-caffeine cancels out the practice effect across the whole sample, because it is equally likely to help either condition.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ba thiết kế thí nghiệm chính: **independent samples** (mỗi nhóm là người khác nhau – không có hiệu ứng thứ tự nhưng khác biệt cá nhân giữa các nhóm không được kiểm soát); **repeated measures** (cùng một nhóm người tham gia tất cả điều kiện – kiểm soát tốt khác biệt cá nhân nhưng dễ gặp **hiệu ứng thứ tự** do luyện tập hoặc mệt mỏi, cần **cân bằng thứ tự (counterbalancing)** để khắc phục); **matched pairs** (ghép cặp người tham gia theo đặc điểm liên quan trước khi chia nhóm – dung hoà giữa hai thiết kế trên nhưng tốn thời gian và không thể ghép cặp

hoàn hảo mọi biến số).

1.3 Correlational studies and case studies

A **correlational study** measures the relationship between two co-occurring variables (expressed as a correlation coefficient r, ranging from -1 to $+1$) *without* manipulating either variable. A **positive correlation** means both variables increase together; a **negative correlation** means one increases as the other decreases; a coefficient near 0 indicates no linear relationship. Correlational studies can *never*, by themselves, establish causation, because a **third (confounding) variable** may explain the association, or the direction of causality may run either way (the **directionality problem**).

A **case study** is an in-depth, detailed investigation of a single individual, small group, or event, typically combining multiple methods (interviews, observation, psychometric testing, sometimes brain scans, and archival/historical records). Strengths: rich, holistic, idiographic detail; can study rare phenomena that would be unethical or impossible to create experimentally (e.g., brain lesions, feral children, extreme deprivation). Limitations: findings from one case cannot be safely generalized to a wider population; heavy reliance on retrospective/subjective data (especially in historical case studies); high risk of researcher bias in interpreting a small, richly detailed dataset.

Ví dụ mẫu · Worked example

Curtiss (1977) reported the case study of "Genie," a girl discovered at age 13 after having been kept in near-total physical isolation and social/linguistic deprivation from infancy. Genie had never acquired language before her discovery. Following her rescue, researchers documented her subsequent progress: she acquired a substantial vocabulary but never developed normal grammatical competence (e.g., correct word order, verb tenses), a pattern often cited as evidence for a **critical/sensitive period** for first-language acquisition. Because Genie's case involved a single, uniquely traumatized individual studied under non-standardized, evolving circumstances (and researchers disagreed sharply about her care and testing), the case also illustrates the limits of case studies: findings cannot be cleanly generalized to how language develops in typical children, and it is impossible to isolate the effects of linguistic deprivation from the profound emotional and social deprivation Genie also experienced.

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu tương quan chỉ cho biết hai biến **có liên hệ** với nhau, KHÔNG cho biết biến nào gây ra biến nào (vấn đề chiều hướng – directionality) và không loại trừ được **biến thứ ba (third variable)**. Case study của Genie (Curtiss, 1977) cho dữ liệu **sâu** về một cá nhân bị tước đoạt ngôn ngữ cực độ, ủng hộ giả thuyết **giai đoạn nhạy cảm (critical/sensitive period)** của việc học ngôn ngữ, nhưng vì chỉ có một trường hợp duy nhất với hoàn cảnh cực kỳ đặc thù (vừa thiếu ngôn ngữ vừa thiếu tình cảm/xã hội), kết quả rất khó **khái quát hoá (generalize)** cho toàn bộ trẻ em.

(!) Lỗi thường gặp: Do not describe a correlational study as "proving there is no causal relationship." A weak or zero correlation only tells you the two variables measured are not *linearly* related in this sample; it says nothing about whether one variable could still cause the other under different conditions, nor does it rule out a non-linear relationship.

1.4 Qualitative research methods

Khái niệm cốt lõi

Qualitative methods collect non-numerical data to explore meaning, experience, and context in depth. Common techniques: **semi-structured interviews** (a flexible list of open questions, allowing follow-up probes), **unstructured interviews** (minimal predetermined structure, participant-led), **focus groups** (guided group discussion, useful for observing shared or contested meanings among members of a community), and **participant observation** (the researcher joins the group being studied, either **overtly** – the group knows they are being studied – or **covertly** – the group does not know, raising serious ethical questions about consent). Data are typically analysed using **thematic analysis** (identifying recurring patterns/themes across the dataset) or **content analysis** (systematically categorising, and sometimes quantifying, the content of text, speech, or media).

Ví dụ mẫu · Worked example

Festinger, Riecken, and Schachter (1956) used **covert participant observation** to study a small doomsday cult ("the Seekers") whose leader prophesied the world would end on a specific date and that believers would be rescued by a UFO. Researchers infiltrated the group, posing as genuine believers, to observe how members would react when the prophecy inevitably failed. When the predicted date passed without incident, most core members – rather than abandoning their belief – reported feeling even *more* convinced, reinterpreting the failure (e.g., "our faith saved the world from destruction") and increasing their efforts to recruit new members. This became the foundational case study for **cognitive dissonance theory**: when a deeply-held belief is disconfirmed after a person has made public commitments and sacrifices for it, the resulting psychological discomfort is often resolved by *rationalizing* the disconfirming evidence rather than abandoning the belief. Ethically, the study is a landmark case of covert observation: participants never consented to being studied, could not exercise a right to withdraw from research they did not know was happening, and were deceived throughout – illustrating the deep ethical tension between rich, naturalistic qualitative data and respect for participants' autonomy.

Because qualitative data are not about statistical generalization, researchers judge rigor using criteria proposed by **Lincoln and Guba (1985)**: **credibility** (do the findings accurately reflect participants' meanings? improved via triangulation and member checking, i.e., showing participants the researcher's interpretation to confirm it resonates), **transferability** (can the findings be applied to other similar contexts? aided by **thick description**, i.e., very detailed contextual reporting that lets readers judge similarity to their own context), **dependability** (consistency of the research process over time, aided by keeping a detailed audit trail of methodological decisions), and **confirmability** (findings are shaped by participants, not researcher bias – aided by **reflexivity**, i.e., researchers explicitly reflecting on how their own assumptions, background, and relationship to participants may shape data collection and interpretation).

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu định tính không đặt mục tiêu "khái quát hoá thống kê" mà đặt mục tiêu hiểu **ý nghĩa và trải nghiệm** một cách sâu sắc. Bốn tiêu chuẩn chất lượng theo Lincoln and Guba (1985): **credibility** (độ tin cậy về ý nghĩa), **transferability** (khả năng áp dụng sang bối cảnh tương tự), **dependability** (tính nhất quán của quy trình), **confirmability** (kết quả phản ánh dữ liệu của người tham gia chứ không phải định kiến của nhà nghiên cứu). Nghiên cứu của Festinger,

Riecken and Schachter (1956) về giáo phái "Seekers" minh hoạ rõ sức mạnh của quan sát tham dự **bí mật (covert)** trong việc thu thập dữ liệu tự nhiên, nhưng cũng cho thấy rủi ro đạo đức nghiêm trọng khi người tham gia hoàn toàn không biết mình đang bị nghiên cứu.

1.5 Sampling techniques

Random sampling	Every member of the target population has an equal chance of selection; best for generalizability but often impractical.
Opportunity/convenience sampling	Whoever is available and willing (e.g., students on campus); quick but prone to bias.
Volunteer/self-selected sampling	Participants respond to a recruitment call; risk of a "volunteer bias" (more motivated/curious/compliant people opt in).
Purposive sampling	Participants are deliberately selected because they have relevant characteristics/experience for a (usually qualitative) research question.
Snowball sampling	Existing participants recruit further participants from their networks; useful for hard-to-reach or stigmatized populations.

VN **GIẢI THÍCH TIẾNG VIỆT**

Random sampling (chọn mẫu ngẫu nhiên: ai trong dân số cũng có cơ hội được chọn như nhau) khác với **random allocation/assignment** (phân nhóm ngẫu nhiên: người tham gia đã có sẵn được chia ngẫu nhiên vào các nhóm thí nghiệm). Đây là cặp khái niệm cực kỳ hay bị nhầm trong đề thi IB – một nghiên cứu hoàn toàn có thể có **random allocation** (đảm bảo nội bộ thí nghiệm công bằng) nhưng KHÔNG có **random sampling** (nên vẫn khó khái quát hoá ra dân số chung).

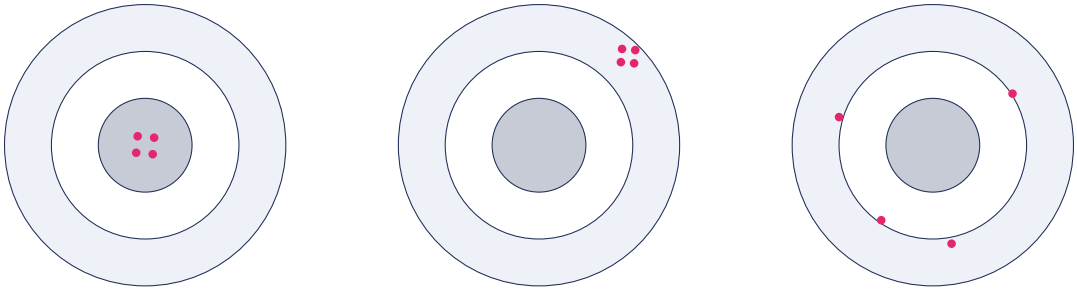
(!) Lỗi thường gặp: "Sample size was large, so the study must be generalizable" is a common but flawed exam answer. **Population validity** (generalizability) depends primarily on *how representative* the sample is of the target population (i.e., the sampling technique used), not simply on how many participants were tested. A large opportunity sample of psychology undergraduates is still a narrow, unrepresentative slice of "humans in general."

1.6 Reliability and validity

Khái niệm cốt lõi

Reliability concerns consistency: would the same result be obtained again (**test–retest reliability**: the same test given to the same people at two different times should correlate highly), by another rater (**inter-rater reliability**: two independent observers/coders should agree closely, often quantified with a correlation or percentage agreement), or across items on the same measure (**internal consistency**: different items intended to measure the same construct should correlate with one another)? **Validity** concerns accuracy: does the study actually measure or manipulate what it claims to? **Internal validity** asks whether the IV (and only the IV) caused the observed change in the DV, i.e., whether extraneous/confounding variables were adequately controlled. **Ecological validity** asks whether findings generalize to real-world settings

and tasks. **Population validity** asks whether findings generalize to people beyond the specific sample tested. **Construct validity** asks whether an abstract concept (e.g., "stress," "intelligence," "aggression") is being operationalized in a way that genuinely captures that concept.



High reliability
High validity

High reliability
Low validity

Low reliability
Low validity

The classic "target" analogy: reliability is how tightly clustered repeated measurements are (consistency); validity is how close they are to the true bullseye (accuracy). A measure can be highly *reliable* yet consistently miss the true construct (middle panel) – reliability is necessary but not sufficient for validity.

Ví dụ mẫu · Worked example

Milgram (1963) recruited 40 male volunteers for a supposed "learning and memory" study. An authority figure (the experimenter, in a lab coat) instructed each participant to deliver increasingly severe electric shocks (in reality fake) to a confederate "learner" whenever an answer was wrong. Despite the confederate's scripted protests and eventual silence, **65% (26 of 40)** of participants obeyed instructions all the way to the maximum, clearly dangerous 450-volt switch. Evaluate the study's internal and ecological validity. **Internal validity** was relatively strong: the highly controlled lab environment, standardized experimenter script, and standardized confederate responses ensured that variation in obedience was plausibly attributable to the situational manipulation (the presence and verbal prods of an authority figure) rather than to uncontrolled extraneous variables. **Ecological validity** is more debated: critics (e.g., Orne and Holland, 1968) argued participants may have partly disbelieved the shocks were real (reducing the realism of the "psychological situation"), which would undermine generalizing the 65% figure to real-world obedience; however, Milgram countered that participants' visible distress (sweating, trembling, nervous laughter) suggested genuine belief, and numerous cross-cultural and gender-varied replications have found broadly similar obedience rates, supporting generalizability of the underlying phenomenon even if the exact percentage varies by context.

VN **GIẢI THÍCH TIẾNG VIỆT**

Độ tin cậy (reliability) là tính **nhất quán** (đo lặp lại có ra cùng kết quả không); **độ giá trị (validity)** là tính **chính xác** (có thật sự đo đúng cái cần đo không). Một công cụ có thể rất **nhất quán** (reliable) nhưng vẫn **sai lệch có hệ thống** (không valid) – giống như một chiếc cân luôn báo thừa đúng 2kg mỗi lần cân: rất nhất quán nhưng không chính xác. Nghiên cứu Milgram (1963) có **độ giá trị nội tại (internal validity)** khá tốt nhờ kiểm soát chặt chẽ, nhưng **độ giá trị sinh thái (ecological validity)** bị tranh cãi vì bối cảnh phòng thí nghiệm khác xa tình huống tuân lệnh ngoài đời thực.

1.7 Ethical considerations in psychological research

Khái niệm cốt lõi

Modern psychological research is governed by ethical codes (e.g., APA, BPS) enforced by institutional **ethics review boards**, which must approve a study's design *before* data collection begins. Core principles include: **informed consent** (participants must be told enough about the study to decide whether to participate, and must voluntarily agree); **the right to withdraw** (participants may leave the study, and withdraw their data, at any point without penalty); **protection from harm** (both physical and psychological harm must be minimized, and anticipated risks must be justified by the study's scientific/social value); **confidentiality and anonymity** (participants' data and identity must be protected); and, where **deception** is used (misleading participants about the study's true purpose or procedures), it must be justified by the fact that the research could not otherwise be conducted, and must be followed by a full **debriefing** that reveals the true purpose, addresses any distress, and allows the participant to withdraw their data even after the fact.

Ví dụ mẫu · Worked example

Middlemist, Knowles, and Matter (1976) conducted a field experiment on personal space in a men's public restroom, covertly observing (via a hidden periscope-like device) how close another (confederate) man standing at a urinal affected the time it took a genuine, unaware participant to begin and finish urinating (using urination-onset delay and duration as physiological proxies for anxiety/arousal). They found participants took significantly longer to start urinating, and finished more quickly, when a confederate stood in an adjacent urinal (close interpersonal distance) than when the confederate was farther away or absent – interpreted as evidence that invaded personal space causes physiological arousal that interferes with relaxed urination. The study is now a classic ethics teaching case: participants were completely unaware they were being observed (violating informed consent and the right to withdraw from something they did not know was happening), and being covertly watched in a restroom is arguably itself a serious invasion of privacy and a source of harm regardless of debriefing – illustrating that even non-invasive, single-variable field observations can raise very serious ethical problems that a modern ethics board would almost certainly reject.

VN **GIẢI THÍCH TIẾNG VIỆT**

Các nguyên tắc đạo đức chính: **sự đồng ý có hiểu biết (informed consent)**, **quyền rút lui bất cứ lúc nào (right to withdraw)**, **bảo vệ khỏi tổn hại (protection from harm)**, **bảo mật (confidentiality/anonymity)**, và nếu có **lừa dối (deception)** thì phải có lý do chính đáng và bắt buộc phải có **giải trình sau nghiên cứu (debriefing)** đầy đủ. Nghiên cứu của Milgram (1963) vi phạm nhiều nguyên tắc này (lừa dối, quyền rút lui bị cản trở, nguy cơ tổn hại tâm lý), dù đã có debriefing sau đó. Nghiên cứu của Middlemist, Knowles and Matter (1976) trong nhà vệ sinh công cộng còn nghiêm trọng hơn vì người tham gia hoàn toàn **không biết** mình đang bị quan sát – vi phạm quyền riêng tư một cách trực tiếp mà không có cách nào "sửa chữa" bằng debriefing sau đó.

(!) Lỗi thường gặp: Getting approval from an ethics committee *before* a study does not automatically make the study ethical, nor does debriefing *after* a harmful procedure undo psychological harm experienced during it. Ethical evaluation is about weighing the actual costs to participants against the scientific/social benefit – always discuss both sides for extended-response questions, and never simply assert "it was approved so it was ethical."

1.8 Triangulation and evaluating the credibility of research

Triangulation is the use of multiple methods, data sources, investigators, or theoretical perspectives to study the same research question, so that the strengths of one method compensate for the weaknesses of another and convergent findings increase confidence in the conclusion. Common types include **methodological triangulation** (combining quantitative and qualitative methods, e.g., a lab experiment plus follow-up interviews), **data triangulation** (using data from different times, places, or people), and **investigator triangulation** (multiple researchers independently analysing the same data to check for consistent interpretation). A study that combines an experiment (showing *that* an effect occurs, with strong internal validity) with semi-structured interviews (showing *why* or *how* participants experience that effect, with rich contextual detail) is a common and powerful example of mixed-methods triangulation in psychology.

VN GIẢI THÍCH TIẾNG VIỆT

Tam giác hoá (triangulation) là việc sử dụng nhiều phương pháp/nguồn dữ liệu/nhà nghiên cứu khác nhau để trả lời cùng một câu hỏi nghiên cứu, giúp bù đắp điểm yếu của từng phương pháp riêng lẻ. Ví dụ: kết hợp một thí nghiệm định lượng (cho biết **hiệu ứng có tồn tại hay không**) với phỏng vấn định tính (cho biết **tại sao/như thế nào** người tham gia trải nghiệm hiệu ứng đó) là một cách "tam giác hoá phương pháp" rất phổ biến và mạnh trong tâm lý học.

1.9 Meta-analysis and the replication crisis

Khái niệm cốt lõi

A **meta-analysis** statistically combines the results of many separate studies addressing the same research question to estimate an overall **effect size** – a standardized measure of how large and consistent an effect is across the combined evidence, weighted so that larger, more precise studies contribute more. Because a meta-analysis pools data across many independent samples, it can detect real but small effects that any single modest-sized study might miss, and it can reveal how consistent an effect is across different populations, settings, or decades (as in Bond and Smith's 1996 meta-analysis of 133 conformity studies, discussed in the Sociocultural Approach unit). A meta-analysis is, however, only as good as the studies that go into it: if the underlying studies share the same design flaw or if only "successful" (statistically significant) studies were ever published, the meta-analysis will inherit and even amplify that bias.

Ví dụ mẫu · Worked example

The **Open Science Collaboration (2015)**, a large international team of over 270 researchers, attempted to directly replicate 100 studies originally published in three high-profile psychology journals. While 97% of the original studies had reported a statistically significant effect, only about **36%** of the replication attempts found a statistically significant effect in the same direction, and even successful replications typically found an effect roughly half the size originally reported. This landmark project exposed what is now called the **replication crisis** in psychology, and pointed to several contributing causes: **publication bias** (journals historically favoured publishing novel, statistically significant "positive" results over null results, creating a distorted, overly optimistic published literature – sometimes called the "file drawer problem," since null results are disproportionately left unpublished in a researcher's file drawer); and **p-hacking** (researchers, even unintentionally, running many different analyses or stopping data collection at a convenient point until a result crosses the conventional significance

threshold of $p < 0.05$, inflating the rate of false positives). In response, the field has increasingly adopted **pre-registration** (publicly registering a study's hypotheses and planned analysis *before* collecting data, preventing after-the-fact changes to what counts as "the" result) and greater incentives to publish direct replications and null results.

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Meta-phân tích (meta-analysis) gộp kết quả của nhiều nghiên cứu độc lập để ước tính một **độ lớn hiệu ứng (effect size)** tổng thể đáng tin cậy hơn bất kỳ nghiên cứu đơn lẻ nào. Dự án **Open Science Collaboration (2015)** lặp lại 100 nghiên cứu tâm lý học nổi tiếng và chỉ tái tạo thành công khoảng **36%** kết quả có ý nghĩa thống kê ban đầu (dù 97% nghiên cứu gốc báo cáo có ý nghĩa thống kê) – phát hiện gây chấn động này gọi là **khủng hoảng tái lặp (replication crisis)**, một phần do **thiên lệch công bố (publication bias)** (tạp chí ưu tiên đăng kết quả "mới lạ, có ý nghĩa") và **p-hacking** (thử nhiều cách phân tích khác nhau cho đến khi ra kết quả "có ý nghĩa"). Giải pháp then chốt là **đăng ký trước (pre-registration)**: công bố giả thuyết và kế hoạch phân tích *trước khi* thu thập dữ liệu.

(!) Lỗi thường gặp: "A study was published in a top journal, so its finding must be true and will always replicate" is exactly the assumption the replication crisis overturned. Publication in a prestigious journal reflects that reviewers found the original methodology and statistics acceptable at the time – it is not, by itself, evidence that an independent research team will observe the same effect when they repeat the study.

1.10 Sample bias: the WEIRD problem

Khái niệm cốt lõi

Henrich, Heine, and Norenzayan (2010), in an influential review titled "The weirdest people in the world?", showed that the overwhelming majority of participants in published psychology studies come from societies that are **WEIRD** – **W**estern, **E**ducated, **I**ndustrialized, **R**ich, and **D**emocratic – and, within those societies, are disproportionately university undergraduates recruited via opportunity sampling. Reviewing evidence across domains including visual perception, fairness judgments, cooperation, self-concept, and moral reasoning, they found that WEIRD samples are frequently **outliers** rather than representative of humanity: for example, susceptibility to certain visual illusions (such as the Müller-Lyer illusion) varies dramatically across cultures, and the strength of fairness/cooperation norms in economic games (e.g., the ultimatum game) differs substantially between small-scale societies and industrialized nations. This raises a serious challenge to **population validity**: a great deal of "universal" psychological theory has in fact been built almost exclusively on data from one unusual, non-representative slice of the world's population.

Ví dụ mẫu · Worked example

Suppose a foundational theory of moral reasoning was developed and validated using exclusively American university students recruited via opportunity sampling on campus. According to Henrich, Heine, and Norenzayan's (2010) argument, what specific limitation does this sampling pattern create, and how could a researcher address it?

Limitation: The sample is not just small but systematically **unrepresentative** along several di-

mensions simultaneously (culture, education level, economic system, age, and typically also socioeconomic status) – so even a very large number of such participants would not necessarily generalize to humans broadly; the theory risks describing "how WEIRD undergraduates reason" rather than "how humans reason." **Solution:** deliberately sampling participants from a range of cultural contexts – including non-Western, non-industrialized, and non-university populations – and explicitly testing whether the theorized pattern replicates across this broader, more diverse set of samples (cross-cultural replication), rather than assuming a single-population finding is automatically universal.

VN **GIẢI THÍCH TIẾNG VIỆT**

Henrich, Heine and Norenzayan (2010) chỉ ra rằng phần lớn nghiên cứu tâm lý học đã công bố chỉ dùng mẫu người tham gia đến từ các xã hội **WEIRD** (phương Tây, có học vấn, công nghiệp hoá, giàu có, dân chủ) – thường chỉ là sinh viên đại học được chọn mẫu thuận tiện. Họ chứng minh mẫu WEIRD thường là **ngoại lệ (outlier)** chứ không đại diện cho loài người nói chung (ví dụ độ nhạy với một số ảo ảnh thị giác hay chuẩn mực công bằng trong trò chơi kinh tế khác nhau rất nhiều giữa các nền văn hoá) – một thách thức nghiêm trọng với **độ giá trị khái quát (population validity)** của nhiều lý thuyết tâm lý học "phổ quát."

(!) Lỗi thường gặp: Do not conclude from the WEIRD critique that psychology findings from Western samples are simply "wrong." The point is narrower and more precise: such findings may not *generalize* as broadly as originally assumed, and claims of psychological universality require actual cross-cultural testing rather than being taken for granted.

1.11 Observation methods: naturalistic, controlled, and inter-observer reliability

Khái niệm cốt lõi

Naturalistic observation involves observing and recording behaviour in its natural setting without the researcher manipulating any variable – this distinguishes it from a **field experiment**, which does manipulate an IV in a natural setting. Naturalistic observation offers high **ecological validity** (behaviour is genuinely spontaneous, in a real-world context) but low control over extraneous variables, and is vulnerable to **observer bias**: the observer's prior expectations or hypotheses can unconsciously shape what behaviour is noticed, categorized, or recorded as significant. Observer bias is mitigated by developing a clear, pre-defined **coding scheme** – a set of **operationalized** behavioural categories decided *before* data collection (e.g., "exploratory behaviour" operationalized as "moving more than one metre from the caregiver to interact with a toy") – and by using two or more **independent observers** who code the same behaviour separately, so that **inter-observer reliability** (the degree of agreement between raters, often reported as a correlation or percentage agreement) can be calculated. **Controlled (structured) observation** takes place in a standardized setting following a structured procedure designed in advance by the researcher, sacrificing some of the spontaneity and ecological validity of naturalistic observation in exchange for greater control over the situation participants are observed in and, typically, higher inter-observer reliability. Researchers must also decide *when* to record behaviour: **time sampling** notes whether a target behaviour is occurring at fixed, predetermined intervals (e.g., every 30 seconds), which is efficient and produces data well-suited to comparing frequencies across participants, but can miss brief behaviours that happen to fall between sampling points; **event sampling** instead records every instance of a specific, predefined behaviour whenever it occurs (e.g., every time a child initiates physical contact with a

peer), capturing rare but important behaviours more completely, though it becomes harder for an observer to apply consistently when several different behaviours must be tracked at once.

Ví dụ mẫu · Worked example

Ainsworth and Bell (1970) developed the **Strange Situation**, a landmark controlled observation used to assess infant–caregiver attachment. Infants aged approximately 12–18 months and their caregiver were brought into an unfamiliar laboratory playroom, where a standardized sequence of brief episodes was carried out: the caregiver and infant were introduced to the room, a stranger entered and interacted with the infant, the caregiver briefly left the infant alone with the stranger, and then the caregiver returned. Throughout, trained observers – working from predefined, operationalized behavioural categories (e.g., amount of independent exploration and toy play, intensity of distress at separation, and the specific quality of the infant's behaviour on reunion, such as seeking and accepting comfort versus resisting or ignoring the caregiver) – coded the infants' behaviour from behind a one-way mirror or on video. Because the setting, sequence of episodes, and coding categories were all tightly standardized in advance, independent observers could apply the same criteria consistently, yielding good **inter-observer reliability** and allowing Ainsworth to classify infants into attachment categories (secure, insecure-avoidant, and insecure-resistant/ambivalent) with confidence that different raters watching the same tape would arrive at similar classifications. This illustrates the central trade-off of controlled observation: compared to watching infants and caregivers interact freely in their own home (a naturalistic observation), the Strange Situation sacrifices some ecological validity – an unfamiliar lab playroom is not identical to a child's everyday environment – in exchange for a level of standardization and reliability that unstructured naturalistic observation could not achieve. The three attachment classifications Ainsworth derived from this coding were themselves defined by specific, observable patterns: **secure** infants used the caregiver as a "secure base" for exploration, showed some distress at separation, and were readily comforted on reunion; **insecure-avoidant** infants explored readily but showed little distress at separation and actively avoided or ignored the caregiver on reunion; and **insecure-resistant/ambivalent** infants explored little, showed intense distress at separation, and simultaneously sought and resisted comfort on reunion. Defining each category in terms of these concrete, observable behaviours – rather than a vague impression of "how attached" an infant seemed – is itself an example of **operationalization** applied to observational coding, and is precisely what made consistent classification by independent observers possible.

GIẢI THÍCH TIẾNG VIỆT

VN

Quan sát tự nhiên (naturalistic observation) là quan sát hành vi trong bối cảnh tự nhiên mà KHÔNG thao túng bất kỳ biến số nào (khác với field experiment – vẫn thao túng một IV nhưng trong bối cảnh tự nhiên); ưu điểm là **độ giá trị sinh thái (ecological validity)** cao nhưng nhược điểm là khó kiểm soát biến ngoại lai và dễ gặp **thiên lệch của người quan sát (observer bias)** – khắc phục bằng cách xây dựng trước một **hệ thống mã hoá (coding scheme)** với các phạm trù hành vi đã được **thao tác hoá** rõ ràng, và dùng từ hai người quan sát độc lập trở lên để tính **độ tin cậy giữa các người quan sát (inter-observer reliability)**. **Quan sát có kiểm soát/cấu trúc (controlled/structured observation)** diễn ra trong bối cảnh được chuẩn hoá theo một quy trình do nhà nghiên cứu thiết kế sẵn, giúp kiểm soát tốt hơn. Nghiên cứu **Strange Situation** của Ainsworth and Bell (1970) là ví dụ kinh điển: nhờ bối cảnh phòng thí nghiệm được chuẩn hoá và các phạm trù hành vi (khám phá, đau khổ khi chia tách, phản ứng khi đoàn tụ) được thao tác hoá rõ ràng trước, các nhà quan sát độc lập đạt **độ tin cậy** cao khi phân loại trẻ vào các kiểu gắn bó (an toàn, né tránh, lo âu/kháng cự). Ngoài ra, các nhà nghiên cứu còn phải quyết định

ghi nhận hành vi khi nào: **time sampling** (lấy mẫu theo thời gian) ghi nhận xem hành vi mục tiêu có đang xảy ra tại các khoảng thời gian cố định định trước hay không (ví dụ mỗi 30 giây một lần) – hiệu quả nhưng có thể bỏ sót các hành vi ngắn xảy ra giữa các lần lấy mẫu; **event sampling** (lấy mẫu theo sự kiện) ghi nhận MỌI lần một hành vi cụ thể đã được định nghĩa trước xảy ra – đầy đủ hơn với các hành vi hiếm gặp nhưng khó áp dụng nhất quán khi phải theo dõi nhiều hành vi cùng lúc. Ba kiểu gắn bó của Ainsworth (an toàn, né tránh, lo âu/kháng cự) đều được định nghĩa bằng các hành vi quan sát được cụ thể – một ví dụ về **thao tác hoá** áp dụng cho việc mã hoá quan sát.

(!) Lỗi thường gặp: A common error is treating "observation" as automatically low in scientific rigor. Rigor in observational research does not come from avoiding all structure – it comes from operationalizing behavioural categories in advance and checking inter-observer reliability. A controlled observation with a well-designed coding scheme (like the Strange Situation) can be just as methodologically rigorous, in this specific sense, as an experiment; what it still lacks, unlike a true experiment, is the ability to establish causation, since no IV is manipulated in either naturalistic or controlled observation.

1.12 Longitudinal versus cross-sectional designs

Khái niệm cốt lõi

A **cross-sectional design** compares different groups of participants (often differing in age) at a single point in time – for example, testing memory performance in separate samples of 20-, 40-, and 60-year-olds all within the same month. This design is comparatively fast and inexpensive to run and avoids **participant attrition** entirely, since each participant is tested only once. However, any difference found between the groups may reflect a **cohort effect** – the groups were born in different historical periods and so differ systematically in life experience, education, nutrition, or culture – rather than a genuine effect of ageing or development itself. A **longitudinal design** instead follows the *same* group of participants over an extended period, remeasuring them repeatedly (e.g., testing the same cohort's memory at ages 20, 40, and 60). Because the same individuals are tracked over time, a longitudinal design can capture genuine within-person developmental change and avoids cohort effects entirely. Its major limitations are practical: longitudinal studies are expensive and time-consuming to run over many years or decades, and they are vulnerable to **participant attrition** (dropout) – participants who move away, lose interest, or die during the study – which can bias the remaining sample if those who drop out differ systematically from those who stay (e.g., if less healthy, less successful, or less motivated participants are disproportionately more likely to leave the study, leaving an increasingly unrepresentative surviving sample over time). A third option, the **cross-sequential (cohort-sequential) design**, combines features of both: several different age cohorts are each followed longitudinally, but only for a shorter period with overlapping age ranges (e.g., following a 20-year-old cohort and a 40-year-old cohort simultaneously for five years each, rather than following a single cohort for twenty years). This produces a fuller developmental picture more quickly than a single pure longitudinal study, while the overlap between cohorts also allows researchers to check directly whether a cohort effect is present.

Design	Key strength	Key limitation
Cross-sectional	Fast and inexpensive; no participant attrition	Differences may reflect cohort effects, not true age/developmental change
Longitudinal	Tracks genuine within-person change; avoids cohort effects	Expensive and slow; vulnerable to participant attrition
Cross-sequential	Combines speed with the ability to check for cohort effects	Still requires multiple cohorts and repeated testing

Cross-sectional, longitudinal, and cross-sequential (cohort-sequential) designs compared.

Ví dụ mẫu · Worked example

The **Dunedin Multidisciplinary Health and Development Study** is a real longitudinal cohort study that has followed approximately 1,000 people born in Dunedin, New Zealand between 1972 and 1973, assessing them repeatedly – from birth into mid-adulthood – on an extensive battery of health, psychological, and behavioural measures. This same birth cohort was used in **Caspi et al.'s (2003)** gene-environment interaction study of the 5-HTT (serotonin transporter) gene and depression (covered in the Biological Approach unit). Caspi et al. measured participants' **stressful life events** occurring between ages 21 and 26, and then measured **depression** outcomes afterward, finding that stressful life events predicted later depression much more strongly in individuals carrying one or two copies of the short allele of the 5-HTT gene than in those homozygous for the long allele. The study's **longitudinal** design was essential to this conclusion: because life stress was measured *before* depression was assessed in the very same individuals, the researchers could establish a plausible **time-order** (stress preceding, and potentially contributing to, later depression) in a way that a single cross-sectional snapshot comparing currently-stressed and currently-depressed people at one point in time could never provide, since a cross-sectional design cannot determine whether stress preceded depression or depression (and its consequences, e.g., relationship breakdown) generated the stressful events. The Dunedin cohort's long-running, repeated-measures structure – despite the inevitable practical cost of tracking the same participants for decades – is precisely what made this gene-environment interaction analysis possible. The Dunedin study is also notable among longitudinal projects for its unusually high participant retention – widely reported as retaining well over 90% of living cohort members across its many assessment waves – which substantially reduces the attrition-bias problem that undermines many other multi-decade longitudinal studies. Caspi et al.'s (2003) finding is considered one of the first well-known demonstrations of a specific **gene-environment interaction (G×E)** in psychology: neither the genotype nor stressful life events alone reliably predicted depression, but their *combination* did – a pattern that only a longitudinal design measuring both genotype (fixed from birth) and life events occurring within a specific later age window could reveal.

GIẢI THÍCH TIẾNG VIỆT

VN

Thiết kế **cắt ngang (cross-sectional)** so sánh các nhóm người tham gia KHÁC NHAU (ví dụ các nhóm tuổi khác nhau) tại MỘT thời điểm duy nhất – nhanh, rẻ, không có tình trạng bỏ cuộc (attrition), nhưng khác biệt giữa các nhóm có thể chỉ phản ánh **hiệu ứng thế hệ (cohort effect)** (các nhóm lớn lên trong bối cảnh lịch sử/văn hoá khác nhau) chứ không phải do tuổi tác hay phát triển thật sự. Thiết kế **dọc (longitudinal)** theo dõi CÙNG MỘT nhóm người tham gia qua nhiều năm, đo lặp lại nhiều lần – giúp phát hiện thay đổi thật sự theo thời gian ở từng cá nhân và tránh được hiệu ứng thế hệ, nhưng tốn kém, mất thời gian, và dễ gặp **tình trạng bỏ cuộc (attrition)** làm mẫu còn lại bị lệch. Nghiên cứu **Dunedin Multidisciplinary Health and Development Study** theo dõi khoảng 1.000 người sinh tại Dunedin, New Zealand năm 1972–

1973 từ lúc sinh đến tuổi trưởng thành, chính là nhóm đoàn hệ (cohort) được Caspi và cộng sự (2003) dùng để nghiên cứu tương tác gen–môi trường (gen 5-HTT và trầm cảm): nhờ thiết kế dọc, các nhà nghiên cứu đo được các sự kiện căng thẳng (tuổi 21–26) TRƯỚC rồi mới đo trầm cảm SAU đó, thiết lập được trật tự thời gian hợp lý mà một nghiên cứu cắt ngang không bao giờ làm được. Thiết kế thứ ba, **cross-sequential (cohort-sequential)**, kết hợp cả hai: theo dõi nhiều nhóm đoàn hệ (cohort) khác độ tuổi trong một khoảng thời gian ngắn hơn, cho phép vừa có bức tranh phát triển đầy đủ nhanh hơn, vừa kiểm tra được liệu có hiệu ứng thế hệ hay không. Nghiên cứu Dunedin còn nổi tiếng vì tỷ lệ giữ chân người tham gia rất cao (thường được báo cáo trên 90% số người còn sống ở mỗi đợt đánh giá), giúp giảm đáng kể vấn đề bỏ cuộc. Phát hiện của Caspi và cộng sự (2003) là một trong những minh chứng nổi tiếng đầu tiên về **tương tác gen–môi trường (gene-environment interaction)**: chỉ riêng gen hoặc chỉ riêng biến cố căng thẳng không dự đoán được trầm cảm một cách đáng tin cậy, mà chính sự KẾT HỢP giữa hai yếu tố mới dự đoán được.

(!) Lỗi thường gặp: Do not assume a longitudinal design automatically proves causation just because it establishes time-order. Caspi et al.'s (2003) design shows that stress plausibly preceded depression in genetically vulnerable individuals, strengthening the causal argument considerably compared to a cross-sectional snapshot – but the study remains fundamentally correlational (no variable was experimentally manipulated), so an unmeasured third variable occurring alongside both the stressful events and the genetic predisposition could still, in principle, contribute to the observed pattern.

1.13 Statistical significance and decision errors

Once a study's data have been collected, researchers must decide whether an observed difference or relationship reflects a genuine effect or could easily have arisen by chance alone even if no real effect exists. This decision is made using **inferential statistics**: a statistical test converts the pattern of results into a single **p-value** – the probability, *if the null hypothesis (H_0) were actually true*, of obtaining a result at least as extreme as the one actually observed. A result is described as **statistically significant** when this p-value falls below a pre-set threshold decided *before* the data are analysed, called the **significance level** (denoted α, "alpha"). By convention in psychology, $\alpha = 0.05$ (a 5% threshold) is used: a researcher agrees in advance to reject H_0 only if a result this extreme (or more extreme) would occur by chance alone less than 5% of the time. Because this is a probabilistic judgement rather than a certainty, every significance test carries some risk of reaching the wrong conclusion about whether a real effect exists – and psychologists distinguish two distinct types of decision error that can occur.

Khái niệm cốt lõi

A **Type I error** (a "false positive") occurs when a researcher **rejects a true null hypothesis** – concluding that an effect or relationship exists when, in reality, it does not, and the observed difference was simply produced by chance. The probability of committing a Type I error, given that H_0 is actually true, is set directly by the significance level itself: adopting $\alpha = 0.05$ means the researcher has accepted a 5% chance of a Type I error whenever H_0 happens to be true. A **Type II error** (a "false negative") occurs when a researcher **fails to reject a false null hypothesis** – concluding that no effect or relationship exists when, in reality, one does. Type II errors become more likely whenever a study has low **statistical power** (its ability to detect a true effect when one is present), which is typically reduced by a small sample size, a weak or small true effect, or highly variable (noisy) data. Critically, the two error types trade off against one another: tightening the significance threshold (e.g., lowering α from 0.05 to a stricter 0.01)

makes it harder to reject H_0 purely by chance, reducing the Type I error rate, but simultaneously makes it harder to reject H_0 even when it is genuinely false, thereby increasing the Type II error rate; relaxing the threshold (e.g., raising α to 0.10) has the opposite pattern, lowering Type II errors at the cost of more Type I errors. Moving the significance threshold alone cannot reduce both error types at once – the only way to lower both simultaneously is to improve the underlying study itself, most commonly by increasing statistical power through a larger sample size.

	Reality: H_0 true	**Reality: H_0 false**
Decision: reject H_0	**Type I error** (false positive; probability $= \alpha$)	Correct decision (true positive)
Decision: fail to reject H_0	Correct decision (true negative)	**Type II error** (false negative)

The four possible outcomes of a significance test, crossing the researcher's decision with the (usually unknowable) true state of the world. Only two of the four cells are errors: rejecting a true H_0 (Type I) and failing to reject a false H_0 (Type II).

VN **GIẢI THÍCH TIẾNG VIỆT**

Một kết quả được coi là **có ý nghĩa thống kê (statistically significant)** khi xác suất (giá trị p) thu được kết quả đó hoàn toàn do ngẫu nhiên – nếu giả thuyết không (H_0) thực sự đúng – thấp hơn một ngưỡng định trước, quy ước là $\alpha = 0.05$ (5%) trong tâm lý học. **Lỗi loại I (Type I error)** là "dương tính giả" (false positive): bác bỏ một H_0 thực ra đúng, tức là kết luận rằng có hiệu ứng trong khi thực tế không hề có; xác suất mắc lỗi loại I chính bằng mức α mà nhà nghiên cứu đã chọn từ trước – dùng $\alpha = 0.05$ nghĩa là chấp nhận 5% khả năng mắc lỗi loại I nếu H_0 thực sự đúng. **Lỗi loại II (Type II error)** là "âm tính giả" (false negative): không bác bỏ một H_0 thực ra sai, tức là kết luận rằng không có hiệu ứng trong khi thực tế có; lỗi này dễ xảy ra hơn khi cỡ mẫu nhỏ hoặc **sức mạnh thống kê (statistical power)** của nghiên cứu yếu. Hai loại lỗi này luôn đánh đổi lẫn nhau: siết chặt ngưỡng ý nghĩa (ví dụ hạ α xuống 0.01) sẽ làm giảm lỗi loại I nhưng lại làm tăng lỗi loại II, và nới lỏng ngưỡng (ví dụ tăng α lên 0.10) thì ngược lại; chỉ có cách tăng **sức mạnh thống kê** (ví dụ tăng cỡ mẫu) mới có thể giảm đồng thời cả hai loại lỗi. Đây cũng là một lý do quan trọng khiến nhiều phát hiện "có ý nghĩa thống kê" ban đầu đã không thể tái lặp trong dự án **Open Science Collaboration (2015)** (đã nhắc ở phần khủng hoảng tái lặp phía trên): tỷ lệ lỗi loại I bị thổi phồng thông qua **p-hacking** – thử nhiều phép phân tích khác nhau cho đến khi ra được $p < 0.05$ – là một trong những nguyên nhân cốt lõi khiến các nghiên cứu gốc báo cáo "có ý nghĩa" nhưng không tái lặp được.

Ví dụ mẫu · Worked example

A researcher hypothesizes that a new mindfulness app reduces self-reported stress scores compared to a control condition, and – before collecting any data – sets the significance level at $\alpha = 0.05$. After running the study and analysing the results, the statistical test returns $p = 0.03$. Because $0.03 < 0.05$, the researcher correctly **rejects** H_0 and concludes that the app produced a statistically significant reduction in stress.

What would a Type I error mean in this exact scenario? A Type I error here would mean that, in reality, the mindfulness app has *no true effect* on stress at all (i.e., H_0 is actually true), but this particular sample of participants happened, purely by chance, to show a reduction in stress large enough to produce $p = 0.03$ – leading the researcher to wrongly announce a real, replicable effect that does not actually exist in the wider population. Because the researcher pre-set $\alpha = 0.05$, the design accepts, by construction, up to a 5% risk of exactly this kind of

false-positive conclusion whenever H_0 happens to be true: if the same (genuinely ineffective) app were tested in many independent, identically designed studies, roughly one in twenty of those studies would be expected to cross $p < 0.05$ by chance alone. Obtaining $p = 0.03$ does not, by itself, tell the researcher *whether* this particular result is the genuine effect or the unlucky 5% – it only tells them that, assuming H_0 is true, a result this extreme was unlikely enough to justify rejecting H_0 under the pre-agreed decision rule.

1.14 Problem Bank

Bài tập luyện tập

A researcher wants to know whether short-term memory span differs between musicians and non-musicians. She cannot randomly assign participants to be "musician" or "non-musician" – she simply tests people who already are one or the other. This study design is best classified as a:

(A) True lab experiment
(B) Quasi-experiment
(C) Correlational study
(D) Case study

Lời giải chi tiết

The IV ("musician status") is a pre-existing participant characteristic that cannot be manipulated or randomly assigned – this is the defining feature of a **quasi-experiment**. It is not a correlational study because two categorical groups are being compared using an experimental-style DV measure (memory span), and it is not a true experiment because random assignment to conditions is impossible. **(B)**.

Bài tập luyện tập

A study finds a strong positive correlation ($r = 0.72$) between hours of daily social media use and self-reported anxiety in teenagers. A newspaper headline claims "Social media causes teen anxiety." What is the strongest criticism of this headline?

(A) The correlation coefficient is too high to be meaningful
(B) Correlational data cannot establish causation or its direction; a third variable (e.g., poor sleep) could explain both
(C) Anxiety cannot be measured using self-report methods
(D) The sample must have been too small to be valid

Lời giải chi tiết

A correlation of 0.72 only shows that the two variables move together; it says nothing about which variable (if either) causes the other, and a plausible third variable such as poor sleep, offline social difficulties, or pre-existing anxiety driving more social media use could account for the association (the **directionality** and **third-variable** problems). Sample size and measurement method are not indicated as flaws here. **(B)**.

Bài tập luyện tập

In a repeated measures experiment testing two font sizes on reading speed, every participant reads text A in the small font first, then text B in the large font. What is the main methodological weakness of this design as described?

(A) The sample is too small

(B) No counterbalancing was used, so an order/practice effect is confounded with font size

(C) Repeated measures designs cannot use two conditions

(D) The DV was not operationalized

Lời giải chi tiết

Because every participant experiences the small font first and the large font second, in a fixed order, any improvement in reading speed on the second text could be due to increasing familiarity with the task (a **practice effect**) rather than to the font size itself – font size is confounded with order of presentation. This is fixed by **counterbalancing** (e.g., half the sample sees large font first). **(B)**.

Bài tập luyện tập

Which sampling technique is most likely to produce a sample biased toward unusually motivated, curious, or compliant participants?

(A) Random sampling

(B) Volunteer/self-selected sampling

(C) Systematic sampling from a full population register

(D) Stratified sampling

Lời giải chi tiết

Because participants actively choose to respond to a recruitment call in **volunteer/self-selected sampling**, they tend to differ systematically from non-volunteers – typically being more curious, motivated, or compliant (sometimes called "volunteer bias") – which can limit how representative the sample is of the wider target population. **(B)**.

Bài tập luyện tập

A psychology test is administered to the same group of participants twice, two weeks apart, and their scores correlate highly ($r = 0.88$). This is evidence for which property of the test?

(A) Ecological validity

(B) Test–retest reliability

(C) Internal validity

(D) Population validity

Lời giải chi tiết

Administering the *same* test to the *same* people at two different times and finding a high correlation between the two sets of scores is the definition of **test–retest reliability** – it shows the measure produces consistent results over time, though it says nothing directly about whether the test measures the intended construct (validity). **(B)**.

Bài tập luyện tập

Two independent raters code videotapes of parent-child interactions for "warmth" and agree on 91% of coded segments. This 91% agreement figure is a measure of:

(A) Construct validity
(B) Inter-rater reliability
(C) Ecological validity
(D) Directionality

Lời giải chi tiết

Agreement between two independent observers/coders rating the same behaviour is, by definition, **inter-rater reliability** – a form of consistency (not accuracy/validity) that shows the coding scheme can be applied consistently across different raters. **(B)**.

Bài tập luyện tập

Festinger, Riecken, and Schachter (1956) had researchers covertly join a doomsday cult, pretending to be genuine believers, to observe reactions when a prophecy failed. Which of the following is the most serious ethical problem specific to this method?

(A) The sample size was too small to generalize
(B) Participants could not give informed consent or exercise a right to withdraw, because they did not know they were being studied
(C) The IV was not operationalized
(D) The study lacked a control group

Lời giải chi tiết

Because the "participants" (cult members) never knew a study was taking place, they could not possibly have given **informed consent**, nor could they exercise a **right to withdraw** from participation they were unaware of – this is the central ethical problem with covert participant observation, distinct from purely methodological issues like sample size or control groups. **(B)**.

Bài tập luyện tập

A study operationalizes "intelligence" solely as "score on a single 10-minute vocabulary quiz." A critic argues this fails to capture the broader, multidimensional concept of intelligence. This is a criticism of the study's:

(A) Test–retest reliability
(B) Construct validity
(C) Sampling technique
(D) Right to withdraw

Lời giải chi tiết

The criticism is that the operational definition used does not adequately represent the full, real-world concept ("construct") of intelligence – this is precisely what **construct validity** addresses: does the operationalization genuinely capture the underlying abstract concept it claims to measure? **(B)**.

Bài tập luyện tập

Middlemist, Knowles, and Matter (1976) secretly observed men's urination behaviour in a public restroom to study personal space. Even though no physical harm occurred and data were anonymous, ethicists still criticize this study primarily because:

(A) The sample was entirely male

(B) It seriously invaded participants' privacy without any consent, which cannot be remedied by anonymity alone

(C) The DV (urination onset/duration) was invalid

(D) It used a repeated measures design

Lời giải chi tiết

The core objection is that being covertly observed during a private bodily act is a serious **invasion of privacy** in itself, entirely independent of whether the data collected were later anonymized or whether any measurable "harm" occurred – privacy and consent are ethical requirements on their own terms, not just means to avoid harm. **(B)**.

Bài tập luyện tập

A study uses purposive sampling to recruit 15 refugees who have resettled within the past year, to explore their lived experience of acculturation through in-depth interviews. What is the most appropriate justification for this sampling choice?

(A) Purposive sampling guarantees a representative, generalizable sample

(B) Purposive sampling ensures participants have the specific relevant experience needed to answer a qualitative research question in depth

(C) Purposive sampling is required for all experiments

(D) Purposive sampling eliminates the need for informed consent

Lời giải chi tiết

Purposive sampling deliberately selects participants *because* they possess characteristics or experiences directly relevant to the research question (here, recent resettlement), which is exactly suited to a qualitative study seeking rich, relevant, in-depth accounts – though (unlike random sampling) it does not itself guarantee statistical generalizability to the wider population. **(B)**.

Bài tập luyện tập

A researcher records that participants in a stress study who reported being told "this is just a mild, harmless task" showed lower cortisol responses than an otherwise identical group not given this reassurance. Which extraneous variable is this design attempting to control?

(A) Demand characteristics arising from participants' expectations about the task

(B) Order effects

(C) Sampling bias

(D) Inter-rater reliability

Lời giải chi tiết

Telling participants what to expect directly manipulates their beliefs/expectations about the study, which is a way of controlling (or in this case, studying) **demand characteristics** – cues in the situation, including experimenter instructions, that shape how participants interpret and respond to the task, independent of the ”real” IV. **(A)**.

Bài tập luyện tập

Which of the following best distinguishes a natural experiment from a true (randomized) experiment?

(A) A natural experiment always has a larger sample size

(B) In a natural experiment, the researcher does not manipulate or control the occurrence of the IV, which arises from a naturally occurring event

(C) A natural experiment always uses a repeated measures design

(D) A natural experiment cannot have a dependent variable

Lời giải chi tiết

The defining feature of a **natural experiment** is that the ”IV” is a naturally occurring event or change (e.g., a policy change, a disaster, the arrival of a new technology) that the researcher observes the effects of but has no control over creating or timing – unlike a true experiment, where the researcher deliberately manipulates and randomly allocates the IV. **(B)**.

Bài tập luyện tập

A focus group discussing attitudes toward a new mental health app produces a transcript later coded for recurring ideas such as ”privacy concerns,” ”convenience,” and ”distrust of AI.” This analytic approach is best described as:

(A) Thematic analysis

(B) A true experiment

(C) A quasi-experiment

(D) Test–retest reliability assessment

Lời giải chi tiết

Identifying and labelling recurring patterns or ideas (”themes”) within qualitative data such as a focus group transcript is the defining procedure of **thematic analysis**, a systematic qualitative coding method (distinct from experimental designs, which require IV manipulation). **(A)**.

Bài tập luyện tập

SAQ-style: Outline the difference between a lab experiment and a field experiment, using one named study as an example of either type.

Lời giải chi tiết

A **lab experiment** takes place in a controlled, artificial setting where the researcher can carefully standardize procedures and minimize the influence of extraneous variables, maximizing internal validity but sometimes at the cost of ecological validity (participants may behave differently than they would in a real-world context, and demand characteristics are more likely).

A **field experiment** manipulates the IV in a real-world, naturally occurring setting, which increases ecological validity (behaviour is more likely to reflect how people act in everyday life) but reduces the researcher's control over extraneous variables. **Milgram's (1963)** obedience study is a clear example of a **lab experiment**: it was conducted in a controlled Yale University laboratory setting, with a standardized script, a confederate whose responses were prerecorded and identical for every participant, and a fixed shock-generator apparatus – allowing Milgram to isolate the effect of the experimenter's authority (the IV, e.g., proximity/legitimacy of the authority figure across variations of the study) on obedience (the DV, maximum shock level administered) with high internal validity, though at some cost to how confidently the findings generalize to real-world obedience situations. Full credit clearly defines both terms and links at least one to specific, accurate features of a real study.

Bài tập luyện tập

SAQ-style: Describe one strength and one limitation of using semi-structured interviews to investigate the lived experience of grief in bereaved adults.

Lời giải chi tiết

Strength: Semi-structured interviews combine a flexible set of open-ended prompts with the freedom to follow up on unexpected or emotionally significant answers, so researchers can gather rich, detailed, contextualized data about how a participant personally experiences and makes meaning of grief – something a fixed questionnaire could not capture. **Limitation:** Because questions and follow-ups vary somewhat between participants and the interviewer's own reactions/body language may (even unintentionally) influence what participants disclose, semi-structured interviews are vulnerable to **interviewer bias** and reduced **dependability** across interviews, and findings are not statistically generalizable beyond the small, usually purposively-sampled group interviewed. A full-credit answer clearly names one genuine strength and one genuine limitation and links each to a feature specific to semi-structured interviews (not qualitative methods in general).

Bài tập luyện tập

SAQ-style: Explain why case studies are considered low in population validity but can still make an important contribution to psychological knowledge.

Lời giải chi tiết

A case study investigates a single individual, small group, or event in great depth, but because it studies only one (often atypical or extreme) case, its findings cannot be safely assumed to apply to people in general – this is what is meant by low **population validity** (generalizability). However, case studies remain valuable because they can document rare or unique phenomena that would be impossible or unethical to create experimentally – for example, **Curtiss's (1977)** case study of "Genie," a girl discovered after extreme early-life linguistic and social isolation, provided evidence relevant to the critical-period hypothesis of language acquisition that no experiment could ethically replicate. Case studies also generate rich, detailed hypotheses that can subsequently be tested using more generalizable methods, and can act as genuine counterexamples that challenge overly general theories. Full credit explains population validity accurately and gives a specific, accurate reason (with example) why case studies still contribute to the field despite this limitation.

Bài tập luyện tập

SAQ-style: Explain the difference between reliability and validity, using an example to illustrate each.

Lời giải chi tiết

Reliability refers to the *consistency* of a measure – whether it produces the same result under the same conditions repeatedly (e.g., **test–retest reliability**: giving the same personality questionnaire to the same people two weeks apart and finding highly correlated scores). **Validity** refers to the *accuracy* of a measure – whether it actually measures the construct it claims to measure (e.g., **construct validity**: does a "10-minute vocabulary quiz" genuinely capture the broad, multidimensional concept of "intelligence," or only one narrow verbal component of it?). Crucially, a measure can be highly reliable (very consistent) while still lacking validity (consistently measuring the wrong thing) – for instance, a bathroom scale that is miscalibrated to always add exactly 2 kg would give highly consistent (reliable) but inaccurate (invalid) readings every time. Full credit defines both terms precisely and uses at least one concrete, accurate example for each, ideally showing that reliability does not guarantee validity.

Bài tập luyện tập

SAQ-style: With reference to one study, explain one ethical consideration a researcher must address when deception is used.

Lời giải chi tiết

When **deception** is used – misleading participants about the true purpose or procedure of a study – researchers must be able to justify that the research could not reasonably be conducted without it, and must always follow the study with a thorough **debriefing**. In **Milgram's (1963)** obedience study, participants were deceived into believing they were administering real, increasingly dangerous electric shocks to another participant (in reality a confederate who received no shocks at all) as part of a supposed "learning and memory" experiment; this deception was essential to studying genuine obedience to authority, since participants who knew the shocks were fake could not meaningfully be "obeying" a harmful instruction. Milgram addressed the ethical requirement for debriefing by informing all participants immediately afterward that the shocks were fake and the confederate was unharmed, and by following up with participants over time (finding most reported no lasting harm and were glad to have participated) – though critics still argue the debriefing could not fully undo the acute distress many participants experienced *during* the procedure itself. Full credit names the specific ethical consideration (deception, requiring justification and debriefing), links it accurately to the named study, and evaluates whether the researcher's response was adequate.

Bài tập luyện tập

SAQ-style: Describe the use of triangulation in psychological research, with reference to an example.

Lời giải chi tiết

Triangulation is the practice of studying the same research question using multiple methods, data sources, or researchers, so that the strengths of one approach can offset the weaknesses of another and convergent results increase confidence in the conclusions. For example,

a researcher investigating workplace stress might combine a quantitative measure of cortisol levels (an experimental/physiological method with strong objectivity and internal validity, but which cannot explain *why* stress is occurring) with semi-structured interviews exploring employees' subjective experiences of their workload and management support (a qualitative method offering rich contextual explanation, but weaker generalizability and more researcher-interpretation-dependent). If both methods converge – e.g., employees reporting high subjective stress and management pressure also show elevated cortisol – the overall conclusion that workplace stress is genuinely elevated and linked to specific organizational factors is far more credible than either method could establish alone. Full credit defines triangulation accurately and gives a specific, plausible example combining at least two distinct methods.

Bài tập luyện tập

ERQ-style: Discuss the ethical considerations a researcher would need to address before conducting a study modelled on Milgram's (1963) obedience research today.

Lời giải chi tiết

A modern replication would need to satisfy several ethical requirements Milgram's original study did not fully meet. **Informed consent**: participants would need to be told enough about the true nature of the procedure to decide whether to take part – but since the core manipulation (a confederate apparently receiving real shocks) depends on deception, this creates an unavoidable tension; researchers today typically resolve it by using **presumptive consent** (asking a separate sample "would you be willing to participate if X happened?") or by minimizing deception and harm (e.g., Burger's 2009 partial replication stopped the procedure at 150V, the point Milgram found most predictive of continuing to the maximum, specifically to reduce psychological harm while still testing the same obedience mechanism). **Right to withdraw** must be genuine and unimpeded – unlike Milgram's scripted verbal prods pressuring continuation ("the experiment requires that you continue"), which arguably compromised participants' ability to exercise this right freely. **Protection from harm** requires monitoring participants' psychological state throughout the procedure and having support available immediately afterward, plus a thorough **debriefing** that reveals the deception, allows participants to ask questions, and reassures them that their behaviour reflected a known, powerful situational pressure rather than a personal moral failing – reducing potential long-term harm to self-esteem. An institutional **ethics review board** would weigh these anticipated costs against the study's scientific and social value (understanding real-world obedience, e.g., in atrocities, corporate wrongdoing, or medical error) before approving it, likely requiring significant modifications (a lower maximum "shock," clearer withdrawal rights, and standardized debriefing) rather than an outright ban. A strong answer names at least three specific ethical principles, explains how each applies to this specific design, and reaches a reasoned conclusion about whether/how the study could ethically proceed today.

Bài tập luyện tập

ERQ-style: Discuss the use of qualitative research methods in psychology, with reference to at least one study.

Lời giải chi tiết

Qualitative methods – including semi-structured and unstructured interviews, focus groups, and participant observation – aim to capture rich, in-depth, contextualized data about mean-

ing and experience, rather than numerical data suited to statistical generalization. **Festinger, Riecken, and Schachter (1956)** used **covert participant observation** to study a small doomsday cult, with researchers posing as genuine believers to observe how members reacted when their leader's prophesied apocalypse failed to occur. This method allowed the researchers to gather naturalistic, otherwise inaccessible data (members' real-time reactions and subsequent behaviour, including increased proselytizing after disconfirmation) that would have been essentially impossible to obtain through a lab experiment or self-report survey, since directly asking cult members about their beliefs as outside researchers would likely have altered their behaviour or been refused entirely. The resulting data directly generated **cognitive dissonance theory**. However, the method also illustrates classic limitations of qualitative research: because the researchers were embedded in and interpreting a single small group, findings have low population validity (a single, unusual cult's psychology may not generalize to belief systems broadly) and are vulnerable to researcher subjectivity in interpreting members' motives (a threat to **confirmability**, per Lincoln and Guba's 1985 criteria). Ethically, covert observation without informed consent or a right to withdraw is a serious concern that a modern ethics board would very likely reject or require to be substantially modified (e.g., using overt observation with consent, accepting some loss of naturalism in exchange for ethical compliance). A full-credit answer explains at least one qualitative method accurately, links it to a specific, accurately described study, and discusses both a strength and a limitation (methodological and/or ethical).

Bài tập luyện tập

ERQ-style: Evaluate the extent to which correlational studies and case studies can contribute to psychological knowledge, given that neither can establish causation with confidence.

Lời giải chi tiết

Although neither correlational studies nor case studies can establish causation on their own, both make substantial contributions to psychological knowledge. **Correlational studies** measure the naturally occurring relationship between two variables without manipulation, and are indispensable when it would be unethical or impossible to manipulate a variable directly – for example, researchers cannot ethically assign children to years of childhood abuse to study its effects on adult depression, so correlational designs (comparing naturally occurring differences in abuse history and later depression rates) are the only feasible approach, even though a third variable (e.g., poverty, family instability) or reverse causality could theoretically explain the association. Correlational findings are strengthened when combined with longitudinal designs (showing a plausible time-order) or with experimental evidence from related paradigms, and they are essential for generating hypotheses that can later be tested more rigorously. **Case studies**, such as **Curtiss's (1977)** study of "Genie" (a girl who suffered extreme early linguistic and social deprivation), can document rare, real-world phenomena that would be entirely unethical to create experimentally (no researcher could ethically isolate a child from language to test critical-period theory), providing evidence – albeit not conclusive, generalizable proof – that is otherwise completely unobtainable. Both methods share the limitation that they cannot cleanly isolate cause and effect (correlational studies face the third-variable and directionality problems; case studies cannot rule out the unique, idiosyncratic circumstances of a single case), meaning conclusions from either should be treated as suggestive rather than definitive until supported by converging evidence from other methods (triangulation). A full-credit answer explains why each method cannot establish causation, but also gives specific, accurate reasons (with named studies/examples) why each remains a valuable and sometimes

irreplaceable source of psychological evidence.

Bài tập luyện tập

ERQ-style: Discuss factors influencing the choice between an independent samples design and a repeated measures design in psychological experiments.

Lời giải chi tiết

The choice between an **independent samples design** (different participants in each condition) and a **repeated measures design** (the same participants complete every condition) depends on several practical and methodological factors. Repeated measures designs control for individual differences between participants because each person acts as their own baseline/control, which increases statistical sensitivity to detect a genuine effect of the IV with a smaller sample – this is particularly valuable when individual variation on the DV is expected to be large (e.g., baseline differences in reaction time or mood). However, repeated measures designs are vulnerable to **order effects**: practice effects (improvement due to familiarity or learning across repeated exposure to the task) or fatigue/boredom effects (decline in performance due to tiredness or reduced motivation), which can confound the effect of the IV unless **counterbalancing** (e.g., an ABBA design, or randomly varying condition order across participants) is used. Repeated measures designs are also unsuitable when the manipulation would have a lasting or irreversible effect on participants (e.g., you cannot ”reset” someone's mood after inducing sadness, or ”reset” their memory after they have seen a leading question, as in Loftus and Palmer's 1974 eyewitness memory paradigm, where each participant should only see one version of the leading question to avoid contaminating their memory for later conditions). **Independent samples designs** avoid order effects entirely, since each participant is only tested in one condition, but require a larger overall sample size to achieve the same statistical power (because individual differences between the separate groups are not controlled) and depend on successful **random allocation** to ensure the groups are roughly equivalent at the outset on relevant variables (e.g., age, prior experience). **Matched pairs designs** offer a compromise, pairing participants on key variables before splitting them between conditions, but are time-consuming and can never match on every possible relevant variable. A full-credit answer explains at least two specific factors (e.g., order effects/irreversibility of the manipulation, and individual differences/sample size), links them accurately to features of each design, and reaches a balanced, reasoned conclusion about when each design is most appropriate.

Bài tập luyện tập

The Open Science Collaboration (2015) found that only about 36% of 100 replication attempts reproduced the original study's statistically significant finding. Which factor is most directly implicated in explaining this low replication rate?

(A) Participants in replication studies were less intelligent

(B) Publication bias toward novel, significant findings and practices such as p-hacking in some original studies

(C) Replication studies never use the same methodology as the original

(D) Statistically significant findings can never be replicated in principle

Lời giải chi tiết

The replication crisis literature points to **publication bias** (journals historically favoured significant, novel results, so many published "positive" findings may have been the lucky ones that crossed the significance threshold by chance) and **p-hacking** (flexible analysis choices that inflate the false-positive rate) as key contributing causes – not participant ability or an inherent impossibility of replication, and replication teams do attempt to closely follow original methodology. **(B)**.

Bài tập luyện tập

A pharmaceutical-style pre-registration requires researchers to publicly specify their hypothesis and planned statistical analysis before collecting any data. How does this practice address the replication crisis?

(A) It guarantees the hypothesis will be supported

(B) It prevents researchers from selectively choosing, after seeing the data, which analysis to report as "the" result, reducing p-hacking and publication bias

(C) It removes the need for a control group

(D) It only applies to case studies

Lời giải chi tiết

By committing publicly to a specific hypothesis and analysis plan *before* data collection, **pre-registration** prevents researchers from trying multiple analyses after the fact and only reporting whichever one happened to reach statistical significance (a practice that inflates false positives) – directly targeting two of the main contributors to the replication crisis, p-hacking and publication bias toward "clean" significant results. **(B)**.

Bài tập luyện tập

Henrich, Heine, and Norenzayan (2010) argue that most published psychology findings come from WEIRD samples. Which methodological concept does this critique most directly concern?

(A) Test–retest reliability

(B) Population validity / generalizability of findings beyond a narrow, unrepresentative sample

(C) Order effects in repeated measures designs

(D) The right to withdraw

Lời giải chi tiết

The WEIRD critique is fundamentally about whether findings from a narrow, systematically unusual sample (Western, Educated, Industrialized, Rich, Democratic, typically university students) can be assumed to generalize to humans broadly – this is precisely the concern of **population validity**, not reliability, order effects, or ethics. **(B)**.

Bài tập luyện tập

SAQ-style: Explain how meta-analysis contributes to the strength of evidence in psychological research.

Lời giải chi tiết

A **meta-analysis** statistically combines the results of many independent studies addressing the same question into a single overall **effect size** estimate, weighting each study (typically by sample size/precision) so that larger, more precise studies contribute proportionally more to the combined result. This has two main advantages over relying on any single study: first, it increases statistical power to detect real effects that might be too small or inconsistent for any one modestly-sized study to reliably detect; second, it reveals how consistent an effect is across different samples, settings, cultures, or time periods, which a single study cannot show on its own. For example, **Bond and Smith (1996)** combined 133 replications of Asch's conformity paradigm conducted across 17 countries to reveal a consistent cultural pattern (higher conformity in more collectivist cultures) that no single original Asch-style study could have demonstrated alone. A meta-analysis is nonetheless limited by the quality of the underlying studies it combines: if most available studies share a common flaw (e.g., publication bias favouring significant results), the meta-analysis will inherit that same bias rather than correct for it. Full credit explains the logic of combining effect sizes across studies and gives an accurate example or advantage.

Bài tập luyện tập

A researcher watches children playing in their own homes without intervening in any way, recording their behaviour exactly as it naturally occurs. A second researcher brings unrelated children into a laboratory playroom and has them follow a fixed sequence of standardized activities while recording their behaviour. Which best describes the key methodological difference between these two studies?

(A) The first is a naturalistic observation with no manipulation of the setting or procedure; the second is a controlled observation using a standardized setting and structured procedure

(B) The first is a true experiment; the second is a case study

(C) Both studies are methodologically identical

(D) The first has higher inter-observer reliability than the second

Lời giải chi tiết

The defining difference is that the first study observes behaviour in an unaltered, natural setting with no standardized procedure (**naturalistic observation**), while the second uses a standardized laboratory setting and a structured, researcher-designed sequence of activities (**controlled/structured observation**). Neither study manipulates an IV, so neither is a true experiment or a case study, and controlled (not naturalistic) observation is typically associated with *higher*, not lower, inter-observer reliability precisely because of its standardization. **(A)**.

Bài tập luyện tập

Two researchers independently coding videotapes of parent-child play sessions initially disagree considerably about what counts as "affectionate touching." Which change would most directly improve the study's inter-observer reliability?

(A) Using only one observer instead of two

(B) Developing a clearer, pre-defined, operationalized coding scheme that both observers are trained to apply consistently

(C) Switching to a correlational design

(D) Increasing the number of families observed

Lời giải chi tiết

Disagreement between observers usually arises because behavioural categories are vague or subjective; sharpening the **coding scheme** into precise, **operationalized** categories (e.g., defining exactly what counts as "affectionate touching") that both raters are trained to apply the same way is what allows independent observers to converge on similar judgments, raising **inter-observer reliability**. Using only one observer would make reliability impossible to even calculate, since it requires comparing two or more independent raters; sample size and research design type do not address the underlying coding disagreement. **(B)**.

Bài tập luyện tập

A study compares memory test scores from a sample of 70-year-olds and a separate sample of 20-year-olds, all tested in the same month, and finds the older group performs worse. A critic argues the difference might not reflect ageing at all. What is this critic most likely pointing to?

(A) A practice effect

(B) A cohort effect: the two groups grew up under different historical, educational, and cultural conditions, which could account for the difference independently of age itself

(C) Demand characteristics

(D) Observer bias

Lời giải chi tiết

Because a **cross-sectional design** compares different people born in different eras, any difference between groups may be explained by **cohort effects** – systematic differences in the historical, educational, nutritional, or cultural conditions each generation grew up in – rather than by the ageing process itself. Practice/order effects apply to repeated-measures designs where the same participants are tested more than once, which is not the case here, and there is no indication of demand characteristics or observer bias in this scenario. **(B)**.

Bài tập luyện tập

A 20-year longitudinal study begins with 1,000 participants but only 600 remain by the final wave of data collection. Follow-up analysis shows that those who dropped out had, on average, lower baseline health and lower motivation scores than those who remained. What methodological problem does this illustrate?

(A) Cohort effects

(B) Participant attrition biasing the remaining sample, because those who drop out differ systematically from those who stay

(C) A practice effect

(D) Observer bias

Lời giải chi tiết

This scenario is a textbook case of **attrition**: participants who leave a long-running longitudinal study often differ systematically (here, in baseline health and motivation) from those who remain, so the surviving sample can become progressively less representative of the original sample over time – a limitation specific to longitudinal (not cross-sectional) designs. Cohort effects concern generational differences relevant to cross-sectional comparisons, and practice effects/observer bias do not describe sample dropout. **(B)**.

Bài tập luyện tập

SAQ-style: Explain one strength and one limitation of using a longitudinal research design, with reference to one study.

Lời giải chi tiết

Strength: A **longitudinal design** follows the same participants over time, allowing researchers to establish a plausible **time-order** between variables measured at different ages – something a single cross-sectional snapshot cannot do. In the **Dunedin Multidisciplinary Health and Development Study**, which has followed approximately 1,000 New Zealanders born in 1972–1973 from birth into adulthood, **Caspi et al. (2003)** used this longitudinal structure to measure stressful life events at ages 21–26 and then measure depression afterward, establishing that stress plausibly preceded depression (especially in those carrying the short allele of the 5-HTT gene) rather than the reverse. **Limitation:** Longitudinal studies are expensive and time-consuming to run over many years, and are vulnerable to **participant attrition** – participants who drop out over a multi-decade study may differ systematically (e.g., less healthy or less cooperative) from those who remain, potentially biasing the Dunedin cohort's later waves toward a healthier, more compliant surviving sample. Full credit clearly names one strength and one limitation and links each accurately to the named longitudinal study.

Bài tập luyện tập

ERQ-style: Discuss the use of observational methods in psychological research.

Lời giải chi tiết

Observational methods allow psychologists to study behaviour as it actually occurs, ranging from **naturalistic observation** (recording behaviour in its natural setting with no manipulation of any variable) to **controlled/structured observation** (a standardized setting and procedure designed by the researcher). Naturalistic observation's central strength is high **ecological validity**: because nothing about the setting or procedure is altered, recorded behaviour is more likely to reflect how people genuinely behave in everyday life, rather than behaviour distorted by an artificial laboratory context or by demand characteristics. Its central weakness is limited control over extraneous variables and vulnerability to **observer bias**, where the observer's expectations shape what is noticed and recorded – a problem addressed by developing an operationalized **coding scheme** in advance and using multiple independent observers to establish **inter-observer reliability**. **Ainsworth and Bell's (1970) Strange Situation** illustrates the complementary strength of **controlled observation**: by bringing infants and caregivers into a standardized laboratory playroom and running a fixed sequence of episodes (separation, stranger entry, reunion), while trained observers coded behaviour using predefined categories, the researchers achieved strong inter-observer reliability and could confidently classify infants into attachment categories – a level of standardization that unstructured naturalistic observation

could not offer, though at some cost to ecological validity relative to observing attachment behaviour in a child's own home.
Observational methods also raise distinctive ethical problems, particularly when observation is **covert** (participants do not know they are being observed). **Festinger, Riecken, and Schachter (1956)** used covert participant observation, infiltrating a doomsday cult to study reactions to a failed prophecy; because members never knew a study was occurring, they could not give informed consent or exercise a right to withdraw, even though the covert method captured otherwise unobtainable naturalistic data that directly generated cognitive dissonance theory. **Middlemist, Knowles, and Matter (1976)** similarly used covert field observation of men's urination behaviour to study personal space, a study widely regarded as a serious invasion of privacy despite anonymized data and the absence of physical harm. Together, these studies show that observational methods offer valuable ecological validity and, when structured, strong reliability, but require carefully weighing observer bias, the degree of standardization, and the ethics of consent, particularly when observation is covert. A full-credit answer explains at least one strength (ecological validity, or reliability/standardization) and one limitation (observer bias and/or the ethical problems of covert observation), each linked to a specific, accurately described study.

Bài tập luyện tập

A researcher sets $\alpha = 0.05$, obtains $p = 0.02$, and rejects the null hypothesis, concluding that a new teaching method improves exam scores. In reality, the teaching method has no true effect at all. This outcome is best described as a:

(A) Type II error
(B) Type I error
(C) A correctly retained null hypothesis
(D) A confounding variable

Lời giải chi tiết

Rejecting H_0 (concluding an effect exists) when H_0 is actually true is, by definition, a **Type I error** – a false positive. This is not a Type II error, which involves *failing* to reject a false H_0, and no correct decision was reached here, since the null hypothesis was in reality true and should not have been rejected. **(B)**.

Bài tập luyện tập

A small-scale study with only 12 participants fails to find a statistically significant difference between two conditions ($p = 0.11$), so the researcher fails to reject the null hypothesis. In reality, however, a genuine effect does exist in the population, and the study's low statistical power (partly a result of the small sample) meant it was unlikely to detect it. This outcome is best described as a:

(A) Type I error
(B) Type II error
(C) Publication bias
(D) A Type I and a Type II error occurring simultaneously

Lời giải chi tiết

Failing to reject H_0 (concluding no effect exists) when H_0 is actually false (a real effect exists) is, by definition, a **Type II error** – a false negative, made more likely here by the small sample size reducing statistical power. This is not a Type I error, which involves wrongly rejecting a

true H_0; the two error types are mutually exclusive within a single test, since only one decision (reject or fail to reject) is ever actually made. **(B)**.

Bài tập luyện tập

A research team is concerned about false positives after several of their past "significant" findings failed to replicate, so for their next study they decide to lower their significance threshold from $\alpha = 0.05$ to a stricter $\alpha = 0.01$, keeping the sample size and design otherwise unchanged. What is the most likely consequence of this change?

(A) Both the Type I and Type II error rates will decrease

(B) The Type I error rate will decrease, but the Type II error rate will increase

(C) The Type I error rate will increase, but the Type II error rate will decrease

(D) Neither error rate will be affected, since only sample size affects error rates

Lời giải chi tiết

Lowering α makes the criterion for rejecting H_0 stricter, which directly reduces the probability of a **Type I error** (since α *is* the Type I error rate). However, with sample size and design left unchanged, this same stricter criterion also makes it harder to reject H_0 even when a real effect is genuinely present, which increases the **Type II error** rate. The two error rates trade off against each other whenever only the threshold is changed; reducing both simultaneously requires improving statistical power (e.g., a larger sample), not simply moving α. **(B)**.

Bài tập luyện tập

SAQ-style: Explain the difference between a Type I and a Type II error in psychological research.

Lời giải chi tiết

A **Type I error** (a "false positive") occurs when a researcher **rejects a true null hypothesis** – concluding that an effect or relationship exists in the population when, in reality, it does not, and the result observed was simply due to chance. The probability of a Type I error is set directly by the researcher's chosen significance level (α); using the conventional $\alpha = 0.05$ means accepting a 5% risk of a Type I error whenever the null hypothesis is actually true. A **Type II error** (a "false negative") is the opposite mistake: a researcher **fails to reject a false null hypothesis** – concluding that no effect exists when, in reality, one does, which is more likely when a study has low statistical power, for example because of a small sample size or a weak true effect. The two errors therefore involve opposite mistakes (wrongly claiming an effect versus wrongly missing a real one) and trade off against each other: making the significance threshold stricter (e.g., $\alpha = 0.01$) reduces Type I errors but increases Type II errors, while loosening the threshold has the reverse effect. Full credit clearly defines both error types in terms of the decision made (reject/fail to reject H_0) and the true state of H_0, and explains the trade-off between them.

The Biological Approach to Behaviour

Mục tiêu Unit: Kỹ thuật nghiên cứu não bộ; định khu chức năng não (localization); tính mềm dẻo thần kinh (neuroplasticity); chất dẫn truyền thần kinh, hormone và pheromone; di truyền học và hành vi; giải thích tiến hoá cho hành vi; và đạo đức trong nghiên cứu sinh học (nghiên cứu trên động vật và trên não người).

2.1 Techniques used to study the brain

Khái niệm cốt lõi

Biological psychologists use several complementary technologies, each with a different trade-off between **spatial resolution** (how precisely a technique can localize activity in space) and **temporal resolution** (how precisely it can track activity over time). **MRI (magnetic resonance imaging)** uses magnetic fields to produce detailed *structural* images of brain anatomy (excellent spatial resolution, but a single static snapshot – no information about ongoing activity). **fMRI (functional MRI)** detects the **BOLD signal** (blood-oxygen-level-dependent contrast), an indirect measure of neural activity based on the fact that active brain regions demand more oxygenated blood; it offers good spatial resolution but only moderate temporal resolution (blood flow changes lag several seconds behind actual neural firing). **PET (positron emission tomography)** tracks a radioactively-labelled tracer (e.g., a glucose analogue) to show which regions are metabolically active, allowing researchers to also visualize specific neurotransmitter systems (e.g., dopamine receptor density) but exposing participants to radiation and offering poorer temporal resolution than fMRI. **EEG (electroencephalography)** records electrical activity from electrodes on the scalp with excellent temporal resolution (millisecond-by-millisecond) but poor spatial resolution (it cannot easily pinpoint the exact source of a signal within the brain). **Lesion and case studies** examine behaviour following naturally occurring brain damage (stroke, tumour, trauma) or, historically, surgical lesions, allowing researchers to infer a structure's function from what is lost when it is damaged – though no two lesions are identical, limiting generalizability.

Technique	What it measures	Spatial / temporal resolution	Key limitation
MRI	Structural anatomy	Excellent / none (static)	Cannot show activity, only structure
fMRI	Blood-oxygen (BOLD) activity	Good / moderate (seconds)	Indirect measure; correlational
PET	Metabolic / neurotransmitter activity	Moderate / poor	Invasive (radioactive tracer)
EEG	Electrical activity (scalp)	Poor / excellent (ms)	Cannot localize source precisely

Comparing brain-imaging techniques: no single method offers both high spatial and high temporal resolution, which is why researchers often combine methods (triangulation).

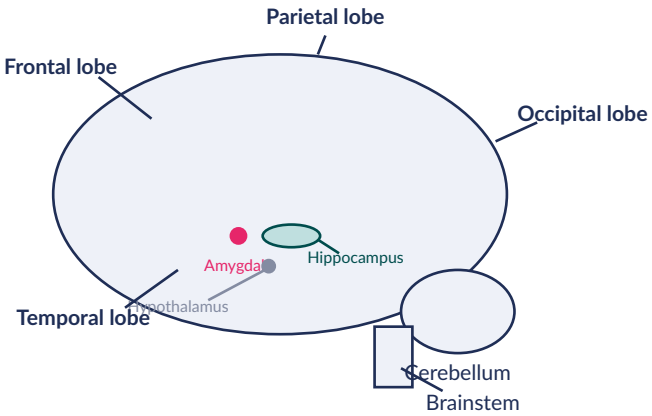
VN **GIẢI THÍCH TIẾNG VIỆT**

Không có kỹ thuật hình ảnh não nào hoàn hảo: **MRI** cho cấu trúc rất rõ nhưng không cho biết hoạt động; **fMRI** theo dõi hoạt động qua tín hiệu oxy trong máu (BOLD) nhưng có độ trễ vài giây; **PET** cho biết hoạt động chuyển hoá/chất dẫn truyền thần kinh nhưng phải dùng chất phóng xạ; **EEG** có độ phân giải thời gian cực tốt (mili-giây) nhưng không xác định chính xác vị trí tín hiệu trong não. Vì vậy, các nhà nghiên cứu thường kết hợp nhiều kỹ thuật (tam giác hoá phương pháp) để bù trừ điểm yếu của nhau.

2.2 Localization of function in the brain

Khái niệm cốt lõi

Localization of function is the theory that specific psychological functions are processed by specific, identifiable brain structures rather than the whole brain acting uniformly. Key structures: the **hippocampus** (forming new long-term declarative memories), the **amygdala** (processing fear and other emotions), the **hypothalamus** (homeostasis; controls the pituitary gland, linking the brain to the endocrine system), and the four lobes of the **cerebral cortex** – frontal (planning, decision-making, impulse control, Broca's area for speech production), parietal (touch, spatial processing), temporal (hearing, Wernicke's area for language comprehension), and occipital (vision).



Schematic side view of the brain (front on the left): lobes of the cerebral cortex plus key subcortical structures for localization of function.

Ví dụ mẫu · Worked example

Maguire et al. (2000) used MRI to compare the brains of 16 licensed London taxi drivers – who must memorize the labyrinthine layout of London streets to pass "The Knowledge" test – with matched non-taxi-driving controls. Taxi drivers had significantly **greater grey matter volume in the posterior hippocampus**, and this volume correlated *positively* with the number of years spent as a taxi driver, while the anterior hippocampus showed the reverse pattern. Because the posterior hippocampus supports spatial memory, this is strong evidence for **localization of function** – and, because the differences correlated with experience, also evidence that the brain can physically change with use (**neuroplasticity**).

Historically, one of the earliest and most famous pieces of evidence for localization came from the case of **Phineas Gage (1848)**, a railroad foreman who survived a large iron tamping rod being driven through his skull, destroying much of his left frontal lobe. According to contemporary accounts (notably by his physician, John Harlow), Gage's basic intellect, memory, and speech were preserved, but his personality reportedly changed markedly – from a reliable, even-tempered worker to (in Harlow's words) "fitful, irreverent," and poor at planning. The case is widely cited as early evidence that the frontal lobe is specifically involved in personality regulation, impulse control, and planning. Modern historians (e.g., Macmillan, 2000) caution that many popularized details of Gage's personality change were exaggerated or poorly documented over time, and that Gage reportedly held down skilled jobs later in life – a useful reminder that even famous, frequently-cited case studies must be evaluated critically rather than taken at face value.

Ví dụ mẫu · Worked example

Sperry's (1968) split-brain research studied patients who had undergone a **corpus callosotomy** (surgical severing of the corpus callosum, the main band of fibres connecting the two cerebral hemispheres) as a last-resort treatment for severe epilepsy. Because information presented to one visual field projects primarily to the opposite hemisphere, Sperry could present an image (e.g., an object name) exclusively to one hemisphere at a time. Patients could verbally name objects presented to the **right** visual field (processed by the left hemisphere, which in most people houses the primary language centres) but could not verbally name – yet could still correctly select with their left hand – objects presented only to the **left** visual field (right hemisphere), which typically lacks strong expressive language ability but shows relative strength in spatial tasks. This provided landmark evidence for **hemispheric lateralization**: the two hemispheres, though densely interconnected in an intact brain, are specialized for at least partly different functions, and can operate surprisingly independently when the connecting corpus callosum is severed.

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu Maguire và cộng sự (2000) cho thấy tài xế taxi London có **thể tích chất xám vùng hồi hải mã sau (posterior hippocampus)** lớn hơn nhóm đối chứng, và lớn hơn theo **số năm kinh nghiệm lái xe**. Ca bệnh **Phineas Gage** (thế kỷ 19) là bằng chứng lịch sử kinh điển cho định khu chức năng thuỳ trán (nhân cách, kiểm soát xung động), dù các nhà sử học hiện đại lưu ý nhiều chi tiết đã bị phóng đại qua thời gian. Nghiên cứu não tách đôi của **Sperry (1968)** trên bệnh nhân đã cắt thể chai (corpus callosum) cho thấy hai bán cầu não có **chuyên biệt hoá chức năng (lateralization)**: bán cầu trái thường phụ trách ngôn ngữ, bán cầu phải mạnh về xử lý không gian.

2.3 Historical case studies: Broca's and Wernicke's areas

Khái niệm cốt lõi

In 1861, the French physician **Paul Broca** described a patient nicknamed "Tan" (real name Louis Victor Leborgne), who could understand spoken language relatively normally but could produce almost no speech beyond the single repeated syllable "tan" (plus a handful of other words and sounds), despite otherwise apparently intact general intelligence and comprehension. A post-mortem examination carried out after the patient's death revealed a lesion in the posterior part of the **left frontal lobe** – a region now known as **Broca's area**. Broca argued that this specific region was responsible for the **production** of articulate speech, and that language was

controlled predominantly by the left hemisphere in most people, providing some of the earliest evidence for both **localization of function** and **left-hemisphere dominance for language**.
Thirteen years later, in 1874, the German physician **Carl Wernicke** described patients with damage to a different region – the **left temporal lobe**, now known as **Wernicke's area** – who showed the reverse profile: they could speak fluently and with grammatically well-formed sentences, but the content of their speech was largely meaningless or incoherent, and they also showed severe deficits in language **comprehension**, both spoken and written.
Together, Broca's and Wernicke's nineteenth-century case studies provided foundational evidence that distinct, specific language functions – production versus comprehension – are localized to different regions of the brain, both typically situated in the **left hemisphere** for the majority of people. This basic picture has since been corroborated by modern neuroimaging techniques and by **Sperry's (1968)** split-brain research (see Localization of function, above), which likewise found language to be predominantly left-lateralized.
A limitation worth noting for balanced evaluation: both Broca's and Wernicke's original conclusions rested on **single case studies**, using relatively crude nineteenth-century methods of localizing brain damage – essentially, identifying the lesion only through **post-mortem dissection**, without any of the precision offered by modern brain-imaging technology. Consequently, the exact boundaries of the lesions originally reported by Broca and Wernicke have since been questioned and refined by later reanalysis of the preserved brain specimens – a reminder that even foundational, frequently-cited findings, much like the case of **Phineas Gage** discussed elsewhere in this chapter, should be evaluated critically rather than simply accepted at face value.

Ví dụ mẫu · Worked example

Broca (1861) first encountered his patient, Louis Victor Leborgne, at the Bicêtre Hospital in Paris. Leborgne had been admitted years earlier and, by the time Broca examined him, had lost almost all capacity for expressive speech: whatever question he was asked, however simple or complex, his only reply – for years – was the single syllable "tan," typically repeated twice ("tan, tan"), sometimes accompanied by an oath or a handful of other sounds when he grew frustrated at being unable to communicate more fully. Despite this near-total loss of spoken output, Leborgne appeared to **understand** what was said to him: he could follow simple instructions, seemed to react appropriately to questions and events around him, and gave no obvious sign of general intellectual decline – distinguishing his condition sharply from a global disorder of intellect, and equally sharply from the profound *comprehension* deficits that Wernicke would describe in different patients over a decade later. Leborgne died in 1861, only days after Broca examined him, and Broca performed a post-mortem examination of his brain, discovering a substantial lesion in the posterior region of the left frontal lobe. Broca preserved Leborgne's brain (it survives today), and presented the case to the Société d'Anthropologie de Paris as evidence that the faculty of articulate spoken language could be linked to damage in one specific, identifiable region of one specific hemisphere, rather than being a general property of the brain as a whole. Broca went on to study additional patients with similar symptoms and broadly comparable lesions, but "Tan" remains the case most closely associated with the discovery of **Broca's area** and with the language disorder now known as **Broca's aphasia**: non-fluent, effortful, halting speech production alongside relatively preserved comprehension.

VN **GIẢI THÍCH TIẾNG VIỆT**

Năm 1861, bác sĩ người Pháp **Paul Broca** mô tả một bệnh nhân được đặt biệt danh "Tan" (tên thật là Louis Victor Leborgne), người có thể hiểu lời nói tương đối bình thường nhưng chỉ có

thể phát ra âm tiết "tan" lặp đi lặp lại (kèm một vài từ/âm khác) mỗi khi được hỏi, dù trí tuệ nhìn chung vẫn có vẻ bình thường. Sau khi bệnh nhân qua đời, khám nghiệm tử thi cho thấy một tổn thương ở phần sau của **thuỳ trán trái** – vùng này ngày nay được gọi là **vùng Broca (Broca's area)**. Broca cho rằng vùng này chịu trách nhiệm cho việc **tạo ra lời nói (production)**, và ngôn ngữ chủ yếu do bán cầu trái kiểm soát – đây là một trong những bằng chứng sớm nhất cho **định khu chức năng (localization of function)** và **ưu thế bán cầu trái đối với ngôn ngữ**.
Đến năm 1874, bác sĩ người Đức **Carl Wernicke** mô tả các bệnh nhân bị tổn thương ở một vùng khác – **thuỳ thái dương trái**, nay gọi là **vùng Wernicke (Wernicke's area)** – với biểu hiện ngược lại: họ nói trôi chảy, đúng ngữ pháp, nhưng nội dung lời nói phần lớn vô nghĩa, đồng thời gặp khó khăn nghiêm trọng trong việc **hiểu** ngôn ngữ, cả nói lẫn viết.
Hai nghiên cứu ca bệnh thế kỷ 19 này, kết hợp lại, là bằng chứng nền tảng cho thấy các chức năng ngôn ngữ khác nhau – tạo lời nói và hiểu ngôn ngữ – được định khu ở những vùng não khác nhau, thường đều nằm ở **bán cầu trái**. Phát hiện này sau đó được củng cố thêm bởi các kỹ thuật hình ảnh não hiện đại và bởi nghiên cứu não tách đôi của **Sperry (1968)** (đã đề cập ở phần Định khu chức năng não, phía trên).
Tuy nhiên, cả hai đều là **nghiên cứu ca đơn lẻ (single case study)**, dựa trên phương pháp xác định vị trí tổn thương khá thô sơ của thế kỷ 19 – chỉ thông qua khám nghiệm tử thi, không có độ chính xác của hình ảnh não hiện đại – nên ranh giới tổn thương được báo cáo ban đầu sau này đã bị tranh luận và điều chỉnh lại qua các phân tích lại trên mẫu não còn lưu giữ, tương tự trường hợp **Phineas Gage** đã đề cập ở phần khác của chương này: ngay cả những phát hiện nền tảng, được trích dẫn thường xuyên nhất, cũng cần được đánh giá một cách phê phán.

(!) Lỗi thường gặp: A classic IB exam confusion point: **Broca's aphasia** (from damage to Broca's area, in the frontal lobe) involves *non-fluent*, halting, effortful speech **production** alongside relatively preserved **comprehension** – the patient generally understands what is said to them but struggles to produce it. **Wernicke's aphasia** (from damage to Wernicke's area, in the temporal lobe) is the reverse pattern: speech remains *fluent* and grammatically well-formed in production, but is largely meaningless or incoherent in content, and **comprehension** of both spoken and written language is severely impaired. Do not mix these up – Broca's is fundamentally a **production** disorder with intact understanding, while Wernicke's is fundamentally a **comprehension** disorder with superficially fluent but largely empty speech.

2.4 Neuroplasticity

Neuroplasticity is the brain's capacity to physically reorganize – forming new synaptic connections, strengthening existing ones, or (rarely, in specific regions such as the hippocampus) generating new neurons (**neurogenesis**) – in response to learning, experience, or injury.

Ví dụ mẫu · Worked example

Draganski et al. (2004) scanned the brains of participants with no juggling experience, then taught them a three-ball juggling routine and re-scanned them three months later. Jugglers showed a significant **increase in grey matter** in the mid-temporal area (associated with visual motion processing) and the left posterior intraparietal sulcus (associated with hand–eye coordination), compared to a non-juggling control group. A further scan three months after participants *stopped* practicing showed grey matter had partially **decreased** again – demonstrating that structural neuroplasticity can occur rapidly with a new skill and is not necessarily permanent without continued practice.

Rosenzweig and Bennett (1972) raised rats in either an **enriched environment** (large cage, toys, other rats, novel objects rotated regularly) or an **impoverished environment** (small cage, isolated, no stimulation). Post-mortem analysis found rats from enriched environments had a significantly **thicker cerebral cortex** and more synaptic connections than rats from impoverished environments – classic animal evidence that a stimulating environment can drive measurable brain growth, i.e., neuroplasticity.

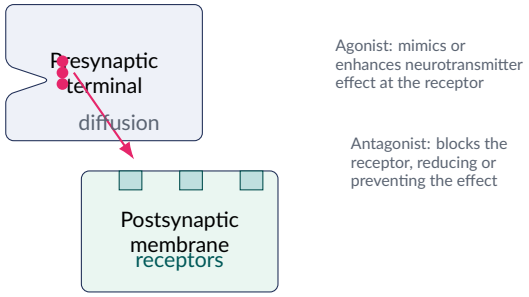
VN **GIẢI THÍCH TIẾNG VIỆT**

Tính mềm dẻo thần kinh (neuroplasticity) nghĩa là não bộ có thể **thay đổi cấu trúc vật lý** theo trải nghiệm/luyện tập – tăng chất xám khi học kỹ năng mới (Draganski và cộng sự, 2004) và giảm lại khi ngừng luyện tập. Nghiên cứu Rosenzweig and Bennett (1972) trên chuột chứng minh môi trường phong phú (enriched environment) làm vỏ não dày hơn so với môi trường nghèo nàn (impoverished environment).

2.5 Neurotransmitters

Khái niệm cốt lõi

Neurotransmitters are chemical messengers released across the synapse that either excite or inhibit the receiving neuron; a drug that increases a neurotransmitter's effect is an **agonist** (e.g., by mimicking the neurotransmitter or blocking its reuptake), one that decreases it is an **antagonist** (e.g., by blocking its receptor).



Schematic chemical synapse: neurotransmitter molecules released from the presynaptic terminal diffuse across the synaptic cleft and bind postsynaptic receptors. Agonist drugs enhance this signal; antagonist drugs block it.

Raleigh et al. (1991) manipulated serotonin levels in vervet monkeys (via diet and pharmacological agents) and found that **increased** serotonergic activity was associated with **higher dominance rank** and more affiliative behaviour, while **decreased** serotonergic activity was associated with **increased aggression** – classic evidence linking serotonin to social dominance and aggression regulation. Because the researchers directly manipulated serotonin (rather than simply observing a correlation), the study supports a **causal** role for serotonin, not merely an association.

VN **GIẢI THÍCH TIẾNG VIỆT**

Chất dẫn truyền thần kinh (neurotransmitter) truyền tín hiệu qua khe synapse; thuốc **chủ vận (agonist)** làm tăng hiệu ứng của chất dẫn truyền, thuốc **đối vận (antagonist)** làm giảm hiệu ứng đó. Raleigh và cộng sự (1991) **chủ động thao túng** nồng độ serotonin ở khỉ vervet (chứ không chỉ quan sát tương quan), cho thấy serotonin tăng liên quan đến **thứ bậc xã hội cao hơn** và ít gây hấn hơn – bằng chứng mạnh cho quan hệ **nhân quả**.

Olds and Milner (1954) implanted electrodes into specific subcortical regions (near the septal area and lateral hypothalamus) of rats and allowed the rats to electrically self-stimulate this region by pressing a lever. Rats pressed the lever at extraordinarily high rates – sometimes thousands of times per hour, and in preference to eating or drinking even when hungry or thirsty – demonstrating that direct electrical stimulation of this circuit functions as an exceptionally powerful reinforcer. This landmark study identified what is now understood as the brain's **dopaminergic reward pathway** (running from the ventral tegmental area to the nucleus accumbens and prefrontal cortex), which is activated by naturally reinforcing stimuli (food, social approval) and is also a key mechanism by which addictive drugs (which directly or indirectly increase dopamine transmission in this pathway) produce compulsive, difficult-to-control drug-seeking behaviour.

VN **GIẢI THÍCH TIẾNG VIỆT**

Olds and Milner (1954) cấy điện cực vào một vùng dưới vỏ não của chuột và cho chuột tự kích thích bằng cách nhấn cần gạt. Chuột nhấn cần gạt với tần suất cực cao, thậm chí **bỏ qua thức ăn/nước uống** dù đang đói/khát – xác định vùng này là một phần của **đường dẫn truyền phần thưởng dopaminergic (dopamine reward pathway)**, cơ chế sinh học then chốt đứng sau cả phần thưởng tự nhiên (thức ăn, được xã hội công nhận) lẫn hành vi nghiện chất kích thích.

2.6 Hormones

Khái niệm cốt lõi

Hormones are chemical messengers released by endocrine glands directly into the bloodstream – slower-acting but longer-lasting and more widespread than neurotransmitters, since they travel through the blood to reach receptors throughout the body rather than acting only across a single synapse.

Ví dụ mẫu · Worked example

Kosfeld et al. (2005) had participants play an economic "trust game" involving real monetary stakes, after receiving either intranasal **oxytocin** or a placebo. Participants who received oxytocin showed significantly **higher trust** (transferring larger sums of money to an anonymous trustee) than the placebo group, and this effect was specific to interpersonal/social risk (a control condition with purely random, non-social risk showed no oxytocin effect). This is strong evidence that the hormone oxytocin plays a causal role in promoting trust in humans.

VN **GIẢI THÍCH TIẾNG VIỆT**

Oxytocin: hormone liên quan đến **lòng tin** (Kosfeld và cộng sự, 2005) và gắn kết xã hội. Vì nghiên cứu này là thí nghiệm thật (có nhóm giả dược và phân ngẫu nhiên), kết quả cho phép kết luận **nhân quả**, không chỉ là tương quan.

2.7 Pheromones

Khái niệm cốt lõi

Pheromones are chemical signals released *outside* the body that can influence the physiology or behaviour of other members of the same species, often via olfaction, without necessarily being consciously detected as a smell.

Ví dụ mẫu · Worked example

Wedekind et al. (1995) – the "sweaty T-shirt study" – had men wear the same T-shirt for two nights, then had women smell the shirts and rate their pleasantness. Women preferred the odour of men whose **MHC (major histocompatibility complex) genes** were more *dissimilar* to their own – a pattern consistent with an evolved pheromonal preference that would produce offspring with a more diverse, robust immune system. Notably, this preference **reversed** among women taking oral contraceptives, who instead preferred MHC-*similar* odours, suggesting hormonal state can alter pheromone-influenced mate preference.

VN **GIẢI THÍCH TIẾNG VIỆT**

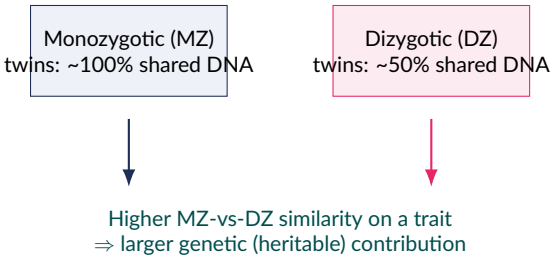
Pheromone: tín hiệu hoá học tiết ra ngoài cơ thể, ảnh hưởng đến hành vi đồng loại dù không nhất thiết được "ngửi thấy" một cách có ý thức – nghiên cứu áo thun đẫm mồ hôi của Wedekind và cộng sự (1995) cho thấy phụ nữ ưa thích mùi của nam giới có gen MHC **khác biệt** với mình, ngoại trừ khi đang dùng thuốc tránh thai (khi đó sở thích đảo ngược).

(!) Lỗi thường gặp: An fMRI or MRI study showing a brain-structure difference correlated with a behaviour (e.g., taxi drivers' hippocampi) does not, by itself, prove the brain structure *causes* the behaviour – correlational brain-imaging data cannot rule out reverse causality or a third variable. Only manipulative/experimental designs (like Kosfeld et al.'s randomized oxytocin administration) or longitudinal designs can strengthen a causal claim.

2.8 Genetics and behaviour

Khái niệm cốt lõi

Behaviour genetics studies how genes and environment jointly shape behaviour. **Twin studies** compare **monozygotic (MZ)** twins (share 100% of DNA) with **dizygotic (DZ)** twins (share ~50%, like ordinary siblings) to estimate **heritability** – the proportion of *variation in a trait within a studied population* attributable to genetic differences. A **gene–environment interaction** occurs when a genetic predisposition only manifests as a behavioural/clinical outcome in the presence of a particular environmental trigger.



Logic of the twin-study design: because MZ twins share (almost) all their DNA while DZ twins share about half, a trait that is more similar between MZ than DZ twins (assuming similar shared environments for both types) is inferred to have a substantial genetic contribution.

Bouchard, Lykken, McGue, Segal, and Tellegen (1990), the Minnesota Study of Twins Reared Apart, studied monozygotic twins who had been separated in infancy and raised in different family environments. IQ correlations between these separated MZ twins were still substantial (approximately $r = 0.75$), only slightly lower than for MZ twins raised together, and considerably higher than typical correlations for DZ twins – providing strong twin-study evidence for a significant genetic contribution to intelligence, even across very different rearing environments.

Ví dụ mẫu · Worked example

Caspi et al. (2003) followed a birth cohort of about 847 New Zealanders and genotyped them for the **5-HTT (serotonin transporter) gene**, which has a short (s) and a long (l) allele. Individuals carrying one or two copies of the *short* allele who also experienced multiple **stressful life events** between ages 21–26 showed significantly higher rates of depression and suicidality than long-allele homozygotes exposed to the same stressors. Crucially, among participants who experienced *few or no* stressful life events, genotype alone did *not* predict depression – demonstrating a genuine **gene** $\times$ **environment interaction** rather than a simple genetic or environmental main effect.

Weaver et al. (2004) showed a molecular mechanism for how environment can alter gene *expression* without changing the DNA sequence itself (**epigenetics**). Rat pups that received high levels of maternal licking and grooming in infancy showed different chemical **methylation** patterns on the promoter region of a gene (NR3C1) controlling glucocorticoid (stress-hormone) receptors in the hippocampus, compared to pups that received low levels of maternal care – and, as adults, high-licked pups showed calmer, less reactive stress responses. Cross-fostering pups (swapping them between high- and low-licking mothers at birth) showed the adult stress-response pattern followed the *rearing* mother, not the biological mother, confirming the effect was environmentally caused rather than simply inherited. This is a landmark demonstration that early experience can leave a lasting biological "signature" on gene expression.

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu song sinh của **Bouchard và cộng sự (1990)** trên các cặp song sinh cùng trứng (MZ) bị tách ra nuôi riêng cho thấy tương quan chỉ số IQ vẫn rất cao ($r \approx 0.75$) dù lớn lên ở môi trường khác nhau – bằng chứng mạnh cho **đóng góp di truyền** vào trí thông minh. Caspi và cộng sự (2003) cho thấy gen **5-HTT** không "tự nó" gây trầm cảm – chỉ những người mang alen **ngắn** VÀ trải qua **nhiều sự kiện căng thẳng** mới có nguy cơ trầm cảm cao hơn rõ rệt (**tương tác gen–môi trường**). Weaver và cộng sự (2004) còn cho thấy **biểu sinh học (epigenetics)**: cách mẹ chuột chăm sóc con có thể thay đổi cách một gen **biểu hiện** (methyl hoá) mà không thay đổi trình tự DNA – và khi tráo đổi chuột con giữa các mẹ, phản ứng stress khi trưởng thành đi theo mẹ **nuôi dưỡng** chứ không phải mẹ **sinh học**.

Ví dụ mẫu · Worked example

A researcher reports that MZ twins show a concordance rate of 48% for a particular disorder, while DZ twins show a concordance rate of 17%. Using the logic of the twin-study design, what can and cannot be concluded?

Can conclude: Because MZ twins (who share ~100% of their DNA) are much more similar (concordant) for the disorder than DZ twins (who share ~50%), genetic factors make a substantial contribution to risk for the disorder – assuming MZ and DZ twins experience similarly similar

environments (the "equal environments assumption"). **Cannot conclude:** that the disorder is *purely* genetic – since MZ concordance is well below 100%, environmental factors (or gene–environment interactions) must also play a substantial causal role; twin studies estimate the relative contribution of genetic *variation* within the studied population, not a fixed, universal "amount" of genetic causation for every individual case.

2.9 Adoption studies and modern gene-mapping methods

Khái niệm cốt lõi

Adoption studies offer a complementary way to disentangle genetic and environmental contributions to behaviour: they compare adopted children's similarity to their **biological** parents (with whom they share genes but typically not a rearing environment) against their similarity to their **adoptive** parents (with whom they share a rearing environment but not genes). A trait that correlates more strongly with biological than adoptive parents suggests a stronger genetic contribution; the reverse pattern suggests a stronger environmental contribution. Modern molecular genetics has moved beyond studying a single **candidate gene** (such as 5-HTT in Caspi et al., 2003) toward **genome-wide association studies (GWAS)**, which scan the entire genome of very large samples (often hundreds of thousands of people) for many small genetic variants statistically associated with a trait or disorder. GWAS research has generally found that complex behavioural traits (e.g., depression risk, intelligence) are **polygenic** – influenced by thousands of individual genetic variants, each contributing only a tiny effect, rather than by any single "gene for" a behaviour.

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu con nuôi (adoption studies) so sánh mức độ giống nhau giữa trẻ được nhận nuôi với **cha mẹ ruột** (chung gen, không chung môi trường nuôi dưỡng) và với **cha mẹ nuôi** (chung môi trường, không chung gen) để tách bạch ảnh hưởng di truyền và môi trường. Nghiên cứu di truyền hiện đại đã vượt ra khỏi việc chỉ xét **một gen ứng viên** (như 5-HTT) để chuyển sang **GWAS (genome-wide association study)** – quét toàn bộ hệ gen của hàng trăm nghìn người, cho thấy hầu hết hành vi phức tạp mang tính **đa gen (polygenic)**: hàng nghìn biến thể gen, mỗi biến thể chỉ đóng góp một phần rất nhỏ, chứ không có "một gen duy nhất" gây ra một hành vi.

(!) Lỗi thường gặp: Media reports of "scientists find the gene for X" almost always oversimplify modern behaviour genetics. GWAS evidence consistently shows that complex traits like intelligence, depression, or personality are **polygenic**, so no single gene is either necessary or sufficient to produce the trait – always be sceptical of single-gene explanations for complex behaviour.

2.10 Evolutionary explanations for behaviour

Khái niệm cốt lõi

An **evolutionary explanation** proposes that a behaviour exists in modern humans because it increased the **reproductive fitness** (survival and reproductive success) of ancestors who displayed it, and was therefore naturally selected for across many generations. Evolutionary psychologists often test such hypotheses using **cross-cultural comparison**: if a behaviour reflects a universal, evolved psychological mechanism (rather than one specific culture's norms),

it should appear broadly similarly across very different societies.

Ví dụ mẫu · Worked example

Buss (1989) surveyed over 10,000 people across 37 cultures on six continents about their mate preferences. Across nearly all cultures studied, women placed relatively greater value on a potential partner's financial resources and status, while men placed relatively greater value on youth and physical attractiveness (cues, Buss argued, to fertility) – while both sexes, across cultures, ranked kindness and intelligence highly. Buss interpreted this broad cross-cultural consistency as evidence for evolved, sex-differentiated mate-preference psychology shaped by the different reproductive challenges faced by ancestral men and women, rather than purely by local cultural norms (since the pattern recurred across societies with very different cultural values around gender).

VN **GIẢI THÍCH TIẾNG VIỆT**

Buss (1989) khảo sát hơn 10.000 người ở 37 nền văn hoá và tìm thấy một khuôn mẫu **lặp lại xuyên văn hoá**: phụ nữ coi trọng nguồn lực/tài chính hơn, nam giới coi trọng tuổi trẻ/ngoại hình hơn khi chọn bạn đời – được diễn giải là bằng chứng cho **tâm lý tiến hoá** định hình bởi thách thức sinh sản khác nhau giữa hai giới trong quá khứ tiến hoá, hơn là chỉ do chuẩn mực văn hoá địa phương.

(!) Lỗi thường gặp: Evolutionary explanations are often misused as "just-so stories" – plausible-sounding narratives invented after the fact with no independent test. A strong evolutionary argument (like Buss's) requires testable, falsifiable predictions (e.g., a specific cross-cultural pattern) that are then actually checked against data from multiple independent cultures, not simply an appealing story about what "would have helped ancestors survive."

2.11 Ethical considerations in biological research

Biological research raises two distinct sets of ethical issues. **Animal research** requires researchers to justify why a non-human animal model is necessary (often because a manipulation would be unethical in humans), to minimize suffering, and to weigh scientific benefit against the animal's welfare – **Harlow's (1958)** famous studies isolating infant rhesus monkeys and giving them a choice between a wire "mother" providing milk and a soft cloth "mother" providing no food (finding monkeys spent far more time clinging to the cloth mother, supporting the importance of "contact comfort" over mere feeding in attachment) are now widely criticized on ethical grounds for the substantial and lasting psychological distress inflicted on the monkeys, even though the findings were influential. **Human brain research** (e.g., fMRI, brain-lesion case studies) raises its own issues: informed consent must cover the (rare) possibility of incidental findings (e.g., discovering an unrelated brain abnormality during a scan), and researchers working with vulnerable clinical populations (e.g., patients with brain damage or psychiatric conditions) must take particular care that consent is genuinely voluntary and well understood.

VN **GIẢI THÍCH TIẾNG VIỆT**

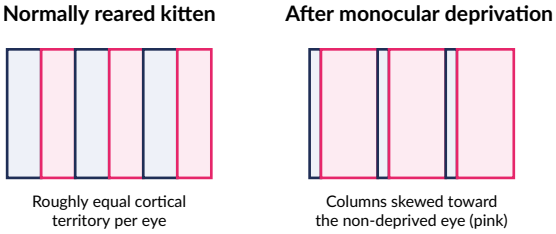
Nghiên cứu sinh học có hai nhóm vấn đề đạo đức: **nghiên cứu trên động vật** (như Harlow, 1958, cách ly khỉ con và cho chọn giữa "mẹ dây thép" có sữa và "mẹ vải mềm" không có sữa – phát hiện khỉ con bám vào mẹ vải nhiều hơn, cho thấy tầm quan trọng của "tiếp xúc an ủi" hơn là chỉ cho ăn – nhưng gây đau khổ tâm lý kéo dài cho khỉ con, nay bị phê phán mạnh về

đạo đức) và **nghiên cứu não người** (cần đồng ý có hiểu biết kể cả về khả năng phát hiện bất thường ngoài ý muốn khi chụp não, và cần thận trọng đặc biệt với nhóm dễ tổn thương như bệnh nhân tổn thương não).

2.12 Critical periods and sensory deprivation: evidence for neuroplasticity

Khái niệm cốt lõi

A **critical period** (sometimes called a **sensitive period**, a slightly softer term many researchers now prefer) is a limited window during development in which the brain is maximally responsive to specific kinds of experience, such that the presence or absence of expected input during that window can produce lasting, sometimes permanent, changes in neural organization and function. Once the window has closed, the same missing input typically produces a much smaller, or no, lasting effect – showing that **neuroplasticity is not constant across the lifespan**: the brain's very capacity to be reshaped by experience is itself governed by developmental timing.



Schematic ocular dominance columns in the visual cortex. In a normally reared kitten, roughly equal cortical territory responds to input from each eye (alternating navy/pink bands). After early monocular deprivation (sewing shut one eyelid during the critical period), cortical territory is dramatically skewed toward the non-deprived eye, and neurons that would normally respond to the deprived eye fail to develop normal responsiveness – a skew that persists even after the eyelid is reopened.

Ví dụ mẫu · Worked example

Hubel and Wiesel (1963, 1970) sewed shut one eyelid of newborn kittens – **monocular deprivation** – for the first few months of life, a period corresponding to the critical period for visual development, then used microelectrodes to record the responses of individual neurons in the kittens' visual cortex. In normally reared kittens, most cortical neurons responded to input from *either* eye (many were **binocular**); in the monocularly deprived kittens, cortical neurons that would ordinarily have responded to the deprived eye instead failed to develop normal responsiveness to it, and the **ocular dominance columns** – bands of visual-cortex tissue organized according to which eye's input drives them – were dramatically skewed toward the non-deprived eye. Even after the eyelid was later reopened, the deprived eye remained functionally, and essentially permanently, impaired. Critically, when Hubel and Wiesel carried out equivalent monocular deprivation in **adult** cats (whose visual system had already matured), no comparable lasting reorganization occurred – the adult visual cortex simply did not reorganize itself around the temporary deprivation the way the kitten cortex had. This shows that the effect of visual deprivation depended specifically on *when in development* it occurred, not merely on the deprivation itself. Hubel and Wiesel were jointly awarded the **Nobel Prize in Physiology or Medicine in 1981** for this body of work on the functional organization and developmental plasticity of the visual cortex. Notably, that same 1981 prize was shared with **Roger Sperry**,

whose split-brain research is discussed earlier in this chapter (Localization of function, above) – a reminder that many of the field's landmark, Nobel-recognized discoveries about localization and plasticity emerged from closely overlapping periods of biological psychology research.

Method used by Hubel and Wiesel	What it contributes to the argument
Single-unit micro-electrode recording	Shows precisely which eye (or both) drives each individual cortical neuron's response
Comparing newborn kittens with adult cats	Isolates developmental *timing* as the variable that determines whether deprivation causes lasting change
Reopening the deprived eyelid later	Tests whether the cortical reorganization is reversible once normal input resumes – it was not

Combining electrophysiological recording with a developmental (kitten vs adult) comparison and a later reopening test allowed Hubel and Wiesel to isolate timing, rather than deprivation itself, as the critical variable.

Hubel and Wiesel's findings are among the strongest *animal* evidence that neuroplasticity is graded rather than all-or-nothing: the very same missing sensory input produced a dramatic, essentially permanent cortical reorganization in kittens but no lasting effect in adult cats, showing that the brain's responsiveness to experience is itself constrained by a developmental timetable. A closely related logic underlies the human case study of **"Genie" (Curtiss, 1977)**, discussed in the Research Methodology unit: profound early linguistic deprivation left Genie with a lasting deficit in grammar acquisition despite years of subsequent intervention, consistent with the idea that a critical or sensitive period for first-language acquisition had likely already closed. Taken together with **Draganski et al.'s (2004)** juggling study and **Rosenzweig and Bennett's (1972)** enriched-environment research (see Neuroplasticity, above), the critical-period evidence shows that neuroplasticity is not a single, uniform property of the brain: some forms of plasticity (e.g., grey-matter change with practice) persist throughout life, while others (e.g., the basic wiring of the visual cortex to each eye) are largely restricted to an early developmental window.

At a mechanistic level, Hubel and Wiesel's findings are widely understood through the lens of **competitive, activity-dependent (Hebbian) plasticity**: during the critical period, connections from both eyes compete for cortical territory, and neurons that are more strongly and reliably activated tend to retain and strengthen their connections at the expense of less-active competitors (often summarized as "neurons that fire together, wire together"). When one eye is deprived, its connections simply cannot compete as effectively for cortical territory against the intact eye's active input, so the non-deprived eye's connections come to dominate the available cortical space. Researchers also distinguish a strict **critical period** (a hard cut-off, after which a given form of plasticity is essentially unavailable) from a more graded **sensitive period** (a window of heightened, but not absolute, responsiveness that fades gradually rather than closing sharply) – Hubel and Wiesel's visual-cortex findings are generally treated as closer to the strict "critical period" end of this spectrum, given how limited the recovery was even after the deprived eye was reopened.

Hubel and Wiesel's broader research programme also compared **monocular** deprivation (depriving only one eye, as described above) with **binocular** deprivation (depriving both eyes equally during the same critical period). Counterintuitively, binocular deprivation produced a *less* severe deficit in each individual eye's cortical representation than monocular deprivation did to the single deprived eye: because neither eye's connections had a competing, actively-firing rival to lose out to, many cortical neurons remained at least partially visually responsive, even though they failed to develop fully normal, sharply-tuned responses (such as normal orientation selectivity) to visual patterns. This comparison strengthens the case that the mechanism at work is genuinely **competitive** – it is the imbalance between two competing inputs, and not simply an overall lack of visual stimulation, that produces the most severe and lasting cortical reorganization.

Condition	Timing of deprivation	Outcome for the deprived eye
Kitten, monocular deprivation	During the critical period (first few months of life)	Ocular dominance columns skew permanently toward the non-deprived eye; lasting visual impairment
Kitten, eyelid reopened later	After the critical period has already caused reorganization	Impairment persists – reopening the eye does not reverse the cortical skew
Adult cat, monocular deprivation	After the critical period has closed	No lasting reorganization of ocular dominance columns

Hubel and Wiesel's design isolates developmental timing, rather than deprivation itself, as the variable that determines whether visual deprivation produces lasting cortical change.

Ví dụ mẫu · Worked example

Applying this logic: a child born with dense bilateral congenital cataracts (which block patterned visual input to both eyes) has the cataracts surgically removed either at 14 months of age or, in a comparison case, not until age 7. Based on the logic established by Hubel and Wiesel's kitten studies, which child would be predicted to develop more typical visual processing, and why? Because the visual cortex is thought to be maximally responsive to patterned input during an early critical/sensitive period, the child whose visual input is restored at 14 months – while that developmental window is still open – would be predicted to show substantially better visual outcomes than the child whose input is not restored until age 7, well after the critical period has likely closed, even though both children experienced the identical underlying deprivation. This illustrates why clinicians treat early detection and treatment of congenital sensory conditions as time-sensitive, not simply as problems to be corrected whenever convenient.

VN **GIẢI THÍCH TIẾNG VIỆT**

Giai đoạn nhạy cảm/then chốt (critical/sensitive period) là khoảng thời gian giới hạn trong quá trình phát triển khi não bộ phản ứng mạnh nhất với một số loại trải nghiệm nhất định – nếu thiếu trải nghiệm đó đúng lúc này, não có thể thay đổi cấu trúc và chức năng gần như **vĩnh viễn**, còn nếu xảy ra ngoài giai đoạn này thì hầu như không để lại hậu quả lâu dài. Nghiên cứu kinh điển của **Hubel and Wiesel (1963, 1970)** khâu kín một bên mí mắt mèo con ngay từ sơ sinh (monocular deprivation) trong vài tháng đầu đời – đúng giai đoạn nhạy cảm của thị giác – rồi dùng vi điện cực ghi lại phản ứng của từng neuron trong vỏ não thị giác. Kết quả: các **cột**

ưu thế mắt (ocular dominance columns) bị lệch hẳn về phía mắt **không** bị khâu, và mắt bị khâu bị suy giảm chức năng gần như vĩnh viễn dù sau đó được mở mí trở lại. Quan trọng hơn, khi thực hiện thao tác tương tự trên mèo **trưởng thành**, hiện tượng tái tổ chức vỏ não này **không** xảy ra – chứng minh rằng chính **thời điểm phát triển**, chứ không phải bản thân việc thiếu kích thích, mới là yếu tố quyết định. Hai ông được trao **giải Nobel Sinh lý học hoặc Y khoa năm 1981** cho công trình này. Logic tương tự cũng xuất hiện trong ca bệnh **"Genie" (Curtiss, 1977)**: việc bị tước đoạt ngôn ngữ nghiêm trọng thời thơ ấu để lại di chứng lâu dài về khả năng ngữ pháp, dù được can thiệp nhiều năm sau đó, phù hợp với giả thuyết rằng giai đoạn nhạy cảm cho việc học ngôn ngữ thứ nhất đã khép lại. Về mặt cơ chế, hiện tượng này thường được giải thích bằng nguyên lý **tính mềm dẻo phụ thuộc hoạt động mang tính cạnh tranh (competitive Hebbian plasticity)**: hai mắt "cạnh tranh" lãnh thổ trên vỏ não, kết nối nào hoạt động mạnh và đều đặn hơn sẽ lấn át kết nối yếu hơn – nên khi một mắt bị khâu, kết nối của mắt còn lại chiếm ưu thế trên vỏ não thị giác.

(!) Lỗi thường gặp: Because Hubel and Wiesel's design (deliberately depriving newborn animals of sensory input) could never be ethically replicated in humans, direct experimental evidence for human critical periods must instead come from naturally occurring cases (e.g., congenital sensory deprivation, or "Genie") or from clinical/quasi-experimental comparisons (e.g., children treated for congenital cataracts at different ages) – both of which are inherently less tightly controlled than an animal experiment, and cannot rule out every third variable (e.g., differences in overall health, additional cognitive impairments, or quality of later intervention) as cleanly as Hubel and Wiesel's original design. Findings from a different species (cats) also cannot be assumed to generalize precisely to the timing or severity of critical periods in humans without independent confirmation. Contemporary ethics boards would in any case be very unlikely to approve a study that deliberately deprives newborn animals of sensory input for months, which is a further reason this specific line of evidence cannot simply be repeated or extended today.

Study (this chapter)	Time-limited to a developmental window?	What changes
Hubel and Wiesel (1963, 1970)	Yes – restricted to the critical period for vision	Ocular dominance columns; permanent if deprivation occurs during the window
Draganski et al. (2004)	No – occurred in adult participants	Grey matter volume increases with practice, decreases with disuse
Rosenzweig and Bennett (1972)	No – environmental enrichment effects were not restricted to infancy in the design	Cortical thickness and synaptic connections

Neuroplasticity is graded rather than uniform: some forms of brain change (e.g., the wiring of ocular dominance columns) are essentially restricted to an early critical period, while others (e.g., grey-matter change with new motor skills or environmental enrichment) remain available well beyond infancy.

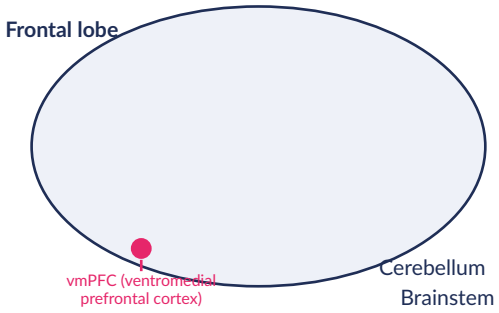
The practical importance of critical/sensitive-period research extends well beyond vision: similar logic underlies clinical guidance that congenital hearing loss should be identified and treated (e.g., with hearing aids or cochlear implants) as early in infancy as possible, and continues to inform debate over why learning an additional language in early childhood often leads to more native-like grammatical and phonological outcomes than learning the same language as an adult. In every case, the same core principle established by Hubel and Wiesel applies: the developing brain's responsiveness to a particular kind of input is not constant across the lifespan, so *when* an intervention or experience occurs can matter as much as *whether* it occurs at all.

Hubel and Wiesel's work also clarified an important conceptual point about sensory brain areas more generally: critical-period plasticity has since been documented, using comparable logic, in other sensory and motor systems beyond vision – for example, in the fine-tuning of the auditory system's ability to localize sounds, and in the calibration of motor coordination during early development. In each case, the underlying principle is the same one Hubel and Wiesel established: normal experience during a bounded developmental window is required for a neural system to develop and maintain its typical adult organization, and the absence of that experience produces effects that are difficult or impossible to fully reverse once the window has closed. This is one reason critical-period research is treated as foundational, rather than narrowly specific to vision, within developmental cognitive neuroscience.

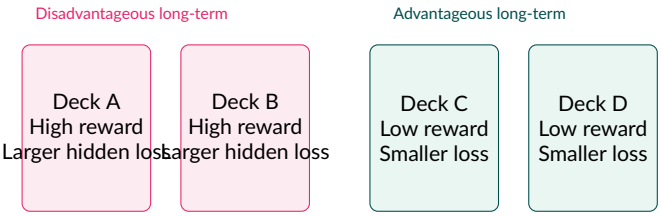
2.13 Localization and decision-making: the somatic marker hypothesis

Khái niệm cốt lõi

Antonio Damasio's **somatic marker hypothesis** proposes that emotional "gut feeling" signals – **somatic markers** – generated partly via the **ventromedial prefrontal cortex (vmPFC)** and linked to bodily arousal states (e.g., changes in heart rate or skin conductance), guide and speed up real-life decision-making by flagging options as good or bad *before* slow, conscious, deliberate reasoning has even finished running. On this view, emotion is not an obstacle to good decision-making but an integral, often unconscious, contributor to it – particularly under uncertainty, when explicitly calculating every possible cost and benefit of a real-life decision would be far too slow and complex.



Schematic location of the ventromedial prefrontal cortex (vmPFC): a region on the underside (ventral/orbital surface) of the frontal lobe, implicated by Bechara et al.'s (1994) lesion research in translating bodily/emotional signals into advantageous real-life decisions.



The Iowa Gambling Task (Bechara, Damasio, Damasio, and Anderson, 1994): two decks (A, B) yield high immediate rewards but larger hidden long-term losses; two decks (C, D) yield smaller immediate rewards but are advantageous over the long run. Healthy participants gradually learn to prefer decks C and D; patients with vmPFC damage persistently prefer decks A and B.

Ví dụ mẫu · Worked example

Bechara, Damasio, Damasio, and Anderson (1994) developed the **Iowa Gambling Task (IGT)**: participants repeatedly choose cards from four decks, typically over roughly 100 selections in total, without being told in advance how many decks are advantageous or what the exact reward/penalty structure is, so that any shift in preference must be learned from experience rather than from explicit instruction. Two decks yield high immediate rewards but carry larger hidden long-term losses (**disadvantageous** decks), while the other two yield smaller immediate rewards but are **advantageous** over the long run. Healthy control participants gradually learned to favour the advantageous decks over repeated trials, and, notably, began generating anticipatory **skin conductance responses (SCRs)** – a physiological measure of bodily arousal – *before* selecting a card from a disadvantageous deck, even before they could consciously explain why they were starting to avoid it. Patients with damage to the **ventromedial prefrontal cortex (vmPFC)** behaved very differently: they continued to choose persistently from the disadvantageous decks, despite often being able to consciously and correctly state which decks were risky, and they failed to generate the same anticipatory SCRs before a disadvantageous choice. In other words, the vmPFC patients' explicit, verbal knowledge of which decks were risky was intact, but this knowledge failed to translate into better real-world choices – consistent with the somatic marker hypothesis that vmPFC damage disrupts the automatic emotional signals that normally guide advantageous decision-making, dissociating what patients *know* from how they actually *choose*.

The IGT dissociation is theoretically important because it shows that **explicit, conscious knowledge and effective real-world decision-making are not the same thing** and can be damaged independently: vmPFC patients were not simply ignorant of the risks (many could describe them accurately), yet they could not use that knowledge to guide their behaviour without the accompanying implicit emotional/arousal signal. This complements localization findings elsewhere in this chapter: just as **Sperry's (1968)** split-brain patients showed that a hemisphere could act on information it could not verbally report, Bechara et al.'s patients show that a person can verbally report information they cannot fully act on – in each case, a specific type of brain damage separates two processes (verbal report versus guided action) that normally operate together. The findings also connect to the **dopaminergic reward pathway** described in **Olds and Milner (1954)**: whereas Olds and Milner showed that direct stimulation of subcortical reward circuitry can override even basic survival drives, Bechara et al.'s findings show how an intact **vmPFC** is needed to translate bodily/emotional arousal signals into advantageous choices, illustrating that real-life decision-making depends on communication between subcortical emotional/arousal systems and prefrontal regulation, not on the prefrontal cortex or "rational" deliberation acting alone.

Measure	Healthy controls	vmPFC-damaged patients
Deck preference over trials	Shift toward advantageous decks (C, D)	Persistent preference for disadvantageous decks (A, B)
Anticipatory SCR before a risky choice	Present, often before conscious awareness	Absent or markedly reduced
Explicit verbal knowledge of risk	Develops, often after the SCR appears	Can remain intact despite poor choices

Bechara et al.'s (1994) key dissociation: vmPFC damage can leave explicit verbal knowledge of risk relatively intact while abolishing the anticipatory bodily arousal that normally guides advantageous real-life choices.

Ví dụ mẫu · Worked example

Applying the somatic marker hypothesis: a patient with vmPFC damage scores in the normal range on standard IQ and memory tests, and can correctly tell an examiner, in words, that two of the four IGT decks are "the risky ones." Yet across repeated trials the patient continues to select cards mainly from those same risky decks, and shows no anticipatory rise in skin conductance before doing so. What does this pattern suggest about the relationship between emotion and decision-making, according to Damasio's hypothesis? The dissociation suggests that accurate, explicit, verbal knowledge of risk is not, by itself, sufficient to produce advantageous real-life decisions – an intact **implicit emotional/bodily signal** (the somatic marker), generated via the vmPFC, appears to be necessary to translate that knowledge into effective choice, so that damage restricted to the vmPFC can leave "knowing" and "choosing well" dissociated from one another.

The Iowa Gambling Task is often described as testing decision-making under **uncertainty** (where the exact probabilities and pay-offs of each deck are not told to participants and must be learned gradually from experience) rather than under **risk** (where probabilities are already known in advance) – a distinction relevant to many real-life financial, social, and health-related decisions, which typically must also be made without complete information. Clinically, the pattern first identified by Bechara et al. helps explain a puzzling real-world observation: people with vmPFC damage frequently retain normal general intelligence and can discuss risks and consequences sensibly in the abstract, yet go on to make poor financial decisions, maintain damaging relationships, or persist with self-defeating habits in daily life – a gap between abstract reasoning and lived decision-making that a purely "cognitive" account of decision-making struggles to explain, but that the somatic marker hypothesis addresses directly by locating the deficit in disrupted emotional guidance rather than in reasoning or knowledge itself.

The vmPFC does not act in isolation: it is anatomically and functionally connected to other emotion-related structures already introduced in this chapter, most notably the **amygdala** (see Localization of function, above), which is heavily implicated in processing fear and other emotional responses. Contemporary models of decision-making generally treat the somatic marker hypothesis as describing a distributed **network** – linking bodily arousal, amygdala-based emotional processing, and vmPFC-based integration and behavioural guidance – rather than a single isolated "decision centre" in the brain. This is consistent with the chapter's broader theme that localization of function coexists with extensive interconnection between structures: a specific structure (here, the vmPFC) can be identified as necessary for a particular function (translating emotional signals into advantageous choice) without that function belonging to that structure alone.

VN **GIẢI THÍCH TIẾNG VIỆT**

Giả thuyết "dấu hiệu cơ thể" (somatic marker hypothesis) của **Antonio Damasio** cho rằng những tín hiệu cảm xúc kiểu "linh cảm" (somatic marker), được tạo ra một phần thông qua **vỏ não trước trán bụng giữa (ventromedial prefrontal cortex – vmPFC)** và gắn với các trạng thái kích hoạt cơ thể (nhịp tim, độ dẫn điện da), giúp **định hướng và tăng tốc** việc ra quyết định trong đời sống thực – đặc biệt khi phải quyết định trong điều kiện không chắc chắn – bằng cách "gắn cờ" các lựa chọn là tốt hay xấu trước cả khi quá trình suy luận có ý thức hoàn tất. **Bechara, Damasio, Damasio, and Anderson (1994)** thiết kế **nhiệm vụ đánh bạc Iowa (Iowa Gambling Task)**: người tham gia chọn bài từ bốn bộ bài, trong đó hai bộ cho phần thưởng tức thời cao nhưng ẩn chứa khoản lỗ dài hạn lớn hơn (bất lợi), hai bộ cho phần thưởng thấp hơn nhưng có lợi về lâu dài. Người tham gia khỏe mạnh dần học cách tránh các bộ bài bất lợi, và bắt đầu xuất hiện **phản ứng độ dẫn điện da (skin conductance response – SCR)** mang tính **dự đoán trước** ngay cả khi họ chưa thể giải thích bằng lời lý do tránh né. Ngược lại, **bệnh nhân tổn thương vmPFC** vẫn tiếp tục chọn các bộ bài bất lợi một cách dai dẳng, dù nhiều người trong số họ vẫn có thể nói đúng bằng lời bộ bài nào rủi ro hơn, và không xuất hiện phản ứng SCR dự đoán trước đó – cho thấy tổn thương vmPFC làm gián đoạn tín hiệu cảm xúc tự động vốn dẫn dắt quyết định có lợi, tách rời điều bệnh nhân **biết** về mặt lý thuyết với điều họ thực sự **làm**. Nhiệm vụ này được xem là đo lường việc ra quyết định trong điều kiện **không chắc chắn (uncertainty)**, vì người tham gia không được biết trước xác suất hay cấu trúc phần thưởng/hình phạt của từng bộ bài – gần giống với nhiều quyết định thực tế trong đời sống (tài chính, xã hội, sức khoẻ), vốn cũng thường phải đưa ra khi thiếu thông tin đầy đủ.

(!) Lỗi thường gặp: Because damage confined specifically to the vmPFC is rare, studies like Bechara et al.'s necessarily rely on small clinical samples of patients whose lesions vary somewhat in exact location and extent, which limits how confidently the findings generalize to all decision-making or to all forms of brain damage. Skin conductance responses are also only an indirect, correlational marker of underlying emotional/arousal processing – an SCR shows that *some* bodily arousal process is occurring, but cannot, on its own, prove the precise causal mechanism Damasio proposes, and other cognitive deficits following vmPFC damage (e.g., in working memory or the ability to learn from reversed reward contingencies) remain part of an active scientific debate about exactly why vmPFC patients continue to choose disadvantageously. As with any lesion-based research, no two patients' injuries are perfectly identical in location or extent, which further complicates drawing firm conclusions about the vmPFC's precise contribution from any single sample of patients.

Because the somatic marker hypothesis assigns emotion an active, functional role in *good* decision-making, it also reframes how "rational" decision-making itself should be understood: rather than treating emotion purely as "noise" that a perfectly rational decision-maker would ideally eliminate, Damasio's research reframes emotion and cognition as normally interdependent systems, with the vmPFC positioned as a key hub connecting bodily/emotional state to prefrontal decision processes – a view that has shaped subsequent research across neuroscience and clinical psychology on why purely "logical" models of choice often fail to predict real human decision-making.

The general framework established by Bechara et al. – that disrupted or intact bodily/emotional signals help explain why some individuals persist with real-life choices that are disadvantageous despite conscious awareness of the risks – has since informed how researchers think about impaired decision-making in other contexts associated with prefrontal dysfunction, including addictive behaviour, even though the precise causal mechanisms in these populations remain an active area of ongoing research rather than settled fact. This underscores a recurring theme of this chapter: identifying *where* in the brain a process depends on (localization) is often only the first step toward explaining *why* a person behaves the way they do, since the same localized damage can produce very different real-world consequences depending on the individual and the decision context.

Method used by Bechara et al. (1994)	What it contributes to the argument
Lesion/case analysis	Identifies the vmPFC specifically as the damaged structure common to the affected patients
Behavioural choice data (deck selections)	Shows *what* participants actually chose, trial by trial, across the task
Skin conductance response (SCR)	Shows *when* an implicit emotional/arousal signal appeared, relative to conscious awareness and choice

Bechara et al.'s conclusions rest on triangulating three distinct sources of evidence – none of which, alone, would fully establish the somatic marker hypothesis.

2.14 Problem Bank

Bài tập luyện tập

A patient suffers damage to a region of the temporal lobe and can no longer understand spoken or written language, though their own speech remains fluent (if largely meaningless). This is most consistent with damage to:

(A) Broca's area, causing Broca's aphasia

(B) Wernicke's area, causing Wernicke's aphasia

(C) The occipital lobe, causing visual agnosia

(D) The hypothalamus, causing a homeostatic disorder

Lời giải chi tiết

Fluent but meaningless/incoherent speech combined with a loss of language **comprehension** is the textbook profile of **Wernicke's aphasia**, caused by damage to Wernicke's area in the temporal lobe (language comprehension). Broca's aphasia (A) instead produces halting, effortful speech *with* intact comprehension – the opposite pattern. **(B)**.

Bài tập luyện tập

In Draganski et al.'s (2004) juggling study, grey matter in the mid-temporal area and intraparietal sulcus increased after three months of juggling practice and then partially decreased three months after participants stopped practicing. This pattern of results provides the strongest evidence for:

(A) Localization of function only, with no evidence of plasticity

(B) Neuroplasticity, because structural brain change tracked the acquisition and later disuse of a skill

(C) A genetic predisposition toward juggling ability

(D) The role of pheromones in motor learning

Lời giải chi tiết

The key finding is that grey matter volume **changed in both directions** – increasing with new learning and decreasing again after practice stopped – which directly demonstrates the brain's capacity for structural, experience-dependent reorganization: **neuroplasticity**. This goes beyond simple localization (which would just say "region X is used for skill Y") because it shows the physical brain itself is not fixed. **(B)**.

Bài tập luyện tập

In Sperry's (1968) split-brain studies, a patient could correctly select an object with their left hand when its name was flashed only to the left visual field, but could not verbally name that object. What does this dissociation best demonstrate?

(A) The left hemisphere alone controls all language and motor function

(B) Each hemisphere can process information relatively independently once the corpus callosum is severed, with language typically lateralized to the left hemisphere

(C) The right hemisphere cannot process any visual information

(D) The patient had damage to the hippocampus

Lời giải chi tiết

The right hemisphere (which received the left-visual-field information) could direct the left hand to correctly identify the object, showing it processed the information – but could not generate a verbal name, consistent with language being predominantly localized in the left hemisphere. Because the two hemispheres could not share information (the connecting corpus callosum was cut), each hemisphere behaved as if it "did not know" what the other had seen – evidence for **hemispheric lateralization** and relatively independent processing after callosotomy. **(B)**.

Bài tập luyện tập

Raleigh et al. (1991) experimentally manipulated serotonin levels in vervet monkeys and observed changes in dominance and aggression. Why does this design support a stronger causal claim than a study simply correlating naturally occurring serotonin levels with aggression?

(A) Because the sample of monkeys was very large

(B) Because serotonin was deliberately manipulated by the researchers rather than merely measured, ruling out reverse causation and many third variables

(C) Because vervet monkeys are closely related to humans

(D) Because aggression is easy to operationalize

Lời giải chi tiết

When a researcher **actively manipulates** the proposed cause (serotonin levels, via diet/pharmacology) and then observes the effect (dominance/aggression), reverse causation (aggression causing serotonin changes) and many third variables are ruled out in a way that a purely correlational/observational design cannot achieve – this is the core logic of experimental over correlational causal inference. **(B)**.

Bài tập luyện tập

Kosfeld et al. (2005) found that participants given intranasal oxytocin transferred more money to a trustee in a social "trust game," but showed no such increase in a non-social random-risk control condition. Why is this control condition important?

(A) It shows oxytocin has no effect on behaviour at all

(B) It shows the oxytocin effect is specific to social/interpersonal trust rather than a general increase in risk-taking

(C) It proves oxytocin cures anxiety disorders

(D) It eliminates the need for a placebo group

Lời giải chi tiết

If oxytocin simply made people more willing to take *any* risk, the random (non-social) risk condition should also show an oxytocin effect – but it did not. Because the effect appeared *only* in the socially risky trust-game condition, the control condition isolates trust/social risk specifically as what oxytocin influences, rather than risk-taking generally. **(B)**.

Bài tập luyện tập

A twin study finds an MZ concordance rate of 40% and a DZ concordance rate of 35% for a disorder. What is the most defensible conclusion?

(A) The disorder is almost entirely genetic

(B) The disorder is almost entirely environmental, since MZ and DZ concordance are similar

(C) The relatively small MZ-DZ difference suggests a comparatively modest genetic contribution and a substantial role for non-shared environmental factors

(D) Twin studies cannot be used for this disorder

Lời giải chi tiết

A large MZ-vs-DZ gap suggests a strong genetic contribution; here the gap (40% vs 35%) is small, suggesting genes play a comparatively **modest** role relative to disorders with much larger MZ-DZ gaps, and that non-shared environmental factors (experiences that differ even between twins raised in the same family) likely account for much of the remaining risk. Neither extreme ("almost entirely genetic" or "almost entirely environmental due to similarity") is supported precisely by this modest gap. **(C)**.

Bài tập luyện tập

Buss (1989) found a broadly similar pattern of sex-differentiated mate preferences across 37 cultures. Why does this cross-cultural consistency strengthen an evolutionary explanation compared to a study conducted in only one country?

(A) It has a larger total sample only

(B) A consistent pattern across very different cultural contexts suggests a universal, evolved psychological mechanism rather than one culture's specific social norms

(C) Cross-cultural studies are always experiments

(D) It removes the need for operationalizing mate preference

Lời giải chi tiết

If a preference pattern were simply the product of one culture's particular values, it would not be expected to recur consistently across dramatically different societies with different economic systems, religions, and gender norms. Finding a similar pattern across 37 such different cultures is much more consistent with a universal, evolved psychological mechanism than with culture-specific learning alone. **(B)**.

Bài tập luyện tập

Weaver et al. (2004) found that adult stress reactivity in cross-fostered rats followed the rearing mother's licking/grooming behaviour rather than the biological mother's. This finding is most important because it demonstrates:

(A) That genes have no influence on behaviour at all

(B) That an early environmental experience altered gene expression (via methylation) independently of the biological/genetic relationship

(C) That rats and humans have identical stress systems

(D) That maternal licking is a pheromone

Lời giải chi tiết

The cross-fostering design specifically separates genetic relatedness (biological mother) from environmental rearing experience (rearing mother). Because adult stress reactivity tracked the *rearing* mother's behaviour, the study shows the early environment causally altered gene expression (via DNA methylation) rather than the outcome simply being inherited genetically – a clear demonstration of **epigenetics**. **(B)**.

Bài tập luyện tập

In Olds and Milner's (1954) study, rats with electrodes implanted near the septal area/lateral hypothalamus pressed a lever to self-stimulate that region thousands of times per hour, even forgoing food when hungry. This best demonstrates the existence of:

(A) A localized language centre

(B) A dopaminergic reward pathway that functions as an exceptionally powerful reinforcer of behaviour

(C) A pheromone-detection organ

(D) The corpus callosum's role in hemispheric communication

Lời giải chi tiết

The extraordinarily high, food-overriding rate of self-stimulation shows that direct activation of this circuit is an unusually powerful **reinforcer**, consistent with it being part of the brain's **dopaminergic reward pathway** – a mechanism also implicated in natural rewards and in addic-

tive drug use. **(B)**.

Bài tập luyện tập

Which brain-imaging technique would be most appropriate for a researcher who needs millisecond-by-millisecond timing of neural activity while a participant makes rapid decisions, and does not require precise localization of the source?

(A) Structural MRI
(B) PET
(C) EEG
(D) Post-mortem lesion analysis

Lời giải chi tiết

EEG offers excellent **temporal resolution** (millisecond timing) at the cost of poor spatial resolution, making it the appropriate choice when precise timing matters most and exact anatomical localization is not required – unlike fMRI/PET (better spatial, worse temporal resolution) or structural MRI (no activity information at all). **(C)**.

Bài tập luyện tập

Harlow's (1958) studies isolated infant rhesus monkeys and gave them a choice between a wire-mesh "mother" that dispensed milk and a soft cloth "mother" that dispensed no milk. Monkeys spent far more time clinging to the cloth mother. What is the most serious ethical criticism of this study?

(A) The sample size of monkeys was too small
(B) The study inflicted substantial and lasting psychological distress and social/maternal deprivation on the animals, which a modern ethics board would be very unlikely to approve
(C) Monkeys cannot show attachment behaviour
(D) The wire mother was not a valid operationalization

Lời giải chi tiết

Even though Harlow's studies produced influential findings about "contact comfort" in attachment, the procedure involved substantial, prolonged psychological distress from social and maternal deprivation in a highly social species capable of complex emotional suffering – an ethical cost that is now considered to far outweigh the scientific benefit by contemporary standards, and that a modern institutional ethics review would be very unlikely to approve. **(B)**.

Bài tập luyện tập

A genome-wide association study (GWAS) of depression risk identifies thousands of genetic variants, each contributing only a tiny individual effect. This finding best supports which conclusion?

(A) Depression is caused by a single dominant gene
(B) Depression risk is polygenic, influenced by many genetic variants of small individual effect rather than one "depression gene"
(C) Genetics play no role in depression
(D) Adoption studies are now obsolete

Lời giải chi tiết

GWAS findings for complex behavioural traits consistently show a **polygenic** architecture – many genetic variants, each of small effect, combine to influence overall risk – directly contradicting the idea of one single "gene for" depression, while still showing genetics matters (ruling out option C). **(B)**.

Bài tập luyện tập

In an adoption study, a behavioural trait correlates much more strongly between adopted children and their biological parents than between adopted children and their adoptive parents. What does this pattern suggest?

(A) The trait is entirely determined by the adoptive home environment

(B) The trait shows a comparatively strong genetic contribution, since similarity tracks genetic relatedness rather than shared rearing environment

(C) Adoption studies cannot detect genetic influence

(D) The trait is caused by prenatal environment only

Lời giải chi tiết

Because adopted children share genes (but not a rearing environment) with biological parents, and share a rearing environment (but not genes) with adoptive parents, stronger similarity to biological parents specifically implicates a **genetic** contribution to the trait, rather than the shared adoptive-home environment. **(B)**.

Bài tập luyện tập

SAQ-style: Outline the procedure and findings of one study investigating the effect of hormones on human behaviour.

Lời giải chi tiết

Kosfeld et al. (2005) investigated the effect of the hormone **oxytocin** on trust. Male participants played a computer-based investment "trust game" involving real money, after being given either intranasal oxytocin or a placebo spray. Those given oxytocin transferred significantly more money to an anonymous trustee than those given the placebo, showing they extended significantly more **trust**. A control condition with purely random (non-social) financial risk showed no difference between oxytocin and placebo groups, indicating the effect was specific to interpersonal trust rather than general risk-taking. The study supports a causal role for oxytocin in promoting trusting behaviour in social/economic interactions. Full credit outlines the IV (oxytocin vs placebo), the DV (amount transferred in the trust game), and the key finding (oxytocin → greater trust, specific to social risk).

Bài tập luyện tập

SAQ-style: Describe one technique used to study the brain in relation to behaviour, including one strength and one limitation.

Lời giải chi tiết

fMRI (functional magnetic resonance imaging) measures the BOLD (blood-oxygen-level-dependent) signal, an indirect index of neural activity based on the fact that more active brain regions require more oxygenated blood flow. **Strength:** fMRI offers relatively good spatial resolution (it can localize activity to specific brain structures fairly precisely) without requiring any invasive procedure or radioactive tracer, unlike PET, making it widely usable, including for repeated scanning of the same participants (e.g., as in Maguire et al.'s 2000 taxi driver study). **Limitation:** fMRI only measures blood flow as an indirect *proxy* for neural activity, with a lag of several seconds – it cannot show precisely which neurons fired or when, and correlational fMRI findings (activity in region X correlates with task Y) cannot on their own establish that region X *causes* the associated behaviour. Full credit accurately describes the technique and names one specific, accurate strength and one specific, accurate limitation.

Bài tập luyện tập

SAQ-style: Explain how twin studies are used to investigate the role of genetics in behaviour, using one relevant study.

Lời giải chi tiết

Twin studies compare the similarity (concordance, for categorical traits, or correlation, for continuous traits) between **monozygotic (MZ)** twins, who share close to 100% of their DNA, and **dizygotic (DZ)** twins, who share on average only about 50%, like ordinary siblings. If MZ twins are substantially more similar on a trait than DZ twins, this is taken as evidence that genetic factors contribute meaningfully to variation in that trait (assuming both twin types experience similarly similar environments – the "equal environments assumption"). **Bouchard, Lykken, McGue, Segal, and Tellegen (1990)**, in the Minnesota Study of Twins Reared Apart, found that IQ correlations between MZ twins separated in infancy and raised in different homes were still substantial (approximately $r = 0.75$), only slightly below MZ twins raised together, and clearly higher than typical DZ correlations – strong evidence for a significant genetic contribution to intelligence even across differing environments. Full credit explains the MZ-vs-DZ logic accurately and links it to a specific, accurately described study and finding.

Bài tập luyện tập

ERQ-style: Using one relevant study, discuss the interaction between genetic and environmental factors in human behaviour.

Lời giải chi tiết

Caspi et al. (2003) provides strong evidence for a **gene** $\times$ **environment interaction** in the development of depression. Researchers followed a New Zealand birth cohort and genotyped participants for the 5-HTT (serotonin transporter) gene, which comes in a short (s) and long (l) allele. Individuals carrying one or two short alleles who also experienced multiple stressful life events between ages 21 and 26 showed significantly elevated rates of depressive symptoms, diagnosed depression, and suicidality compared to long-allele homozygotes facing the same stressors. Crucially, genotype alone (in the absence of stressful events) did not predict later depression, and stressful events alone did not fully explain the pattern either – it was specifically the *combination* of the short allele *and* environmental adversity that predicted the outcome. This demonstrates that a simple "nature vs nurture" framing is inadequate: genetic predisposition can create a differential *sensitivity* to environmental stressors rather than di-

rectly causing a behaviour. This complements **Weaver et al.'s (2004)** epigenetic finding that early maternal care physically alters gene expression via DNA methylation, showing at a molecular level exactly how environment can "get under the skin" to change how genes function, without changing the DNA sequence itself. A full-credit answer names at least one study, correctly describes the interaction (not a simple additive effect), and explains why this supports a gene–environment interaction model rather than a purely genetic or purely environmental explanation.

Bài tập luyện tập

ERQ-style: Discuss the extent to which localization of function is supported by biological research.

Lời giải chi tiết

Localization of function – the theory that specific psychological functions map onto specific brain structures – is supported by converging evidence from multiple methods, though modern research also reveals important complications. **Case-study/lesion evidence**: the historical case of **Phineas Gage** (1848), whose reported personality change followed severe frontal-lobe damage, was early evidence linking the frontal lobe to personality and impulse control, although modern historians (Macmillan, 2000) note many details were exaggerated over time – a reminder to evaluate even classic case studies critically. **Brain-imaging evidence**: **Maguire et al. (2000)** found that London taxi drivers had significantly greater grey matter volume in the posterior hippocampus, correlated with years of driving experience, directly linking this structure to spatial memory. **Split-brain evidence**: **Sperry's (1968)** studies of patients following corpus callosotomy showed that information presented only to the right hemisphere could not be verbally named (supporting left-hemisphere language dominance) even though the right hemisphere could still direct a correct non-verbal (left-hand) response – demonstrating both localization (language predominantly left-lateralized) and relatively independent hemispheric processing. However, a complete picture must be qualified: the Maguire study is correlational and cannot alone prove the hippocampus *causes* superior spatial memory (reverse causality – people with naturally larger posterior hippocampi self-selecting into taxi driving – cannot be fully excluded, though the correlation with years of experience makes this less likely); and most complex behaviours (e.g., emotion, decision-making) rely on *networks* of interacting structures rather than a single "centre," meaning strict one-structure-one-function localization is often an oversimplification. A full-credit answer supports localization with at least two distinct, accurately described sources of evidence, and offers a genuine, specific limitation/qualification rather than simply restating the theory.

Bài tập luyện tập

Hubel and Wiesel performed monocular deprivation (sewing shut one eyelid) either on newborn kittens during the critical period for visual development, or on fully adult cats. What was the key difference in outcome between these two conditions?

(A) There was no difference; both showed identical, permanent reorganization of ocular dominance columns

(B) The newborn kittens showed dramatic, lasting reorganization of ocular dominance columns toward the non-deprived eye, while equivalent deprivation in adult cats produced no such lasting effect

(C) Only the adult cats showed lasting visual impairment, since their visual systems were more established

(D) Monocular deprivation had no effect on the visual cortex at any age

Lời giải chi tiết

Hubel and Wiesel's key finding was that the **same** manipulation (monocular deprivation) produced dramatically different outcomes depending on developmental timing: in newborn kittens (during the critical period), cortical neurons and ocular dominance columns reorganized permanently toward the non-deprived eye, but equivalent deprivation in adult cats – after the critical period had closed – produced no comparable lasting reorganization. This demonstrates that critical-period plasticity is time-limited, not a general property of the visual cortex at any age, and is consistent with a **competitive, activity-dependent** mechanism in which the non-deprived eye's connections can only dominate cortical territory while that competition is still developmentally "open." **(B)**.

Bài tập luyện tập

In Hubel and Wiesel's research, "ocular dominance columns" refer to:

(A) Regions of the retina responsible for colour vision

(B) Bands of visual-cortex tissue organized according to which eye's input predominantly drives them

(C) A structure in the hypothalamus that regulates the sleep-wake cycle

(D) The auditory equivalent of tonotopic maps

Lời giải chi tiết

Ocular dominance columns are bands of tissue within the visual cortex, each predominantly driven by input from one eye (or, in normal development, showing a mix of both). Hubel and Wiesel identified this organization using microelectrodes to record the responses of individual cortical neurons to visual stimulation of each eye separately, and found that after early monocular deprivation, this columnar organization became dramatically skewed toward the non-deprived eye, providing direct physiological evidence of critical-period plasticity in the visual cortex. **(B)**.

Bài tập luyện tập

In Bechara et al.'s (1994) Iowa Gambling Task research, patients with vmPFC damage could often correctly state, in words, which decks were risky, yet continued to choose from those same decks. This dissociation best demonstrates that:

(A) vmPFC damage abolishes all forms of memory and knowledge

(B) Explicit, conscious knowledge of risk is not, by itself, sufficient to guide advantageous real-life decision-making

(C) The Iowa Gambling Task cannot be used with clinical populations

(D) vmPFC patients are unable to speak coherently

Lời giải chi tiết

The vmPFC patients' intact *verbal* knowledge of which decks were risky, combined with their continued disadvantageous *choices*, shows that knowing the facts about risk is not sufficient on its own to produce good real-world decisions – an intact emotional/bodily "somatic marker" signal, disrupted by vmPFC damage, appears to be additionally necessary to translate knowledge into advantageous behaviour. This mirrors real-life cases in which people can articulate the risks of a decision perfectly well and yet still act against that stated knowledge, consistent with Damasio's broader claim that emotion is not incidental to good decision-making but a normal, functional part of it. **(B)**.

Bài tập luyện tập

In Bechara et al.'s (1994) Iowa Gambling Task study, why was the measurement of anticipatory skin conductance responses (SCRs) important to the researchers' argument?

(A) It showed that healthy participants began physiologically "flagging" disadvantageous decks before they could consciously explain why, supporting the idea of an implicit emotional signal guiding choice

(B) It proved that skin conductance has no relationship to decision-making

(C) It was used only to measure participants' general anxiety about the experiment

(D) It showed that vmPFC patients had more physiological arousal than healthy controls

Lời giải chi tiết

Healthy participants developed anticipatory SCRs before selecting from a disadvantageous deck *before* they could verbally explain their growing avoidance, showing that an implicit bodily/emotional signal preceded conscious awareness of the pattern – direct physiological support for the somatic marker hypothesis. vmPFC patients, by contrast, failed to generate this anticipatory SCR (ruling out option D, since it was healthy controls, not patients, who showed the heightened anticipatory response), which is central to explaining their impaired real-life choices despite otherwise intact reasoning. The SCR measure was crucial precisely because it gave the researchers an objective, physiological window onto an emotional process that participants themselves could not yet verbally report. **(A)**.

Bài tập luyện tập

SAQ-style: Explain, using one study, the concept of a critical or sensitive period in brain development.

Lời giải chi tiết

A **critical/sensitive period** is a limited developmental window during which the brain is maximally responsive to particular experiences, such that missing input during that window can cause lasting – sometimes permanent – changes in neural organization, while the same missing input outside the window produces little or no lasting effect. **Hubel and Wiesel (1963, 1970)** demonstrated this by sewing shut one eyelid of newborn kittens (monocular deprivation) for the first few months of life. Using microelectrodes, they found that cortical neurons which would normally respond to the deprived eye failed to develop normal responsiveness, and the **ocular dominance columns** became dramatically skewed toward the non-deprived eye – an impairment that persisted even after the eyelid was reopened. Critically, when the same monocular deprivation was performed on **adult** cats, no comparable lasting reorganization occurred, showing the effect depended on developmental timing rather than deprivation alone. Hubel and Wiesel received the 1981 Nobel Prize in Physiology or Medicine for this work, sharing it with Roger Sperry, whose split-brain research is also discussed in this chapter. Full credit accurately defines a critical/sensitive period and links it clearly to the procedure and finding of a specific, accurately described study.

Bài tập luyện tập

ERQ-style: Discuss how neuroimaging and lesion-based research have contributed to understanding decision-making in the brain.

Lời giải chi tiết

Neuroimaging and lesion-based research have jointly shaped the modern understanding that real-life decision-making, especially under uncertainty, depends on an interaction between emotional/bodily signals and prefrontal regulation, rather than on "cold," purely rational calculation alone. **Antonio Damasio's somatic marker hypothesis** proposes that emotional "gut feeling" signals – somatic markers, generated partly via the **ventromedial prefrontal cortex (vmPFC)** and linked to bodily arousal states – guide and speed up decision-making by flagging options as good or bad before conscious deliberation is complete. **Bechara, Damasio, Damasio, and Anderson (1994)** tested this using the **Iowa Gambling Task**, in which participants chose cards from two disadvantageous decks (high immediate reward, larger hidden long-term loss) and two advantageous decks (lower immediate reward, smaller long-term loss). Healthy participants gradually learned to favour the advantageous decks and began generating anticipatory **skin conductance responses (SCRs)** before selecting from a disadvantageous deck, even before they could consciously explain their avoidance. Patients with vmPFC damage, identified through lesion/case analysis, continued to choose disadvantageously despite often being able to state correctly which decks were risky, and failed to generate the same anticipatory SCRs – a dissociation between explicit knowledge and effective real-world choice that directly supports the somatic marker hypothesis and demonstrates the vmPFC's specific contribution to translating emotional signals into advantageous behaviour. This lesion-based logic parallels other localization evidence in this unit (e.g., Sperry's split-brain patients dissociating verbal report from action), reinforcing that damage to a specific structure can selectively impair one component of a complex process while leaving others intact. Because the vmPFC is anatomically connected to other emotion-related structures such as the amygdala, contemporary accounts generally treat these findings as evidence for a distributed decision-making **network** – linking bodily arousal, emotional processing, and prefrontal integration – rather than evidence for a single isolated "decision centre," which nuances, without undermining, the broader localization framework used elsewhere in this chapter. However, this research also

has genuine limitations. Because damage confined precisely to the vmPFC is rare, studies rely on small clinical samples with lesions that vary somewhat in exact location and extent, limiting how confidently findings generalize across all patients or decision-making contexts. SCRs are also only a correlational, indirect index of arousal – they cannot, alone, prove the exact causal mechanism Damasio proposes, and some of the same behavioural pattern could in principle also reflect other deficits (e.g., impaired learning from changing reward contingencies) rather than a lost emotional signal specifically. A full-credit answer should discuss at least one relevant study or theory (e.g., Damasio's hypothesis and the Iowa Gambling Task), explain what the evidence shows about the brain's contribution to decision-making, and offer a genuine limitation of the neuroimaging/lesion approach rather than merely describing the findings.

Bài tập luyện tập

Paul Broca's (1861) patient "Tan" (Louis Victor Leborgne) could understand spoken language relatively normally but could produce almost no speech beyond a single repeated syllable. A post-mortem examination after his death revealed a lesion in which region?

(A) The posterior part of the left frontal lobe, later known as Broca's area

(B) The left temporal lobe, later known as Wernicke's area

(C) The right parietal lobe

(D) The corpus callosum

Lời giải chi tiết

Broca's post-mortem examination of "Tan" (Louis Victor Leborgne) identified a lesion in the **posterior part of the left frontal lobe** – the region now known as **Broca's area** – which Broca argued was specifically responsible for the production of articulate speech, providing some of the earliest evidence for localization of function and left-hemisphere dominance for language. **(A)**.

Bài tập luyện tập

Patient X speaks fluently and with correct grammar, but the content of the speech is largely meaningless, and Patient X also struggles to understand both spoken and written language. Patient Y understands language normally but can only produce slow, halting, effortful speech. These two profiles are most consistent with, respectively:

(A) Wernicke's aphasia; Broca's aphasia

(B) Broca's aphasia; Wernicke's aphasia

(C) Broca's aphasia in both cases

(D) Wernicke's aphasia in both cases

Lời giải chi tiết

Fluent but meaningless speech combined with poor comprehension is the profile of **Wernicke's aphasia** (damage to Wernicke's area, in the temporal lobe, first described by Wernicke in 1874); intact comprehension combined with non-fluent, effortful speech production is the profile of **Broca's aphasia** (damage to Broca's area, in the frontal lobe, first described by Broca in 1861). These are reverse – and frequently confused – profiles. **(A)**.

Bài tập luyện tập

Both Broca's (1861) and Wernicke's (1874) foundational conclusions about language localization were based on single case studies, with brain damage identified only through nineteenth-century post-mortem dissection. Why should even influential findings like these still be evaluated critically?

(A) Because single case studies using relatively crude, pre-imaging methods of localizing damage may have their exact lesion boundaries and generalizability questioned or refined by later reanalysis

(B) Because Broca and Wernicke were not qualified physicians

(C) Because language cannot be studied using case studies

(D) Because their patients did not actually have any brain damage

Lời giải chi tiết

A single case study can be highly influential and still have genuine limitations: with only one (or a few) patients, and with lesion location established only through post-mortem dissection rather than the precision offered by modern brain-imaging technology, the exact boundaries of the reported damage are harder to pin down and generalizability to all patients is limited. This is exactly why later reanalysis of the preserved Broca and Wernicke brain specimens has questioned and refined some of the original claims – echoing the similar critical re-evaluation of the Phineas Gage case discussed elsewhere in this chapter. **(A)**.

Bài tập luyện tập

SAQ-style: Outline the contribution of Broca's and Wernicke's historical case studies to the theory of localization of function.

Lời giải chi tiết

Paul Broca (1861) studied a patient nicknamed "Tan" (real name Louis Victor Leborgne), who could understand spoken language but could only produce the single repeated syllable "tan" in response to any question, despite otherwise apparently normal intelligence. A post-mortem examination revealed a lesion in the posterior part of the left frontal lobe, now called **Broca's area**, leading Broca to conclude that this region controls the **production** of speech. **Carl Wernicke (1874)** later described patients with damage to a different region, the left temporal lobe (now called **Wernicke's area**), who spoke fluently but largely meaninglessly and who showed severe deficits in language **comprehension** – the reverse profile from Broca's patient. Together, these two case studies provided foundational evidence for **localization of function**: they showed that distinct language functions (production versus comprehension) are controlled by separate, identifiable brain regions, both typically situated in the left hemisphere. This double dissociation between production and comprehension deficits, each mapped to a different lesion site, remains one of the earliest and clearest demonstrations that specific psychological functions can be traced to specific brain structures rather than the brain acting as a uniform whole. Full credit outlines both case studies, their key symptoms, and the localization conclusion drawn from each.

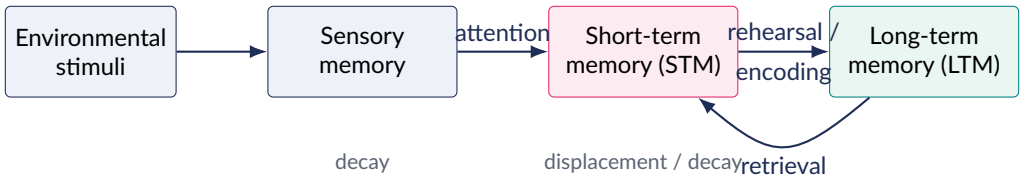
The Cognitive Approach to Behaviour

Mục tiêu Unit: Các mô hình trí nhớ (đa kho lưu trữ, trí nhớ làm việc, mức độ xử lý); lý thuyết sơ đồ nhận thức (schema); tư duy và ra quyết định (heuristic, lý thuyết xử lý kép); độ tin cậy của trí nhớ; mối quan hệ giữa cảm xúc và nhận thức; và ảnh hưởng của công nghệ số lên các quá trình nhận thức.

3.1 Models of memory: the multi-store model

Khái niệm cốt lõi

Atkinson and Shiffrin's (1968) multi-store model proposes that information flows through three separate, structurally distinct stores: a very brief, high-capacity **sensory memory** (retaining an almost complete but rapidly fading trace of incoming sensory information); a limited-capacity **short-term memory (STM)**, in which information is lost within seconds unless actively rehearsed; and a **long-term memory (LTM)** of relatively unlimited capacity and duration, reached primarily through rehearsal. Each store is proposed to differ in **capacity** (how much information it can hold), **duration** (how long information persists), and **encoding** (the format in which information is stored – STM favours acoustic encoding, LTM favours semantic/meaning-based encoding).



Atkinson and Shiffrin's (1968) multi-store model of memory.

Ví dụ mẫu · Worked example

Sperling (1960) briefly flashed a 3×3 grid of letters to participants for just 50 milliseconds, then either asked them to recall the *entire* grid ("whole report") or, immediately after the flash, played a high, medium, or low tone cueing them to recall only *one specific row* ("partial report"). Under whole report, participants recalled only about 4–5 letters on average, but under partial report, participants recalled almost the entire cued row correctly, regardless of which row was cued, implying that – for a very brief instant after the flash – almost the entire 9-letter grid had actually been available in an extremely short-lived **sensory (iconic) memory** store that decayed within roughly half a second, well before a participant attempting "whole report" could name every letter. This provided direct experimental evidence for the very first stage of Atkinson and Shiffrin's multi-store model.

Peterson and Peterson (1959) tested the duration of unrehearsed short-term memory using consonant trigrams (e.g., "XJR"): participants were shown a trigram, then immediately asked to count backward by threes from a given number (to prevent rehearsal) for a variable retention interval before recalling the trigram. Recall accuracy fell from nearly 90% at a 3-second delay to below 10% after just 18 seconds, showing that STM information decays very rapidly (in roughly 15–20 seconds) without active rehearsal. **Miller (1956)** separately proposed that STM's *capacity* is limited to about "seven, plus or minus two" meaningful units, or **chunks** – and that recoding information into larger, more meaningful chunks (e.g., remembering "IBM-FBI-CIA" as three familiar three-letter chunks rather than nine separate letters) can effectively increase how much can be held in STM at once.

Ví dụ mẫu · Worked example

Baddeley (1966) tested encoding format in STM versus LTM by giving participants word lists that were either **acoustically similar** (e.g., man, cap, cat, map), **acoustically dissimilar**, **semantically similar** (e.g., large, big, huge, wide), or **semantically dissimilar**, then tested recall either immediately (an STM measure) or after a delay (an LTM measure). Immediate recall was significantly *worse* for acoustically similar lists (letters/words that sound alike were confused), but semantic similarity had little effect on immediate recall – suggesting STM primarily relies on **acoustic encoding**. After a delay, the pattern reversed: semantically similar lists produced significantly worse recall (concepts with similar meaning were confused), while acoustic similarity had little lasting effect – suggesting LTM primarily relies on **semantic encoding**. This dissociation is strong evidence that STM and LTM are functionally and not merely quantitatively different stores, as the multi-store model proposes.

VN **GIẢI THÍCH TIẾNG VIỆT**

Mô hình đa kho lưu trữ (Atkinson and Shiffrin, 1968): thông tin đi từ **trí nhớ cảm giác** (rất ngắn, gần như đầy đủ – được Sperling 1960 chứng minh bằng kỹ thuật "báo cáo một phần") → **trí nhớ ngắn hạn** (dung lượng giới hạn khoảng 7 ± 2 đơn vị theo Miller 1956, thời lượng chỉ khoảng 15–20 giây nếu không nhắc lại theo Peterson and Peterson 1959, mã hoá chủ yếu theo **âm thanh**) → **trí nhớ dài hạn** (mã hoá chủ yếu theo **ý nghĩa**, theo thí nghiệm của Baddeley 1966).

3.2 Selective attention: the cocktail party effect

Khái niệm cốt lõi

Selective attention is the cognitive process of focusing mental/processing resources on one particular stream of information – the **attended channel** – while filtering out, or substantially reducing the processing given to, other, simultaneously present, competing streams of information – the **unattended channel(s)**. Selective attention is not simply a passive limitation of the senses; it is an active, moment-to-moment process determining which of many available inputs will be processed in depth. This is precisely the role attention already plays earlier in this chapter's **multi-store model** (Atkinson and Shiffrin, 1968): of the vast amount of information momentarily available in **sensory memory**, only the portion that receives **attention** is passed on to short-term memory for further processing, while the rest simply decays and is lost. Classic research on selective attention asked a more specific question about this filtering process: when two messages compete for attention at the same time, is the unattended message blocked completely, or does some information from it still get through?

Ví dụ mẫu · Worked example

Cherry (1953) investigated this question using a **dichotic listening** procedure. Participants wore headphones playing two different spoken messages **simultaneously**, one message to each ear, and were instructed to **shadow** – that is, to repeat aloud, in real time, word for word – the message played into one ear (the **attended channel**), while at the same time ignoring the message played into the other ear (the **unattended channel**). Because shadowing demands continuous, effortful, real-time verbal output, it forced participants to devote almost all of their available attention to the attended message, leaving the unattended message with very little spare processing capacity. Cherry found that participants were generally able to shadow the attended message reasonably accurately. When questioned afterward about the unattended message, however, a striking pattern emerged: participants **could** report only very basic **physical**, sensory-level features of the unattended message – for example, whether the unattended voice had been male or female, or whether the unattended channel had changed partway through from ordinary speech into a continuous pure tone – but they **could not** report anything about its **content**: they could not say which language it had been spoken in, could not recall any specific words from it, and often failed to notice even quite large changes to its content, such as the message switching languages or being played in reverse. This pattern suggested that, under full selective attention, the unattended channel is registered only at a shallow, **physical** level – its meaning is not analysed.

However, Cherry (and later researchers repeating and extending his procedure) also documented a striking exception to this otherwise near-total block: listeners frequently **did** notice their own name if it was spoken in the unattended channel, even though they could recall nothing else at all from that channel. This became informally known as the **"cocktail party effect"** – the everyday experience of instantly noticing your own name spoken somewhere across a noisy, crowded room, even while you are deeply absorbed in a completely different conversation of your own. Because a person's own name is an unusually meaningful and personally salient stimulus, its ability to break through an otherwise strong block on the unattended channel implied that the filtering of unattended information cannot be a simple, complete, all-or-nothing process; some meaningful analysis of the unattended channel's content must be occurring, at least for certain especially significant stimuli, even while the listener remains subjectively unaware of the rest of that channel's content.

This own-name exception directly motivated **Treisman's (1964) attenuation model** of attention, which proposed that the unattended channel is not switched off or completely blocked at all, but is instead merely **turned down**, or **attenuated**, in strength and clarity relative to the attended channel – much like turning down, rather than muting, the volume on a second radio playing in the background. Because the unattended message is only weakened rather than eliminated, especially significant, meaningful, or highly familiar stimuli embedded within it – such as one's own name, or other very familiar, high-priority words – can still cross the threshold needed for recognition, and so occasionally break through into conscious awareness, even though the great majority of unattended content, being both weakened *and* unimportant to the listener, is never recognized, processed for meaning, or later recalled at all.

GIẢI THÍCH TIẾNG VIỆT

VN

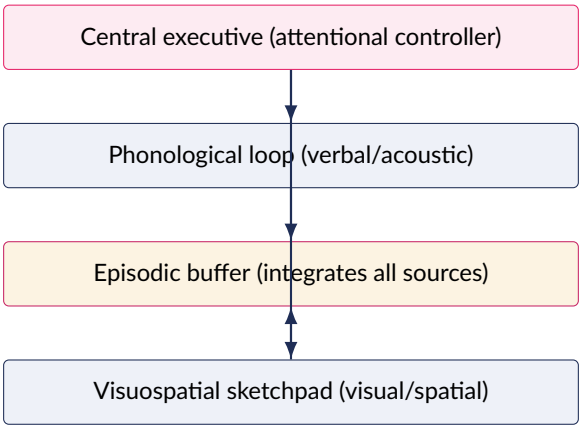
Chú ý chọn lọc (selective attention) là quá trình nhận thức tập trung nguồn lực xử lý vào một luồng thông tin (**kênh được chú ý**), đồng thời lọc bỏ hoặc giảm bớt việc xử lý các luồng thông tin cạnh tranh khác đang diễn ra cùng lúc (**kênh không được chú ý**). Đây chính là vai trò của "sự chú ý" trong mô hình đa kho lưu trữ (Atkinson and Shiffrin, 1968): chỉ thông tin nào được chú ý mới đi được từ trí nhớ cảm giác sang trí nhớ ngắn hạn, phần còn lại sẽ phai nhạt và mất đi.

Cherry (1953) dùng kỹ thuật **nghe phân đôi (dichotic listening)**: người tham gia đeo tai nghe, mỗi bên tai phát một thông điệp lời nói khác nhau **cùng lúc**, và được yêu cầu **"shadow"** (lặp lại thành tiếng ngay lập tức, theo thời gian thực) thông điệp ở một bên tai (kênh được chú ý), trong khi phớt lờ hoàn toàn bên tai còn lại (kênh không được chú ý). Kết quả: người tham gia chỉ có thể báo cáo các đặc điểm **vật lý** đơn giản của kênh không được chú ý (ví dụ: giọng nam hay nữ, hoặc giọng nói có chuyển thành một âm thanh đơn điệu hay không), nhưng **không thể** báo cáo về **nội dung** của nó (ví dụ: ngôn ngữ được nói, hay các từ cụ thể nào đã được nói) – cho thấy dưới điều kiện chú ý chọn lọc hoàn toàn, kênh không được chú ý chỉ được xử lý ở mức **nông, mang tính vật lý**, chứ không được phân tích về mặt ý nghĩa.
Tuy nhiên, Cherry và các nhà nghiên cứu sau này cũng ghi nhận một ngoại lệ nổi bật, thường được gọi là **"hiệu ứng bữa tiệc cocktail" (cocktail party effect)**: người nghe thường xuyên **nhận ra tên riêng của chính mình** nếu tên đó được nhắc đến ở kênh không được chú ý, dù họ hoàn toàn không nhớ được bất kỳ nội dung nào khác từ kênh đó. Điều này cho thấy việc "lọc bỏ" thông tin không phải là một quá trình chặn hoàn toàn, tất-cả-hoặc-không-gì. Phát hiện này đã trực tiếp thúc đẩy **mô hình suy giảm (attenuation model)** của **Treisman (1964)**: kênh không được chú ý không hề bị chặn hoàn toàn, mà chỉ bị **giảm cường độ (suy giảm/attenuated)**, giống như vặn nhỏ (chứ không tắt hẳn) âm lượng của một chiếc radio thứ hai đang phát ở phía sau – vì vậy những kích thích đặc biệt có ý nghĩa (như tên riêng của một người) vẫn có thể "vượt qua" ngưỡng nhận diện và thỉnh thoảng được nhận ra, dù phần lớn nội dung không được chú ý – vừa bị suy yếu vừa không quan trọng – vẫn sẽ bị mất hoàn toàn.

(!) Lỗi thường gặp: Do not conclude from the "cocktail party effect" that unattended information is fully or consciously processed for meaning. Cherry's (1953) participants recalled only their own name (or other highly salient, over-learned stimuli) from the unattended channel – not its general topic, its content, or any other specific words – and most people are not even consciously aware their name has been spoken until they are specifically asked about it afterward. The own-name effect is best understood as narrow evidence that filtering is not perfectly complete, and that some analysis of meaning can reach even the unattended channel for especially significant stimuli (exactly as Treisman's 1964 attenuation model proposes) – it is *not* evidence that selective attention normally permits full semantic processing of everything present in an unattended message. For the overwhelming majority of unattended content, in Cherry's studies as in everyday life, processing remains shallow and physical, and the content itself is never consciously recognised or recalled at all.

3.3 The working memory model

Baddeley and Hitch (1974) refined the single "short-term memory" box into a **working memory model** with multiple active components operating in parallel: the **central executive** (an attentional controller of very limited capacity, allocating processing resources to two "slave systems" and coordinating tasks), the **phonological loop** (holds verbal/acoustic information briefly, itself divided into a passive **phonological store** and an active **articulatory rehearsal process** that refreshes the trace, similar to sub-vocal repetition), the **visuospatial sketchpad** (holds visual and spatial information, e.g., for mentally navigating a route or manipulating an image), and (added later, Baddeley 2000) the **episodic buffer** (a limited-capacity system that integrates information from the phonological loop, the visuospatial sketchpad, and long-term memory into a single, coherent, temporary multi-modal episodic representation).



Baddeley and Hitch's (1974) working memory model, with the episodic buffer (Baddeley, 2000) integrating the phonological loop, visuospatial sketchpad, and long-term memory.

Ví dụ mẫu · Worked example

Scoville and Milner (1957) reported the case of patient **H.M.**, who underwent bilateral removal of the medial temporal lobes (including most of the hippocampus) to control severe epilepsy. Afterwards, H.M. developed dense **anterograde amnesia**: he could not form new explicit/declarative long-term memories (e.g., he could not recall having met a doctor moments after that doctor left the room). Remarkably, his short-term/working memory remained largely intact (he could hold a normal conversation), and his **procedural memory** was also intact – he improved at a mirror-tracing motor task across repeated sessions despite having no conscious memory of ever having practiced it before. This case study provided crucial evidence that the hippocampus is necessary specifically for *consolidating* new declarative memories into long-term storage (not for holding information briefly in working memory, nor for procedural learning), and that declarative and procedural memory are dissociable systems relying on different neural structures.

GIẢI THÍCH TIẾNG VIỆT VN

Mô hình trí nhớ làm việc (Baddeley and Hitch, 1974) mở rộng "trí nhớ ngắn hạn" thành nhiều thành phần hoạt động song song: **trung tâm điều hành (central executive)**, **vòng lặp âm vị (phonological loop)**, **bảng phác thảo thị giác-không gian (visuospatial sketchpad)**, và **bộ đệm tình tiết (episodic buffer)**. Ca bệnh H.M. (Scoville and Milner, 1957) chứng minh **hồi hải mã (hippocampus)** cần thiết để "ghi" trí nhớ tường thuật mới vào trí nhớ dài hạn, nhưng không cần thiết cho trí nhớ làm việc hay trí nhớ thủ tục – bằng chứng cho thấy đây là các hệ thống trí nhớ tách biệt.

(!) Lỗi thường gặp: Do not describe the working memory model as simply "a more detailed version of the same STM box." A key theoretical advance is that its components can operate **simultaneously** and largely **independently** (e.g., you can hold a visual image in the visuospatial sketchpad while separately rehearsing a phone number in the phonological loop), which the original unitary STM concept could not explain – this is supported by dual-task studies showing that combining two verbal tasks impairs performance much more than combining one verbal and one visual task.

3.4 Levels of processing

Khái niệm cốt lõi

Craik and Lockhart (1972) proposed an alternative to the multi-store model's separate "boxes": the **levels of processing** framework argues that how well information is remembered depends not on which store it reaches, but on the *depth* to which it is processed at encoding. **Shallow/structural processing** (e.g., judging whether a word is in upper or lower case) produces a weak, short-lived memory trace; **phonemic/acoustic processing** (e.g., judging whether a word rhymes with another) produces an intermediate trace; and **deep/semantic processing** (e.g., judging whether a word fits meaningfully into a sentence) produces a strong, durable memory trace, because it involves more elaborate, meaningful connections to existing knowledge.

Ví dụ mẫu · Worked example

Craik and Tulving (1975) gave participants a list of words, each accompanied by one of three types of question: a **structural** question ("Is the word in capital letters?"), a **phonemic** question ("Does the word rhyme with ____?"), or a **semantic** question ("Does the word fit into the sentence ____?"). Participants believed they were completing a simple perception/reaction-time task and did not know their memory would later be tested (an **incidental learning** design, ruling out differences in conscious rehearsal effort as an explanation). A surprise recognition test showed recall was substantially higher for words processed semantically than phonemically, and higher for phonemically than structurally processed words – direct experimental support for the levels-of-processing prediction that *depth* of encoding, not simply which "store" is used, determines how well information is remembered.

VN **GIẢI THÍCH TIẾNG VIỆT**

Lý thuyết **mức độ xử lý (levels of processing)** của Craik and Lockhart (1972) cho rằng trí nhớ tốt hay xấu phụ thuộc vào **độ sâu xử lý** khi mã hoá, chứ không phải "kho lưu trữ" nào được dùng. Craik and Tulving (1975) chứng minh bằng thực nghiệm: xử lý theo **ý nghĩa (ngữ nghĩa)** cho trí nhớ tốt nhất, xử lý theo **âm thanh** ở mức trung bình, xử lý theo **hình thức bên ngoài** (chữ hoa/thường) cho trí nhớ kém nhất – dù người tham gia không hề biết trước rằng trí nhớ của họ sẽ được kiểm tra.

3.5 Schema theory

Khái niệm cốt lõi

A **schema** is an organized mental framework of prior knowledge and expectations about the world (e.g., about objects, events, social roles) that helps process new information efficiently, but can also **distort** memory to fit existing expectations – memory is **reconstructive**, not a literal recording.

Ví dụ mẫu · Worked example

Bartlett (1932) had British participants read an unfamiliar Native American folk story, "The War of the Ghosts," containing culturally unfamiliar elements (canoes, spirits, unfamiliar names), and then recall it repeatedly over time (or pass it along to another participant, "serial reproduction"). Reproductions became progressively **shorter**, more conventional, and systematically distorted to fit participants' own **cultural schemas** – unfamiliar details were rationalized, omitted, or

"Anglicized" (e.g., "canoes" became "boats"), while the overall gist was retained. Bartlett concluded that remembering is an active process of **reconstruction** guided by schemas, not passive reproduction.

VN **GIẢI THÍCH TIẾNG VIỆT**

Bartlett (1932) chứng minh trí nhớ mang tính **tái cấu trúc (reconstructive)**: khi nhớ lại một câu chuyện xa lạ về mặt văn hoá, người tham gia vô thức "chỉnh sửa" chi tiết cho phù hợp với **sơ đồ nhận thức (schema)** sẵn có của họ, khiến câu chuyện càng lúc càng ngắn và "hợp lý hoá" theo văn hoá riêng của người kể lại.

3.6 Thinking and decision-making

Tversky and Kahneman (1974) showed that people commonly rely on cognitive shortcuts (**heuristics**) rather than fully rational, exhaustive calculation when making judgments under uncertainty: the **availability heuristic** (judging likelihood by how easily examples come to mind – e.g., overestimating shark attack risk after heavy news coverage, because vivid examples are easy to recall), the **representativeness heuristic** (judging likelihood by similarity to a mental prototype, often ignoring statistical **base rates** – e.g., assuming a quiet, detail-oriented person is more likely to be a librarian than a farmer, even though farmers vastly outnumber librarians), and **anchoring and adjustment** (relying too heavily on an initial reference point/"anchor" – even an arbitrary one – when making numerical estimates, and adjusting insufficiently away from it). Heuristics are fast and often useful, but systematically produce predictable errors (**cognitive biases**).

Khái niệm cốt lõi

Building on this research, a broader **dual process theory** of thinking (popularized by Kahneman, 2011) distinguishes **System 1** (fast, automatic, intuitive, effortless, and heavily reliant on heuristics – prone to systematic biases) from **System 2** (slow, deliberate, effortful, analytical reasoning, capable of overriding System 1's initial judgment but requiring cognitive resources and motivation to engage). Many cognitive biases occur because System 1 generates a fast, heuristic-based answer that System 2 fails to check or override, especially under time pressure, cognitive load, or fatigue.

Ví dụ mẫu · Worked example

Participants are asked to estimate, within 5 seconds, the product of $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$ (ascending order) or $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ (descending order). Tversky and Kahneman (1974) found that participants shown the descending sequence gave substantially *higher* median estimates than those shown the ascending sequence, even though the two calculations are mathematically identical. Explain this finding using the concept of anchoring.

Because participants could not fully calculate the product within 5 seconds, they relied on the **System 1** heuristic of mentally computing only the first few numbers and then *adjusting* upward from that partial calculation. The descending sequence begins with larger numbers ($8 \times 7 \times 6 = 336$), producing a higher initial partial-product "anchor" than the ascending sequence's early partial product ($1 \times 2 \times 3 = 6$); because adjustment away from an anchor is typically **insufficient**, the final estimates remained systematically biased toward their respective starting anchors, producing higher overall estimates in the descending condition.

VN **GIẢI THÍCH TIẾNG VIỆT**

Heuristic là "lối tắt tư duy" nhanh nhưng dễ sai. Tversky and Kahneman (1974) mô tả ba loại chính: **availability** (đánh giá theo mức độ dễ nhớ lại ví dụ), **representativeness** (đánh giá theo mức độ "giống mẫu điển hình", bỏ qua tỉ lệ nền – base rate), và **anchoring** (bị "neo" vào con số ban đầu khi ước lượng, rồi điều chỉnh không đủ). Lý thuyết **xử lý kép (dual process theory)** phân biệt **Hệ thống 1** (nhanh, tự động, trực giác, dễ mắc thiên kiến) và **Hệ thống 2** (chậm, có chủ đích, phân tích logic, cần nhiều nguồn lực nhận thức hơn).

3.7 Reliability of memory

Ví dụ mẫu · Worked example

Loftus and Palmer (1974) showed participants films of car accidents, then asked how fast the cars were going when they "*smashed*," "collided," "bumped," "hit," or "contacted" each other. Speed estimates were significantly higher for the "smashed" wording (≈41 mph) than the "contacted" wording (≈32 mph), despite everyone seeing the identical film. A week later, participants in the "smashed" condition were also significantly more likely to falsely report having seen broken glass (there was none in the film) than those asked with milder verbs. This demonstrates that **leading questions** and post-event information can distort eyewitness memory – with obvious implications for the reliability of courtroom testimony.

Loftus and Pickrell (1995) – the "lost in the mall" study – gave participants four short childhood stories supposedly provided by family members; three were true, and one (being lost in a shopping mall as a child) was entirely **false**. About a quarter of participants came to partially or fully "remember" the false event, sometimes elaborating on it with invented details, demonstrating that entirely false autobiographical memories can be implanted through suggestion – a phenomenon with major implications for the credibility of "recovered memories" in legal and therapeutic settings.

VN **GIẢI THÍCH TIẾNG VIỆT**

Loftus and Palmer (1974): chỉ đổi **một động từ** trong câu hỏi ("smashed" thay vì "hit") đã làm thay đổi ước lượng tốc độ và tạo ra ký ức sai về mảnh kính vỡ không hề tồn tại – minh chứng cho việc trí nhớ có thể bị **bóp méo bởi thông tin sau sự kiện (post-event information)**. Loftus and Pickrell (1995) còn cho thấy có thể **cấy ghép cả một ký ức hoàn toàn sai** vào khoảng một phần tư số người tham gia.

3.8 Emotion and cognition

Khái niệm cốt lõi

Brown and Kulik (1977) proposed the concept of the **flashbulb memory**: an unusually vivid, detailed, high-confidence memory of the circumstances in which one learned about a shocking, emotionally significant public event (e.g., "where were you when you heard..."), which they suggested might be created by a special, emotion-triggered neural mechanism.

Ví dụ mẫu · Worked example

Neisser and Harsch (1992) surveyed college students about how they heard the news of the 1986 *Challenger* space shuttle disaster within a day of the event, then surveyed the *same* students again about 2.5 years later. Many later accounts differed substantially from the original ones – yet participants remained highly **confident** their (now inaccurate) later memory was correct. This shows that even emotionally charged "flashbulb" memories are **reconstructive** and can decay or change over time, and that subjective confidence is not a reliable indicator of memory accuracy.

Sharot, Martorella, Delgado, and Phelps (2007) used fMRI to compare brain activity in participants recalling their personal memories of the September 11, 2001, attacks, three years later. Participants who had been physically closer to the World Trade Center on the day of the attacks showed significantly greater **amygdala** activation while recalling that day, compared to participants who had been farther away – and greater amygdala activation correlated with participants' self-reported vividness and confidence in their memory (though not necessarily with objective accuracy). This links the subjective, emotionally vivid quality of flashbulb memories to a specific biological mechanism (amygdala involvement in emotional memory), connecting the cognitive and biological approaches, while still not proving that greater vividness/amygdala activity equals greater factual accuracy.

VN **GIẢI THÍCH TIẾNG VIỆT**

Neisser and Harsch (1992) cho thấy ngay cả **"ký ức đèn flash" (flashbulb memory)** – vốn được cho là đặc biệt sống động và chính xác vì gắn với cảm xúc mạnh – vẫn có thể **thay đổi theo thời gian**, dù người tham gia vẫn rất tự tin rằng ký ức của mình là chính xác. Độ tự tin cao KHÔNG đồng nghĩa với độ chính xác cao. Sharot và cộng sự (2007) dùng fMRI cho thấy người ở gần hiện trường vụ khủng bố 11/9 có hoạt động **hạch hạnh nhân (amygdala)** mạnh hơn khi nhớ lại sự kiện, liên hệ giữa cách tiếp cận nhận thức và sinh học của trí nhớ cảm xúc.

(!) Lỗi thường gặp: Do not describe Loftus and Palmer's leading-question effect as participants simply "lying" about what they saw – the key theoretical claim is that the wording of the question genuinely *alters the memory trace itself* (or its retrieval), not that participants are consciously misreporting. Similarly, do not equate a flashbulb memory's vividness/confidence with its accuracy – Neisser and Harsch (1992) and Sharot et al. (2007) both show these can come apart.

3.9 Digital technology and cognition

Khái niệm cốt lõi

Contemporary cognitive psychology also studies how digital technology reshapes cognitive processes such as memory and attention. **Sparrow, Liu, and Wegner (2011)** tested whether believing information will remain accessible online changes how people encode it. In one experiment, participants typed trivia statements into a computer; half were told the statements would be saved, half were told they would be erased. Participants who believed the information would be **erased** recalled it significantly better than those who believed it would be **saved**. In a related experiment, when participants expected to have later access to information, they were better at remembering *where* (which folder) it was stored than at remembering the information itself – a pattern the researchers termed the **"Google effect"** on memory, and

related to the broader concept of **transactive memory** (relying on external sources, including other people or devices, to store information rather than encoding it internally).

VN **GIẢI THÍCH TIẾNG VIỆT**

Sparrow, Liu and Wegner (2011) chứng minh **"hiệu ứng Google" (Google effect)**: khi tin rằng thông tin sẽ được lưu lại (ví dụ trên máy tính/internet), người tham gia nhớ nội dung **kém hơn** nhưng lại nhớ tốt hơn **nơi lưu trữ** thông tin đó – một dạng **trí nhớ giao dịch (transactive memory)**, tức là con người có xu hướng "giao phó" việc lưu trữ thông tin cho nguồn bên ngoài (bao gồm cả công nghệ số) thay vì tự mã hoá vào trí nhớ của chính mình.

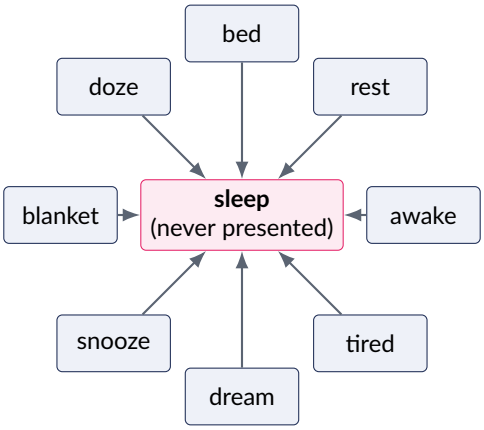
3.10 False memories: the DRM paradigm

Khái niệm cốt lõi

Schema theory (Bartlett, 1932) and Loftus's research on leading questions (Loftus and Palmer, 1974) and implanted suggestion (Loftus and Pickrell, 1995) both show that memory is **reconstructive**: existing knowledge structures, and information encountered *after* an event, or direct suggestion from another person, can distort what is later recalled, or even generate a memory for something that never actually happened. A separate and in some ways even more striking question is whether a compelling false memory can be created *entirely from within*, through the normal, automatic operation of memory itself, without any external leading question, misinformation, or suggestion at all.

Ví dụ mẫu · Worked example

Roediger and McDermott (1995), extending an earlier word-list recall procedure first devised by **Deese (1959)** – together giving rise to the **DRM (Deese–Roediger–McDermott) paradigm** – had participants study lists of 12 to 15 words that were all strongly semantically associated with a single **"critical lure"** word that was itself never included anywhere in the list. For example, one list contained the words *bed*, *rest*, *awake*, *tired*, *dream*, *wake*, *snooze*, *blanket*, *doze*, *slumber*, *snore*, *nap*, *peace*, and *yawn* – every one of which is closely associated in meaning with the word **"sleep,"** yet "sleep" itself was never presented. Immediately afterwards, participants completed a free recall test and/or a recognition test (in which they judged whether individual words, including the critical lure, had appeared on the list). Roediger and McDermott found that participants very frequently and confidently recalled or recognized the non-presented critical lure as though it genuinely had been on the list – with false recall/recognition rates for the critical lure often comparable to, and in some conditions even higher than, correct recall/recognition rates for words that had actually been presented. Participants were not simply guessing: many rated their memory of having heard or seen the critical lure with high subjective confidence, and some spontaneously reported specific (but entirely fabricated) recollective detail, such as claiming to remember the voice or the list position in which "sleep" had supposedly occurred.



In the DRM paradigm (Roediger and McDermott, 1995), every studied word spontaneously activates the shared, never-presented critical lure ("sleep") through ordinary associative links in semantic memory – eventually causing the lure itself to be falsely "remembered."

The theoretical importance of the DRM paradigm is that it does not rely on any of the mechanisms used in earlier false-memory research: no experimenter ever suggests the critical lure to participants, no leading question is asked, and no post-event misinformation is introduced (compare with Loftus and Palmer, 1974, and Loftus and Pickrell, 1995, both of which depend on some form of external suggestion). Instead, the false memory appears to arise purely through the participant's own **semantic association network**: studying each list word automatically activates related concepts (a process often described as **spreading activation**), and because every word on the list independently activates the same central, unpresented lure, activation of that lure accumulates until it becomes very difficult for the participant to distinguish from a genuinely presented, encoded item at retrieval. This shows that the ordinary, adaptive process that lets meaningfully related information support and cue one another during normal encoding and retrieval is the very same process that can spontaneously manufacture a detailed, high-confidence memory for something that never occurred.

Ví dụ mẫu · Worked example

Methodologically, Roediger and McDermott (1995) strengthened their conclusions in several ways. The words making up each list were not chosen arbitrarily: researchers first collected **free-association norms**, in which large samples of independent respondents were given a single cue word and asked to write down the first related word that came to mind; a list's items were then selected because a large proportion of respondents had spontaneously produced the same critical lure in response to each one. Participants in the memory experiment itself studied several different lists in the same session, each built around a different critical lure drawn from an entirely different semantic category (not only "sleep," but lures from unrelated domains too), and the same false-recall/false-recognition pattern appeared for list after list – showing the effect is a general property of associative memory rather than a quirk of one particular word list. On the final recognition test, participants who judged a word as "old" were also asked whether they consciously **"remembered"** the specific experience of encountering that word during the study phase, or merely had a vague sense of **"knowing"** it was familiar without any specific recollection. Critically, participants gave "remember" responses to the falsely recognized critical lures nearly as often as they did to genuinely studied words – meaning the false memory was not experienced as a vague hunch, but frequently came with the same subjective, detailed, "I-recall-experiencing-this" quality as an accurate memory. Follow-up work in the same tradition also established that the size of the effect depends on identifiable list properties: lists in which each individual studied word is very strongly as-

sociated back to the lure produce higher rates of false recall/recognition than lists with only weak backward associations, and longer lists (more converging associates) tend to produce a stronger effect than shorter ones, because more independent activations converge on the same non-presented lure.

The DRM effect also connects to concepts already established earlier in this chapter. **Craik and Lockhart's (1972)** levels-of-processing framework holds that **deep, semantic** processing – extracting and connecting meaning – produces the strongest, most durable memory traces (Craik and Tulving, 1975). The DRM paradigm reveals the double-edged nature of this same mechanism: the very same semantic, meaning-based connections that make deep processing so effective for accurately remembering real information are what allow a coherent but entirely non-presented "gist" word (the critical lure) to be encoded and later retrieved as if it, too, had actually been studied. Cognitive psychologists often distinguish between a **verbatim trace** (the exact surface form of what was actually presented) and a **gist trace** (the general meaning or theme extracted from what was presented); the DRM effect can be understood as a case in which a strong gist trace ("this list was about sleep") is mistaken, at retrieval, for a verbatim trace of the specific word "sleep" itself. This also connects to **Bartlett's (1932)** schema theory: both Bartlett's participants and Roediger and McDermott's participants produced systematic, non-random reconstructions consistent with an underlying meaning structure, rather than a haphazard scatter of random errors – but the direction of the distortion differs. Bartlett's distortions were driven **top-down**, by broad pre-existing cultural schemas reshaping an entire unfamiliar narrative; Roediger and McDermott's distortions were driven **bottom-up**, by specific, local, word-to-word associative links between the particular items on a single list. Schema-driven and association-driven reconstruction are therefore best understood as two distinct, complementary routes by which memory can depart from what was actually experienced.

Feature	Loftus and Palmer (1974) / Loftus and Pickrell (1995)	Roediger and McDermott (1995)
Source of distortion	External – a leading question, a suggestive interview, or a fabricated family story	Internal – spontaneous spreading activation between semantically associated words
Is another person's suggestion required?	Yes	No
What triggers the false memory?	Post-event information supplied by an experimenter or interviewer	The participant's own pre-existing semantic associations, activated automatically during ordinary encoding
Typical real-world parallel	Leading questions in police interviews; suggestive therapeutic interviewing	Co-witnesses' group discussion activating shared associative networks; everyday misremembering of "gist"-consistent detail

The DRM paradigm has genuine real-world relevance beyond the laboratory. In eyewitness contexts, when several witnesses to the same event discuss what they saw before giving independent statements, each witness's own associative network can be activated by the group discussion in ways that converge on the same non-experienced "gist" detail for everyone – a possible cognitive contributor to **memory conformity** between co-witnesses, alongside purely social pressures to agree with one another. In clinical and forensic settings where "recovered memories" are discussed, the DRM paradigm is frequently cited as evidence that a detailed, subjectively vivid, and confidently held memory is not, by itself, proof that the remembered event actually occurred, since ordinary, non-suggestive cognitive processes alone can manufacture exactly that subjective experience for an event that never happened.

The DRM false-memory effect is among the most extensively replicated phenomena in cognitive psychology, having been observed using written and auditory list presentation, immediate and delayed testing, and both free recall and recognition testing formats. This has a practical implication relevant to studying and revision: a commonly recommended learning technique is to group conceptually related facts together, because meaningful, semantically organized material is generally easier to encode and retrieve (consistent with the levels-of-processing framework). The DRM paradigm is a useful reminder that this same organizational strategy carries a cost – closely related but subtly different facts, studied together, can become blended or confused with one another in memory at test time, so learners revising tightly clustered material should specifically check that they can distinguish similar-sounding facts from one another, not simply that the general topic feels familiar.

(!) Lỗi thường gặp: Do not conclude from the DRM paradigm that human memory is generally unreliable or "bad." The associative process responsible for the false memory – linking meaningfully related concepts together in semantic memory – is the same process that makes memory efficient, and that (per the levels-of-processing framework) normally *improves* recall of genuinely presented, meaningful material. The DRM effect only becomes visible because researchers deliberately engineered a list in which every single item converges on one specific non-presented word; it is a revealing laboratory demonstration of how a normally adaptive process can occasionally misfire, not evidence of pervasive memory failure in everyday life.

GIẢI THÍCH TIẾNG VIỆT

VN

Nghiên cứu **DRM (Deese–Roediger–McDermott)** của Roediger and McDermott (1995), dựa trên phương pháp trước đó của Deese (1959): người tham gia học một danh sách từ đều **liên quan về nghĩa** đến một từ "mồi" (critical lure) không hề xuất hiện trong danh sách – ví dụ: *giường, nghỉ, thức, mệt, mơ, dậy...* đều liên quan đến từ **"ngủ"**, nhưng bản thân từ "ngủ" không hề được đưa ra. Khi được kiểm tra trí nhớ (nhớ lại tự do hoặc nhận diện), người tham gia **thường xuyên và tự tin** nhớ nhầm/nhận nhầm rằng từ mồi "ngủ" đã xuất hiện trong danh sách, với tỉ lệ nhớ nhầm đôi khi còn cao hơn tỉ lệ nhớ đúng những từ thực sự có trong danh sách. Điều quan trọng về mặt lý thuyết: hiện tượng này xảy ra hoàn toàn **từ bên trong**, thông qua **liên tưởng ngữ nghĩa (spreading activation)** bình thường trong trí nhớ, mà **không cần bất kỳ ai "gợi ý"** hay đặt câu hỏi dẫn dắt từ bên ngoài – khác với các nghiên cứu của Loftus (dựa vào thông tin sai lệch sau sự kiện hoặc gợi ý trực tiếp). Các danh sách từ trong nghiên cứu được xây dựng dựa trên **chuẩn liên tưởng tự do (free-association norms)** – tức là chọn những từ mà đa số người được hỏi trước đó đều liên tưởng ngay đến từ mồi; và khi được hỏi thêm liệu họ có thực sự "nhớ lại" (remember) trải nghiệm nghe/thấy từ mồi hay chỉ đơn thuần thấy "quen thuộc" (know), người tham gia thường chọn "nhớ lại" với từ mồi gần như thường xuyên như với các từ thực sự có trong danh sách – cho thấy ký ức sai này không chỉ là cảm giác mơ hồ

mà thường đi kèm cảm giác chi tiết, sống động y như ký ức thật. So với sự **tái cấu trúc theo sơ đồ (schema)** của Bartlett (1932) – vốn diễn ra "từ trên xuống", do kiến thức văn hoá tổng quát định hình lại cả câu chuyện – hiệu ứng DRM diễn ra "từ dưới lên", do các liên kết cụ thể giữa từng từ trong danh sách tạo ra. Hiện tượng này có ý nghĩa thực tiễn: trong bối cảnh nhân chứng, việc nhiều người cùng thảo luận về một sự kiện trước khi khai báo có thể khiến mạng lưới liên tưởng của từng người hội tụ về cùng một chi tiết sai lệch; trong bối cảnh trị liệu/pháp lý, hiện tượng này cho thấy độ sống động và tự tin của một ký ức không đồng nghĩa với việc sự kiện đó thực sự xảy ra.

(!) Lỗi thường gặp: Do not describe the DRM effect as "the same thing" as Loftus's misinformation effect. Both demonstrate that memory is reconstructive and that false memories can form, but the *mechanism* differs importantly: Loftus and Palmer (1974) and Loftus and Pickrell (1995) both require an **external** source of distortion (a leading question, a suggestive interview, a fabricated family story), whereas Roediger and McDermott's (1995) DRM paradigm shows a false memory can be generated by **purely internal**, associative processes during ordinary encoding, with no external suggestion involved at all. A strong exam answer explicitly distinguishes "false memory via external suggestion" from "false memory via internal association."

3.11 Cognitive biases beyond heuristics: confirmation bias

Khái niệm cốt lõi

Beyond the specific heuristics identified by Tversky and Kahneman (1974), psychologists have identified a broader bias in how people test their own beliefs and hypotheses: **confirmation bias** is the tendency to selectively **seek out**, **interpret**, and **recall** information in ways that confirm one's pre-existing beliefs or hypotheses, while failing to seek out – or actively discounting – information that could disconfirm them. Rather than testing a hypothesis by trying to find evidence that would prove it *wrong* (falsification), people characteristically test a hypothesis by looking for evidence that would confirm it, even when a disconfirming test would be at least as informative, or more informative.

Ví dụ mẫu · Worked example

Wason (1960) gave participants a simple rule-discovery task. Participants were told that the triplet of numbers "2, 4, 6" conformed to a particular rule known only to the experimenter, and their task was to discover that rule. To do so, they could generate their own triplets of numbers, and after each triplet the experimenter would say only "yes" (fits the rule) or "no" (does not fit the rule); participants could test as many triplets as they wished before announcing what they believed the rule to be. The actual rule was simply **"any three numbers in ascending order,"** an extremely broad and simple rule. However, most participants quickly formed a much narrower, more specific hypothesis based on the initial example, such as "even numbers increasing by two," and then went on to test mostly triplets that were **consistent** with their own hypothesis (e.g., 8, 10, 12, or 20, 22, 24) rather than triplets specifically designed to try to **falsify** it (e.g., 1, 2, 3, or 2, 4, 5, both of which fit the actual, broader rule despite not fitting the "even numbers" hypothesis). Because every "confirming" triplet they tried also happened to receive a "yes" (since it also satisfied the true, broader rule), participants gained false confidence in their overly narrow hypothesis, and many confidently announced an incorrect rule.

Wason's (1960) 2-4-6 task demonstrates that people have a natural tendency toward **confirmatory**, rather than **falsificatory**, hypothesis testing – even in an abstract, emotionally neutral reasoning task with no personal stake in the outcome. This has broad implications well beyond the laboratory: in **scientific reasoning**, a researcher who only designs experiments capable of supporting a favoured theory (rather than experiments capable of disproving it) risks reaching unwarranted confidence in a false theory; in **jury decision-making**, a juror who forms an early impression of a defendant's guilt or innocence may then selectively attend to, and better remember, only the trial evidence consistent with that first impression; and in clinical or medical **diagnostic thinking**, a clinician who settles early on one diagnosis may unconsciously seek out confirming symptoms and underweight symptoms that would point toward an alternative diagnosis.

Ví dụ mẫu · Worked example

A typical sequence of trials in Wason's (1960) task illustrates the bias concretely. A participant given the initial triplet "2, 4, 6" might quickly hypothesize "even numbers increasing by two," and then test: 8, 10, 12 (told "yes"); 14, 16, 18 (told "yes"); 50, 52, 54 (told "yes"). Each "yes" *feels* like mounting evidence for the hypothesis, so the participant announces "the rule is: even numbers, increasing by two" – and is told this is **incorrect**. Very few participants, at this point, had tried a triplet that could have ruled out their hypothesis much earlier, such as 1, 2, 3 (numbers that are not even, and that increase by one rather than two) or 3, 10, 100 (numbers that are not evenly spaced at all). Both of these triplets would also have received a "yes" (since both are simply ascending), which would have immediately signalled that the "even, +2" hypothesis was too narrow – yet almost nobody tried this kind of test until after their first, confirmed-but-incorrect guess had already failed, and even then, many participants generated a second, still-too-narrow hypothesis (e.g., "any two numbers increasing by two, then a third larger number") and again tested it only by seeking further confirmation.

Khái niệm cốt lõi

Logically, a confirming test (like 8, 10, 12) is far **less informative** than a potentially falsifying test (like 1, 2, 3), because a "yes" to a confirming test is equally consistent with the participant's narrow hypothesis *and* with many broader alternative rules (including the true rule) – it fails to discriminate between them. A test capable of producing a "no" under the participant's hypothesis, by contrast, would immediately and decisively separate the narrow hypothesis from broader alternatives the moment it instead returned "yes." This logic echoes a broader idea from the philosophy of science – that hypotheses gain their strongest support not from accumulating confirming instances (which many competing theories could equally predict) but from surviving genuine attempts at falsification. Wason's (1960) participants nonetheless defaulted to the intuitively "safer-feeling," but logically far weaker, strategy of only seeking confirmation.

Triplet tested	Fits "even, +2" hypothesis?	Fits true rule (any ascending)?	What the result reveals
8, 10, 12	Yes	Yes	Confirms the narrow hypothesis, but is uninformative – cannot distinguish the narrow hypothesis from the true, broader rule
20, 22, 24	Yes	Yes	Another confirming, uninformative test
1, 2, 3	No	Yes	A genuinely diagnostic, falsifying test: a "yes" response would immediately reveal the narrow hypothesis is wrong
2, 4, 5	No	Yes	Also diagnostic: fits the true rule despite violating the "even numbers" hypothesis

Confirmation bias connects naturally to the heuristics discussed earlier in this chapter. **Representativeness** plays a role in the 2-4-6 task itself: participants' first hypothesis is heavily shaped by how *representative* "even numbers increasing by two" seems of the single example given ("2, 4, 6"), even though this single example is equally consistent with countless other rules. **Availability** can also compound confirmation bias outside the laboratory: once a person holds a belief, confirming examples tend to be noticed and recalled more easily (because the person is actively, if unconsciously, primed to notice them), which further inflates confidence in the original belief. People may also find confirming evidence more psychologically comfortable to encounter than disconfirming evidence, since a disconfirming result requires revising a belief already held – often an effortful and uncomfortable process – whereas a confirming result requires no such revision. Notably, Wason's task was abstract and emotionally neutral, with no personal stake in being right about "2, 4, 6"; this shows that confirmation bias is not solely a product of ego-protective motivation to defend a cherished belief, but can also occur as a "colder," purely cognitive default strategy, which arguably makes it more pervasive and harder to eliminate than a purely motivational account would predict.

Ví dụ mẫu · Worked example

Consider a juror who forms an early belief, based on a defendant's demeanor, that the defendant is guilty. During the trial, the juror may find it easy to notice and remember testimony that fits a "guilty" narrative (e.g., an inconsistent alibi) while discounting or forgetting testimony that fits an "innocent" narrative (e.g., corroborated alibi evidence from an independent witness) – illustrating how confirmation bias, once an initial hypothesis has formed, can shape *which* evidence is even noticed and remembered, not just how already-noticed evidence is weighed. The same pattern applies to scientific reasoning: a researcher convinced of a favoured theory may unconsciously design further experiments capable only of supporting it, rather than experiments genuinely capable of refuting it, so that an entire published body of work can appear to "confirm" a theory that has, in fact, never been seriously tested against a real risk of failure.

Confirmation bias can also compound with **anchoring and adjustment** (Tversky and Kahneman, 1974): an initial hypothesis can function much like a numerical anchor, in that once it is formed, it is not only tested asymmetrically (via confirmation bias) but also adjusted away from insufficiently even when disconfirming evidence eventually does appear, so an incorrect first impression can persist well beyond the point at which contradicting information has been encountered. This has a direct application to evaluating psychological research, a skill emphasized throughout the IB Psychology course: when a study or claim appears to strongly support a particular theory, a critical reader should ask whether the study's design could, even in principle, have produced evidence *against* that theory. A research design capable only of confirming a hypothesis (for example, only ever measuring evidence consistent with the researcher's prediction, with no way for the data to come out otherwise) provides much weaker support than a design that placed the hypothesis at genuine risk of failing.

(!) Lỗi thường gặp: Do not assume that simply encouraging someone to "think harder" or "be more careful" is sufficient to overcome confirmation bias. Wason's (1960) participants were already thinking hard: they deliberately and effortfully generated multiple hypotheses and tested many self-chosen triplets before answering. Their error was not insufficient effort, but the absence of a specific alternative *strategy* – deliberately searching for evidence that could disconfirm, rather than confirm, their current hypothesis. This distinction matters for real-world debiasing: interventions such as structured devil's-advocate procedures in juries or boardrooms, or requiring a hypothesis to specify in advance what finding would count against it, work by installing a specific falsification-seeking strategy, not merely by asking people to exert more general effort or caution.

VN **GIẢI THÍCH TIẾNG VIỆT**

Thiên kiến xác nhận (confirmation bias): xu hướng chỉ tìm kiếm, diễn giải, và ghi nhớ thông tin theo hướng **xác nhận** niềm tin/giả thuyết sẵn có, thay vì tìm thông tin có thể **bác bỏ** niềm tin đó. Trong nhiệm vụ "2-4-6" của **Wason (1960)**, người tham gia được cho biết dãy số "2, 4, 6" tuân theo một quy luật, và phải tự đưa ra các bộ ba số khác để nhận phản hồi "đúng/sai" nhằm tìm ra quy luật đó. Quy luật thực sự chỉ đơn giản là **"ba số bất kỳ tăng dần"**, nhưng hầu hết người tham gia lại đưa ra giả thuyết hẹp hơn (ví dụ: "số chẵn tăng dần 2 đơn vị") và sau đó chỉ thử các bộ số **phù hợp** với giả thuyết của mình (ví dụ: 8, 10, 12) thay vì chủ động thử các bộ số có khả năng **bác bỏ** giả thuyết (ví dụ: 1, 2, 3). Kết quả là nhiều người tự tin công bố một quy luật **sai** và quá hẹp so với quy luật thực sự (chỉ đơn giản là "ba số tăng dần"). Về mặt logic, một phép thử **xác nhận** (ví dụ 8, 10, 12) kém thông tin hơn nhiều so với một phép thử **có khả năng bác bỏ** (ví dụ 1, 2, 3), vì câu trả lời "đúng" cho phép thử xác nhận vẫn phù hợp với vô số giả thuyết khác nhau – ý tưởng này gần với quan điểm trong triết học khoa học rằng một giả thuyết được ủng hộ mạnh nhất khi nó **sống sót qua các nỗ lực bác bỏ**, chứ không phải khi nó chỉ tích luỹ thêm bằng chứng xác nhận. Thiên kiến xác nhận còn liên hệ với các heuristic đã học: giả thuyết ban đầu bị định hình bởi **representativeness** (mức độ "giống" ví dụ ban đầu), trong khi **availability** khiến bằng chứng xác nhận (một khi đã tin) trở nên dễ nhận ra và dễ nhớ hơn. Vì nhiệm vụ này hoàn toàn trừu tượng, không liên quan cảm xúc hay lợi ích cá nhân, thiên kiến xác nhận ở đây không thể giải thích chỉ bằng động cơ bảo vệ niềm tin – nó là một chiến lược tư duy mặc định, ngay cả khi Hệ thống 2 đang hoạt động tích cực (người tham gia chủ động đặt ra và kiểm tra nhiều giả thuyết). Điều này có ứng dụng thực tế trong bồi thẩm đoàn (dễ chỉ chú ý bằng chứng phù hợp với ấn tượng ban đầu về nghi phạm) và trong nghiên cứu khoa học (nhà nghiên cứu chỉ thiết kế thí nghiệm có thể xác nhận, chứ không thể bác bỏ, giả thuyết yêu thích của mình) – và cho thấy việc giảm thiên kiến này cần một **chiến lược cụ thể** (chủ động tìm bằng chứng bác bỏ), chứ không chỉ đơn giản là "suy nghĩ kỹ hơn".

(!) Lỗi thường gặp: Do not assume confirmation bias only occurs when someone is being lazy, unintelligent, or emotionally invested in an outcome. In Wason's (1960) task, participants were actively and effortfully generating and testing hypotheses – an engaged, deliberate process consistent with dual process theory's **System 2** – yet their overall *search strategy* was still systematically biased toward confirmation rather than falsification. This shows that a cognitive bias can persist even when System 2 is actively engaged, not only when System 2 fails to engage at all; the bias lies in *which* evidence people think to look for, not simply in whether they bother to think.

3.12 Problem Bank

Bài tập luyện tập

Sperling (1960) found that under "whole report" conditions, participants recalled only 4–5 letters from a briefly-flashed 3x3 grid, but under "partial report" (cued immediately after the flash), they could recall almost an entire cued row regardless of which row was cued. What does this pattern best demonstrate?

(A) Long-term memory has unlimited capacity

(B) A brief, high-capacity sensory (iconic) memory store exists that decays within a fraction of a second

(C) Working memory has exactly four components

(D) Semantic encoding is stronger than acoustic encoding

Lời giải chi tiết

Because participants could accurately report *any* cued row immediately after the flash, nearly the entire grid must have briefly been available in a very short-lived **sensory (iconic) memory** store – one that decayed too fast for a full "whole report" attempt to capture, but fast enough cueing could still access before the trace faded. **(B)**.

Bài tập luyện tập

Peterson and Peterson (1959) found that recall of consonant trigrams fell from nearly 90% at 3 seconds to below 10% at 18 seconds when participants counted backward (preventing rehearsal) during the delay. This is best explained as evidence for:

(A) The unlimited duration of short-term memory

(B) Rapid decay of information in short-term memory without active rehearsal

(C) The existence of the phonological loop specifically

(D) Flashbulb memory formation

Lời giải chi tiết

Preventing rehearsal (via the backward-counting task) caused recall to collapse within about 18 seconds, showing that STM information decays very rapidly unless it is actively refreshed by rehearsal – direct evidence for STM's short **duration**, one of the multi-store model's key claims. **(B)**.

Bài tập luyện tập

In Baddeley's (1966) study, immediate recall was impaired by acoustically similar word lists but not semantically similar lists, while delayed recall showed the opposite pattern. This dissociation supports which conclusion?

(A) STM and LTM are the same single store

(B) STM primarily encodes acoustically while LTM primarily encodes semantically

(C) Memory does not depend on encoding format at all

(D) The central executive controls all encoding

Lời giải chi tiết

The double dissociation (acoustic similarity hurts immediate/STM recall; semantic similarity hurts delayed/LTM recall) shows STM and LTM rely on qualitatively different dominant encoding formats – acoustic for STM, semantic for LTM – supporting the multi-store model's claim that they are functionally distinct stores. **(B)**.

Bài tập luyện tập

A patient can hold a phone number in mind for a few seconds while also visualizing a route on a mental map, performing both tasks with little interference. According to the working memory model, this is best explained by:

(A) Both tasks use the same single short-term store, so there should be heavy interference

(B) The phonological loop and visuospatial sketchpad are separate slave systems that can operate in parallel with limited mutual interference

(C) The episodic buffer cannot hold visual information

(D) The central executive has unlimited capacity

Lời giải chi tiết

The working memory model proposes separate, specialized subsystems – the **phonological loop** (verbal/acoustic) and the **visuospatial sketchpad** (visual/spatial) – that can be used relatively independently and simultaneously, unlike a single undifferentiated STM store, which predicts much more interference between any two concurrent tasks regardless of their modality. **(B)**.

Bài tập luyện tập

In Craik and Tulving's (1975) incidental-learning experiment, words judged for meaning (semantic processing) were recalled far better than words judged for case (structural processing), even though participants did not know their memory would be tested. Why is the incidental (surprise-test) design methodologically important here?

(A) It ensures participants could not simply try harder or rehearse more for the "deep" condition, isolating depth of processing itself as the cause of better recall

(B) It removes the need for a control group

(C) It proves the multi-store model is entirely wrong

(D) It shows semantic memory does not exist

Lời giải chi tiết

Because participants did not expect a memory test, differences in recall cannot be attributed to participants *deliberately* rehearsing more in the semantic condition – the incidental design isolates **depth of processing at encoding** itself as the active ingredient producing better recall, strengthening the causal interpretation of the levels-of-processing framework. **(A)**.

Bài tập luyện tập

Bartlett (1932) found that British participants' reproductions of "The War of the Ghosts" became shorter and were systematically altered toward more familiar, culturally conventional details over repeated recalls. This finding is best explained by:

(A) Decay of sensory memory

(B) Schema-driven reconstruction of memory to fit prior cultural knowledge

(C) The working memory model's central executive

(D) Flashbulb memory formation

Lời giải chi tiết

The systematic distortion toward familiar, culturally expected details – rather than random forgetting – shows memory is actively **reconstructed** using existing **schemas** (cultural knowledge frameworks), which is the central claim of schema theory, not simple sensory decay or a working-memory component. **(B)**.

Bài tập luyện tập

Participants asked to estimate a product starting from a high partial calculation (8x7x6=...) gave much higher final estimates than those starting from a low partial calculation (1x2x3=...), even though the full calculations were mathematically identical. This is a clear example of:

(A) The availability heuristic

(B) Anchoring and insufficient adjustment

(C) The representativeness heuristic

(D) Levels of processing

Lời giải chi tiết

Participants' final estimates were pulled toward their initial partial calculation (the "anchor") and were not adjusted enough away from it – the defining pattern of **anchoring and (insufficient) adjustment**, distinct from availability (ease of recall) or representativeness (similarity to a prototype). **(B)**.

Bài tập luyện tập

After extensive news coverage of a rare shark attack, many beachgoers dramatically overestimate their personal risk of shark attack relative to far more common risks (e.g., drowning from rip currents). This is best explained by:

(A) The availability heuristic, because vivid, easily recalled media examples inflate perceived likelihood

(B) The representativeness heuristic

(C) Anchoring and adjustment

(D) Levels of processing theory

Lời giải chi tiết

Because the vivid, heavily-covered shark attack is easy to recall, people judge the event as more *likely* than its true statistical frequency – the defining pattern of the **availability heuristic**, which uses ease of recall as a (sometimes misleading) proxy for actual probability. **(A)**.

Bài tập luyện tập

A witness is asked, "How fast was the car going when it smashed into the pole?" rather than "How fast was the car going when it hit the pole?" According to Loftus and Palmer (1974), which outcome is most likely?

(A) No difference in estimated speed, since both questions ask the same thing

(B) A higher estimated speed and a greater chance of falsely recalling nonexistent damage

(C) A lower estimated speed due to increased caution

(D) The witness will refuse to answer due to the leading nature of the question

Lời giải chi tiết

Loftus and Palmer's original finding was that more intense verbs ("smashed") produced significantly **higher** speed estimates than milder verbs ("hit"), and in a follow-up, the "smashed" wording also increased false memories of non-existent details (broken glass). **(B)**.

Bài tập luyện tập

A patient with hippocampal damage similar to H.M.'s can still learn to improve at a new motor-coordination task with practice, despite having no conscious memory of ever practicing it before. This dissociation best illustrates that:

(A) Procedural memory and declarative memory are separate systems supported by different brain structures

(B) The multi-store model is completely incorrect

(C) Working memory is not affected by hippocampal damage

(D) Schema theory explains all memory distortions

Lời giải chi tiết

The preserved ability to learn a new skill (**procedural memory**, which does not require the hippocampus) alongside a total inability to consciously recall the learning episodes (**declarative/explicit memory**, which does require the hippocampus for consolidation) is exactly the dissociation demonstrated in H.M.'s case (Scoville and Milner, 1957) – strong evidence these are separate memory systems relying on different neural structures. **(A)**.

Bài tập luyện tập

Sharot et al. (2007) found greater amygdala activation when recalling 9/11 among participants who had been physically closer to the attacks, and this activation correlated with self-reported vividness/confidence – but not necessarily with objective accuracy. What is the most important implication of the "not necessarily accuracy" finding?

(A) Flashbulb memories are always completely accurate

(B) Vividness and confidence in a memory are not reliable indicators of how accurate that memory actually is

(C) Amygdala activity has no relationship to emotional memory

(D) fMRI cannot measure amygdala activity

Lời giải chi tiết

The dissociation between subjective vividness/confidence (linked to amygdala activation) and objective accuracy is the key theoretical point – consistent with Neisser and Harsch's (1992) behavioural finding that people can be highly confident in a flashbulb memory that has, in fact, changed substantially over time. **(B)**.

Bài tập luyện tập

In Sparrow, Liu, and Wegner's (2011) study, participants who believed their typed information would be automatically erased recalled it significantly better than participants who believed it would be saved. This finding is best explained by:

(A) Erased information is inherently more emotionally significant

(B) Believing information will remain externally accessible reduces the motivation/need to internally encode it (the "Google effect")

(C) Saved information is processed more deeply by definition

(D) This shows sensory memory has unlimited duration

Lời giải chi tiết

When participants expected the information to remain accessible (saved), they appear to have relied on that external storage instead of committing the information to their own memory – the **"Google effect"**/transactive memory pattern – resulting in worse recall than when they believed the information would not remain accessible. **(B)**.

Bài tập luyện tập

SAQ-style: Outline Bartlett's (1932) research on the role of schema in memory.

Lời giải chi tiết

Bartlett had British participants read an unfamiliar Native American story, "The War of the Ghosts," containing culturally unfamiliar content, and recall it after various delays (or pass it serially from one participant to the next). He found that reproductions became progressively shorter and were systematically altered to fit participants' own cultural **schemas** – unfamiliar elements were rationalized, changed to more familiar equivalents, or dropped altogether, while the general gist of the story was preserved. Bartlett concluded that remembering is an active, constructive process shaped by pre-existing knowledge structures (schemas), not a literal, accurate playback of stored information. Full credit outlines the procedure (unfamiliar story, repeated/serial recall) and the key finding (systematic schema-driven distortion, gist retained).

Bài tập luyện tập

SAQ-style: Explain, using one relevant study, the difference between the multi-store model and the working memory model of memory.

Lời giải chi tiết

The **multi-store model** (Atkinson and Shiffrin, 1968) treats short-term memory as a single, unitary store that information passes through on its way to long-term memory, distinguished from LTM mainly by limited capacity and short duration. The **working memory model** (Baddeley and Hitch, 1974) instead proposes that what was called "STM" is actually composed of several specialized, simultaneously active components – a central executive, a phonological loop, a visuospatial sketchpad, and (later) an episodic buffer – that can process different types of information (verbal vs visual/spatial) in parallel with limited mutual interference. Dual-task studies provide key supporting evidence for this distinction: participants can typically perform one verbal task and one visual/spatial task together with little disruption to either (because they draw on separate slave systems), but combining two verbal tasks (both competing for the same phonological loop) produces much greater interference – a pattern the single-store multi-store model cannot easily explain, but which follows naturally from the working memory model's separate, modality-specific components. Full credit accurately describes both models and links the comparison to a specific piece of supporting evidence (e.g., dual-task interference patterns).

Bài tập luyện tập

SAQ-style: Describe one heuristic used in decision-making, with reference to a relevant study or example.

Lời giải chi tiết

The **availability heuristic** (Tversky and Kahneman, 1974) is a mental shortcut in which people judge the likelihood or frequency of an event based on how easily relevant examples come to mind, rather than on its actual statistical frequency. For example, after extensive, vivid media coverage of a rare shark attack, beachgoers often dramatically overestimate their real chance of being attacked by a shark relative to statistically far more common risks such as drowning in a rip current, because the vivid media example is much easier to recall than abstract drowning statistics. This heuristic is generally adaptive and efficient (recent, vivid, or personally-relevant events often genuinely are more likely to recur), but it produces systematic errors whenever ease of recall and true frequency diverge, such as when media coverage is disproportionate to actual risk. Full credit names and accurately defines one heuristic, and gives a specific, accurate example illustrating how it produces a judgment.

Bài tập luyện tập

ERQ-style: Using one relevant study, discuss the role of emotion in one cognitive process.

Lời giải chi tiết

Neisser and Harsch (1992) investigated the role of emotion in memory accuracy using the emotionally shocking 1986 *Challenger* space shuttle disaster as a natural "flashbulb" event. Participants were surveyed about the circumstances in which they heard the news within a day of the disaster, and the same participants were surveyed again roughly 2.5 years later.

Comparing the two accounts revealed that many participants' later recollections differed substantially – in some cases almost completely – from their original, near-contemporaneous reports, yet participants expressed high confidence that their (inaccurate) later memory was correct. This challenges Brown and Kulik's (1977) original claim that intense emotion creates an unusually accurate, almost photographic "flashbulb" memory via a special neural mechanism; instead, it suggests emotionally significant memories, like ordinary memories, are **reconstructive** and vulnerable to distortion and decay over time, even though the accompanying subjective feeling of vividness and confidence remains high. This is complemented by biological evidence from **Sharot et al. (2007)**, who found that participants closer to the September 11 attacks showed greater amygdala activation when recalling the day, which correlated with subjective vividness/confidence but not necessarily objective accuracy – linking the cognitive phenomenon to a specific neural mechanism while reinforcing that vividness does not guarantee accuracy. A full-credit answer names the cognitive process (memory, specifically flashbulb memory), describes at least one study's procedure and finding accurately, and explicitly links the finding to the role emotion plays (creating strong confidence/vividness that is not matched by actual accuracy).

Bài tập luyện tập

ERQ-style: Discuss how models of memory can be applied to understanding the reliability of eyewitness testimony.

Lời giải chi tiết

Models of memory suggest several concrete reasons why eyewitness testimony can be unreliable, despite witnesses' genuine confidence. According to **schema theory**, memory is not a literal recording but a **reconstructive** process shaped by pre-existing knowledge and expectations; **Bartlett (1932)** showed that recall is systematically distorted to fit familiar cultural schemas, which in an eyewitness context means a witness's memory for an ambiguous or fast-moving event may be unconsciously "filled in" using stereotypes or expectations about what usually happens in such situations (e.g., assuming a person of a certain appearance was the aggressor because it fits a stereotype). **Loftus and Palmer (1974)** directly demonstrated that **post-event information** – specifically, the wording of a question asked *after* witnessing an event – can measurably distort a memory: participants who were asked how fast cars were going when they "smashed" (versus "hit") gave significantly higher speed estimates and were more likely to falsely recall nonexistent broken glass a week later, showing that leading questions posed by police or lawyers can genuinely alter what a witness later reports remembering, not just how they phrase it. **Loftus and Pickrell (1995)** went further, showing that entirely **false autobiographical memories** can be implanted through suggestion, with about a quarter of participants coming to believe a wholly fabricated childhood event had happened to them – raising serious concerns about memories "recovered" through suggestive interviewing techniques. Together, these findings imply that legal systems relying heavily on eyewitness confidence and vivid, detailed testimony (following the folk assumption that vivid = accurate) may be systematically overestimating its reliability, and support the use of properly-designed, non-leading interview protocols (e.g., the cognitive interview) and independent corroborating evidence wherever possible. A full-credit answer draws on at least two named studies, explains the specific memory mechanism each demonstrates, and connects both explicitly to real-world implications for eyewitness testimony.

Bài tập luyện tập

In Roediger and McDermott's (1995) DRM paradigm, participants studied word lists (e.g., bed, rest, awake, tired, dream...) that were all associated with a non-presented critical lure ("sleep"). On a later memory test, what did they typically find?

(A) Participants almost never falsely recalled or recognized the critical lure

(B) Participants very frequently and confidently falsely recalled or recognized the critical lure, sometimes at rates comparable to or higher than for actually-presented words

(C) Participants recalled the critical lure only when directly asked a leading question about it

(D) Recall of the critical lure was always rated by participants as low-confidence guessing

Lời giải chi tiết

Roediger and McDermott (1995) found that the never-presented critical lure was falsely recalled/recognized very frequently and with high subjective confidence, at rates that were often comparable to, or even exceeded, correct recall/recognition of genuinely studied words – showing that a compelling false memory had formed via normal semantic associative processes. **(B)**.

Bài tập luyện tập

Why is the DRM paradigm (Roediger and McDermott, 1995) considered theoretically significant in the study of false memory, relative to earlier research such as Loftus and Palmer (1974) or Loftus and Pickrell (1995)?

(A) It shows false memories require a leading question or suggestive interview to be created

(B) It shows false memories can be created without any external suggestion, misinformation, or leading question – through internal semantic association alone

(C) It shows that false memories are impossible to create under laboratory conditions

(D) It shows that false memories only occur for emotionally traumatic autobiographical events

Lời giải chi tiết

Unlike Loftus and Palmer's (1974) leading-question effect or Loftus and Pickrell's (1995) implanted "lost in the mall" memory – both of which depend on some external source of suggestion – the DRM paradigm shows that a vivid, high-confidence false memory can be generated purely internally, through ordinary spreading activation between associated words in semantic memory, with no suggestion from another person required at all. **(B)**.

Bài tập luyện tập

In Wason's (1960) "2-4-6" task, the actual rule was simply "any three ascending numbers," but most participants formed a narrower hypothesis (e.g., "even numbers ascending by two") and predominantly tested triplets consistent with that narrower hypothesis rather than triplets designed to refute it. This best illustrates:

(A) The availability heuristic

(B) A general tendency toward confirmatory rather than falsificatory hypothesis testing (confirmation bias)

(C) The working memory model's episodic buffer

(D) Flashbulb memory formation

Lời giải chi tiết

Participants overwhelmingly chose to test triplets that would confirm their own hypothesis rather than triplets that could actively falsify it, so many wrongly concluded their narrow hypothesis was the true rule – the defining pattern of **confirmation bias**, distinct from any of the memory-based options. **(B)**.

Bài tập luyện tập

A person who strongly supports a particular political party only reads news sources known to share that party's views, dismisses opposing news sources as "biased," and remembers stories that make their own party look good far more easily than stories that do not. This pattern is best explained by:

(A) The representativeness heuristic

(B) Confirmation bias

(C) Anchoring and adjustment

(D) The Google effect / transactive memory

Lời giải chi tiết

Selectively seeking out agreeing sources, dismissing disconfirming sources as unreliable, and preferentially remembering belief-consistent stories are all hallmark features of **confirmation bias** – the tendency to seek, interpret, and recall information in ways that confirm pre-existing beliefs while discounting information that could disconfirm them. **(B)**.

Bài tập luyện tập

SAQ-style: Explain, using one study, how false memories can be created.

Lời giải chi tiết

Roediger and McDermott (1995) demonstrated that false memories can be created without any external suggestion at all. Using the DRM paradigm (building on Deese, 1959), participants studied word lists (e.g., bed, rest, awake, tired, dream) that were all strongly associated with a single non-presented "critical lure" word (e.g., "sleep"). On a later recall or recognition test, participants very frequently and confidently falsely recalled or recognized the critical lure as though it had actually been presented, at rates often comparable to or higher than for words that genuinely had appeared, and sometimes with reported (false) recollective detail. This false memory is thought to arise through ordinary **spreading activation**: each studied word automatically activates the same associated, unpresented lure, and this accumulated activation is later mistaken for a genuine memory trace. This can usefully be contrasted with **Loftus and Pickrell's (1995)** "lost in the mall" study, in which a false childhood memory was implanted through direct **external suggestion** from family members and the experimenter. Together, the two studies show false memories can arise through two distinct routes: external suggestion (Loftus and Pickrell) or purely internal semantic association (Roediger and McDermott). Full credit names a study, accurately describes its procedure and finding, and explains the mecha-

nism producing the false memory.

Bài tập luyện tập

ERQ-style: Discuss biases in thinking and decision-making, with reference to two relevant studies.

Lời giải chi tiết

Human thinking and decision-making frequently deviate from purely rational, exhaustive calculation, instead relying on fast mental shortcuts and biased search strategies that produce systematic, predictable errors. **Tversky and Kahneman (1974)** demonstrated that people commonly rely on **heuristics** such as availability (judging likelihood by ease of recall – e.g., overestimating shark attack risk after vivid media coverage), representativeness (judging likelihood by similarity to a prototype while ignoring statistical base rates), and anchoring and adjustment (relying too heavily on an initial reference point and adjusting insufficiently away from it, as shown when participants estimating $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ gave much higher estimates than those estimating the identical product in ascending order, $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$).
A different, but related, bias is demonstrated by **Wason (1960)**, whose "2-4-6" rule-discovery task showed that when trying to discover a simple underlying rule ("any three ascending numbers") by generating and testing their own triplets, participants overwhelmingly tested triplets that would **confirm** their own initial, overly narrow hypothesis (e.g., "even numbers ascending by two") rather than triplets designed to actively **falsify** it – a pattern termed **confirmation bias** – causing many participants to confidently announce an incorrect rule.
Both studies can be integrated using **dual process theory** (Kahneman, 2011): **System 1** generates fast, intuitive judgments or hypotheses (an anchor-based estimate; an initial narrow rule), while **System 2** is, in principle, capable of deliberately and effortfully checking or correcting these outputs. In Tversky and Kahneman's studies, System 2 frequently fails to sufficiently override System 1's heuristic-based estimate, especially under time pressure (participants had only five seconds to estimate the product). Wason's study shows something subtly different, and arguably more concerning: even when System 2 *is* actively engaged – participants were effortfully generating and testing hypotheses across multiple trials, not simply guessing – the underlying *search strategy* itself remained systematically biased toward confirmation, showing that deliberate, effortful thought does not automatically correct for bias; the bias can lie in *which* evidence a person thinks to seek out, not merely in whether they bother to think carefully at all.
These biases have genuine real-world significance: confirmation bias in particular has direct implications for **scientific reasoning** (researchers who only design studies capable of confirming, rather than falsifying, their hypothesis risk reaching false confidence in incorrect theories) and for **jury decision-making** (jurors who form an early impression of guilt may selectively attend to, and better remember, only confirming trial evidence). A key limitation, however, is **ecological validity**: both the anchoring/multiplication task and the abstract 2-4-6 task are simplified, low-stakes laboratory tasks quite unlike the emotionally-charged, socially-embedded, high-stakes judgments people make in real life (e.g., political beliefs, medical diagnoses, jury verdicts), so the extent to which these precise laboratory biases generalize, unchanged, to complex real-world reasoning remains debated. Full credit discusses at least two named studies accurately, links them explicitly via dual process theory, and evaluates using at least one genuine strength (real-world application) and one genuine limitation (ecological validity).

Bài tập luyện tập

Roediger and McDermott's (1995) DRM lists were constructed using free-association norms, so that every studied word was independently known to evoke the same non-presented critical lure. What methodological purpose does this serve?

(A) It ensures the critical lure will be equally, and strongly, activated by every single studied word, maximizing the chance of observing a false memory for that specific lure

(B) It ensures participants cannot use semantic memory at all during the task

(C) It removes the need for a recognition test

(D) It guarantees participants will always recall every studied word correctly

Lời giải chi tiết

By selecting words already known (from prior free-association data) to strongly evoke the same lure, researchers maximize convergent activation on that lure from many different directions, making the DRM false-memory effect reliably observable rather than a rare fluke – a matter of careful list construction, not of participants' semantic memory being bypassed. **(A)**.

Bài tập luyện tập

In Roediger and McDermott's (1995) study, participants who falsely recognized the critical lure often gave a "remember" judgment (claiming specific conscious recollection of encountering it) almost as often as they did for genuinely studied words, rather than a "know" judgment (a vague sense of familiarity only). Why is this finding significant?

(A) It shows the false memory was experienced with the same subjective, detailed quality as an accurate memory, not merely a vague hunch

(B) It proves the critical lure was secretly presented to participants after all

(C) It shows recognition tests are less accurate than free recall tests in every case

(D) It shows participants were being intentionally dishonest

Lời giải chi tiết

High rates of "remember" (rather than merely "know") judgments for the never-presented critical lure indicate that participants subjectively experienced specific, vivid recollective detail for an event that never happened – reinforcing that false memories in the DRM paradigm can feel indistinguishable from true ones, rather than being experienced as uncertain guesses. **(A)**.

Bài tập luyện tập

Bartlett's (1932) schema-driven distortions of "The War of the Ghosts" and Roediger and McDermott's (1995) DRM false memories both show that memory is reconstructive, but they differ in an important way. Which best describes this difference?

(A) Bartlett's distortions were driven top-down by broad cultural schemas reshaping a whole narrative, while DRM's false memories were driven bottom-up by specific word-to-word associations within a single list

(B) Bartlett's study used fMRI while Roediger and McDermott's study did not

(C) Only Bartlett's research has ever been replicated

(D) DRM false memories require conscious suggestion from another person, exactly like Bartlett's

Lời giải chi tiết

Bartlett's (1932) participants distorted an unfamiliar story to fit broad, pre-existing **cultural schemas** – a top-down process reshaping the meaning of an entire narrative – whereas Roediger and McDermott's (1995) participants generated a specific false word purely through local, bottom-up associative links between the particular items on one list. Both demonstrate reconstructive memory, but via distinct mechanisms, and neither depends on fMRI or on conscious external suggestion. **(A)**.

Bài tập luyện tập

A doctor forms an initial impression early in a patient consultation that the patient has condition X, and subsequently asks questions and orders tests that would only confirm condition X, while failing to ask questions that could reveal an alternative diagnosis Y that also fits the initial symptoms. This clinical reasoning error is best described as an example of:

(A) The availability heuristic

(B) Confirmation bias, an over-reliance on confirmatory rather than falsificatory information-seeking

(C) The multi-store model

(D) The Google effect

Lời giải chi tiết

Seeking out only information that would confirm an initial diagnostic hypothesis, rather than actively testing for an alternative diagnosis that also fits the evidence so far, is a direct clinical parallel to the confirmatory (rather than falsificatory) hypothesis-testing strategy demonstrated in Wason's (1960) 2-4-6 task – an example of **confirmation bias** in diagnostic thinking. **(B)**.

Bài tập luyện tập

Which statement best captures why Wason's (1960) 2-4-6 task is theoretically important, given that participants were clearly exerting deliberate, effortful reasoning (proposing and testing many of their own hypotheses) rather than answering carelessly?

(A) It shows that cognitive biases only occur when people fail to think carefully or put in effort

(B) It shows that a systematic bias can persist even when System 2 is actively and effortfully engaged, because the bias lies in which evidence people choose to seek out, not merely in how much effort they exert

(C) It shows System 2 always successfully overrides System 1

(D) It shows that abstract reasoning tasks are immune to any cognitive bias

Lời giải chi tiết

Because Wason's participants were already deliberately and effortfully generating and testing multiple hypotheses (an engaged System 2 process), yet their search strategy remained confirmatory rather than falsificatory, the task shows that a bias can operate within, not only in the absence of, effortful deliberate thought – meaning simply "trying harder" does not guarantee an unbiased conclusion. **(B)**.

Bài tập luyện tập

Cognitive psychologists distinguish a **verbatim trace** (the exact surface form of what was actually presented) from a **gist trace** (the general meaning extracted from what was presented). In the DRM paradigm, false recognition of the critical lure is best explained as:

(A) A strong verbatim trace of the lure itself, since it was technically spoken by the experimenter

(B) A strong gist trace of the list's overall meaning being mistaken, at retrieval, for a verbatim trace of the specific critical lure

(C) A complete failure of long-term memory to store any information at all

(D) A sensory (iconic) memory effect lasting under one second

Lời giải chi tiết

The critical lure was never presented, so no verbatim trace of it could exist; instead, a strong **gist trace** capturing the list's overall meaning (e.g., "this list was about sleep") is mistakenly experienced at retrieval as though it were a verbatim memory of the specific, never-presented word itself. **(B)**.

Bài tập luyện tập

A shopper who has already decided to buy a particular product reads mostly the five-star reviews, while skimming past or dismissing the one-star reviews as "fake" or "unrepresentative," which reinforces their decision to buy. This shopping behaviour is best explained by:

(A) Confirmation bias

(B) The availability heuristic

(C) The multi-store model

(D) Flashbulb memory

Lời giải chi tiết

Selectively attending to reviews that confirm an existing purchase intention, while dismissing disconfirming reviews as unreliable, is a direct example of **confirmation bias** – seeking, interpreting, and weighting information in a way that favours a pre-existing belief or intention rather than genuinely testing it. **(A)**.

Bài tập luyện tập

SAQ-style: Explain one limitation of laboratory research into biases in thinking and decision-making.

Lời giải chi tiết

A key limitation of laboratory research into biases such as heuristics (Tversky and Kahneman, 1974) and confirmation bias (Wason, 1960) is limited **ecological validity**. Tasks such as estimating an abstract multiplication problem within five seconds, or discovering a hidden numerical rule using self-generated triplets of digits, are highly simplified, low-stakes, and emotionally neutral compared to the complex, high-stakes, emotionally-charged judgments people make in real life (e.g., medical diagnoses, jury verdicts, political beliefs), where motivation, prior identity-linked commitments, and social pressure may all shape reasoning in ways an abstract laboratory task cannot fully capture. It is therefore debated how directly laboratory findings generalize to real-world decision-making, even though the same underlying tendency (favouring confirming or heuristic-consistent information) plausibly still operates – perhaps even more strongly – once personal or emotional stakes are added. A full-credit answer names a specific limitation (e.g., ecological validity), explains why it applies to the named research, and considers its implications for interpreting the findings.

Bài tập luyện tập

A group of eyewitnesses to the same car accident discuss what they saw with one another before separately giving statements to police. Even though none of them deliberately lies, several end up reporting the same specific, incorrect detail (e.g., a car colour that was not actually present at the scene). Which explanation, drawing on this chapter's discussion of false memory, best accounts for this outcome without assuming anyone lied?

(A) Each witness's own semantic associative network could have been activated similarly by the shared discussion and similar experience, converging on the same non-experienced "gist" detail for each person independently, alongside social pressure to agree

(B) The witnesses definitely have damage to the hippocampus, as in H.M.'s case

(C) This can only be explained by deliberate deception, since no other mechanism produces shared false details

(D) This shows sensory memory lasted for the entire discussion

Lời giải chi tiết

Consistent with the theoretical implications of the DRM paradigm (Roediger and McDermott, 1995), a shared false detail among honest witnesses can emerge because each witness's own internal associative memory processes may converge on the same non-experienced "gist" detail, especially once a group discussion has activated similar associations for everyone – no deliberate lying, hippocampal damage, or extended sensory memory is required to explain the pattern. This distinguishes **memory conformity** from simple dishonesty: the witnesses may be entirely sincere, yet still converge on an inaccurate shared detail, precisely because ordinary associative and reconstructive memory processes – not conscious deception – are doing the distorting. **(A)**.

Bài tập luyện tập

In Cherry's (1953) dichotic listening study, participants shadowed (repeated aloud) a message played into one ear while a different message played simultaneously into the other ear. Afterward, what could participants typically report about the unattended message?

(A) Its exact content, including specific words spoken and the language it was spoken in

(B) Only basic physical features, such as whether the voice was male or female, or whether it changed from speech to a tone – but not its content

(C) Nothing whatsoever, not even whether a voice had been present in that ear

(D) The precise meaning of every sentence, but never the speaker's gender

Lời giải chi tiết

Cherry (1953) found that participants could report only shallow, **physical**/sensory features of the unattended channel (e.g., the speaker's gender, or a change from speech to a continuous tone), but not its **content** (e.g., the language spoken or specific words) – showing that, under full selective attention, the unattended message receives only shallow processing. **(B)**.

Bài tập luyện tập

Despite generally being unable to report the content of the unattended channel in dichotic listening studies, participants in Cherry's (1953) research frequently noticed one specific type of stimulus if it occurred in the unattended message: their own name. Which theoretical model was developed largely to account for this "cocktail party effect"?

(A) Atkinson and Shiffrin's (1968) multi-store model

(B) Treisman's (1964) attenuation model, which proposes the unattended channel is weakened/attenuated rather than completely blocked

(C) Baddeley and Hitch's (1974) working memory model

(D) Craik and Lockhart's (1972) levels of processing framework

Lời giải chi tiết

The fact that a highly meaningful stimulus (one's own name) could still be recognized within an otherwise unprocessed unattended channel was difficult to explain if that channel were completely blocked. **Treisman (1964)** proposed instead that the unattended channel is merely **attenuated** (turned down in strength, not switched off), allowing especially significant stimuli to occasionally still be recognized. **(B)**.

Bài tập luyện tập

At a loud party, you are deeply engaged in conversation with a friend and cannot report anything said in a different conversation happening nearby – until, without trying to listen, you suddenly notice someone across the room say your own name. What does this everyday experience best illustrate?

(A) The multi-store model's claim that long-term memory has unlimited capacity

(B) The cocktail party effect: a highly salient stimulus, such as one's own name, can break through an attenuated (rather than fully blocked) unattended channel

(C) Flashbulb memory formation triggered by an emotionally shocking public event

(D) The Google effect, in which external storage reduces internal encoding

Lời giải chi tiết

This is a real-world instance of the **cocktail party effect**: although the nearby conversation was an unattended channel receiving only shallow, physical-level processing, your own name – a highly salient, personally meaningful stimulus – still broke through, consistent with Treisman's (1964) view that unattended information is attenuated rather than completely blocked. **(B)**.

Bài tập luyện tập

SAQ-style: Outline research into selective attention, with reference to one study.

Lời giải chi tiết

Selective attention is the process of focusing resources on one stream of information while filtering out competing information. **Cherry (1953)** used **dichotic listening**: participants wore headphones playing two different messages simultaneously, one per ear, and were asked to **shadow** (repeat aloud, in real time) the message in one ear (attended channel) while ignoring the other (unattended channel). Participants could report only basic **physical** features of the unattended message, such as speaker gender or a change from speech to a tone, but not its **content**, such as the language spoken or specific words – showing the unattended channel receives only shallow processing. However, participants frequently noticed their own name in the unattended channel, despite recalling nothing else from it – the **"cocktail party effect"** – suggesting filtering is not all-or-nothing. This motivated **Treisman's (1964) attenuation model**: the unattended channel is merely weakened, not fully blocked, so meaningful stimuli can occasionally break through. Full credit describes Cherry's procedure and both key findings, linking them to Treisman's model.

The Sociocultural Approach to Behaviour

Mục tiêu Unit: Lý thuyết bản sắc xã hội (social identity theory) và hiện tượng thiên vị nhóm trong (in-group bias); lý thuyết nhận thức xã hội (social cognitive theory) của Bandura và học tập qua quan sát (observational learning); sự tuân thủ theo số đông (conformity), sự vâng theo yêu cầu (compliance), và tư duy nhóm (groupthink); sự hình thành và tác động của định kiến rập khuôn (stereotype), bao gồm hiện tượng đe doạ định kiến (stereotype threat); các chiều văn hoá (cultural dimensions) theo Hofstede; quá trình nhập văn hoá (enculturation) và hội nhập văn hoá (acculturation) theo mô hình bốn chiến lược của Berry; và ảnh hưởng của văn hoá lên nhận thức (culture and cognition).

4.1 Social identity theory

Human beings do not build their sense of self only from personal, idiosyncratic traits (their **personal identity**); a substantial part of the self-concept is also constructed from the social groups a person belongs to – nationality, school, sports team, religion, political party, or even a temporary experimental grouping. **Tajfel and Turner's (1979) social identity theory (SIT)** proposes that people are strongly motivated to achieve and protect a positive self-esteem, and that one important route to this is through a favourable evaluation of the groups one belongs to (**in-groups**) relative to groups one does not belong to (**out-groups**). What makes SIT theoretically radical is its claim that this bias toward the in-group can emerge from the bare fact of group membership itself – without any history of real conflict, competition for scarce resources, personal contact, or even face-to-face interaction between members. This claim was directly and famously tested using what became known as the **minimal group paradigm**, a research design engineered to strip away every plausible alternative explanation for intergroup bias except categorization itself.

Khái niệm cốt lõi

Social identity theory describes three sequential cognitive processes that generate in-group favouritism. **Social categorization** is the basic cognitive act of sorting the social world into "us" (in-group) and "them" (out-group) categories – a process closely related to the general use of schemas to simplify an otherwise overwhelming amount of social information, and one that can be triggered by criteria as trivial as a stated aesthetic preference or the colour of an assigned team shirt. **Social identification** follows once a person has categorized themselves as belonging to a particular group: they adopt the norms, values, and emotional attachment associated with that group's identity, so that the group's relative standing becomes psychologically bound up with the individual's own self-esteem. **Social comparison** is the final and most consequential step: because self-esteem now depends partly on the perceived standing of one's own group, people become motivated to compare their in-group favourably against relevant out-groups, seeking **positive distinctiveness** – ways in which the in-group can be seen as better than, or at least meaningfully different from and superior to, comparable out-groups. Because the underlying motivation is the protection of self-esteem rather than objective accuracy, the theory predicts a systematic bias toward favouring the in-group even in situations where no rational, material, or historical reason for that bias exists at all.

The three sequential processes of social identity theory (Tajfel and Turner, 1979). Bias toward the in-group is the predicted end-point of a purely cognitive-motivational chain, not necessarily of any real conflict of interest.

Crucially, SIT does not require that the out-group be seen as an enemy, nor that a real conflict of interest exist: **positive distinctiveness** can often be achieved simply by identifying *some* dimension on which the in-group can be seen as different from, or better than, a comparison out-group, even a fairly trivial one. This is why the theory extends naturally to a huge range of everyday group memberships well beyond nationality or ethnicity – school houses, sports fan bases, university faculties, or even temporary experimental groupings can all trigger measurable in-group bias once a person has categorized themselves as a member. Later social identity research has also emphasized that the *strength* of this bias is not fixed: it tends to be larger when a person identifies more strongly with the in-group, when the in-group's status feels threatened or insecure, and when alternative comparison out-groups are readily available for comparison.

Ví dụ mẫu · Worked example

Tajfel, Billig, Bundy, and Flament (1971) tested whether mere categorization alone, stripped of every other normal ingredient of intergroup conflict, could produce in-group bias. British schoolboys aged 14–15 were told they would be split into two groups supposedly on the basis of a trivial aesthetic preference – whether they had rated paintings by the artist **Paul Klee** or **Wassily Kandinsky** more highly in an earlier task (in reality, group assignment was essentially arbitrary and unrelated to genuine preference). Boys never learned who else belonged to their own group or the out-group, never interacted with any other participant face to face, and had no prior history of competition or conflict with the out-group; critically, the point-allocation task that followed gave each boy no personal stake of his own to protect. Each boy privately used specially designed reward matrices to allocate small real sums of money to pairs of other boys identified only by a code number and by "Klee group" or "Kandinsky group" membership – never to himself. Boys consistently awarded more money to anonymous members of their own group than to members of the other group, and the matrices further revealed that many boys favoured strategies that **maximized the relative difference** in the in-group's favour, even when this meant the in-group received a smaller absolute sum than an alternative, more generous allocation would have given it. This is powerful evidence that **mere categorization** into arbitrary, minimal groups – with no competition, no prior contact, and no personal self-interest at stake – is sufficient on its own to produce in-group favouritism, exactly as social identity theory predicts.

GIẢI THÍCH TIẾNG VIỆT

VN

Lý thuyết bản sắc xã hội (SIT) của Tajfel and Turner (1979) cho rằng một phần cái tôi (self-concept) đến từ việc thuộc về các **nhóm xã hội**, và con người có xu hướng đánh giá nhóm mình (in-group) tích cực hơn nhóm khác (out-group) để bảo vệ lòng tự trọng. Ba quá trình: **phân loại xã hội (social categorization)** – chia thế giới thành "chúng ta" và "họ"; **nhận diện xã hội (social identification)** – gắn bản sắc và chuẩn mực của nhóm vào cái tôi; **so sánh xã hội (social comparison)** – so sánh nhóm mình có lợi hơn nhóm khác để đạt **tính khác biệt tích cực**

(positive distinctiveness). Nghiên cứu kinh điển của **Tajfel và cộng sự (1971)** dùng "mô hình nhóm tối thiểu (minimal group paradigm)": các cậu học sinh Anh được chia nhóm chỉ dựa trên một tiêu chí hoàn toàn tầm thường (thích tranh của Klee hay Kandinsky hơn), chưa từng gặp mặt thành viên nhóm mình, và không có xung đột lợi ích thật sự – vậy mà vẫn cho điểm/tiền nhiều hơn cho thành viên trong nhóm, thậm chí chấp nhận nhóm mình nhận ít hơn về giá trị tuyệt đối miễn là **chênh lệch tương đối** so với nhóm kia lớn hơn. Điều này chứng minh chỉ riêng việc **phân loại** thành nhóm cũng đủ để tạo ra thiên vị nhóm trong. Đáng chú ý, thiên vị này không đòi hỏi phải coi nhóm ngoài là "kẻ thù" hay có xung đột lợi ích thật sự – chỉ cần tìm được một khía cạnh để nhóm mình có vẻ khác biệt/tốt hơn nhóm kia (**tính khác biệt tích cực**) là đủ, và mức độ thiên vị này càng lớn khi một người nhận diện càng mạnh với nhóm của mình.

4.2 Social cognitive theory

Not all learning depends on personally experiencing reinforcement or punishment. **Bandura's social cognitive theory** (sometimes still called social learning theory) proposes that a great deal of human behaviour, especially complex social behaviour such as aggression, gender roles, or moral conduct, is learned by observing and imitating other people (**models**), and that this **observational learning** can occur even when the observer never personally performs the behaviour, and even when no reinforcement is given to the observer at the time learning takes place. This was a significant departure from strict behaviourist accounts, which held that learning requires the learner's own direct reinforcement history.

Khái niệm cốt lõi

Bandura argued that observational learning is governed by four mediating cognitive processes. **Attention**: the observer must actively attend to the model and to the relevant features of the modelled behaviour (models who are attractive, similar to the observer, or perceived as high-status or competent tend to draw more sustained attention). **Retention**: the observed behaviour must be encoded and stored in memory – for example as a mental image or a verbal description – so that it can be recalled later, potentially long after the original observation. **Reproduction**: the observer must possess the physical and cognitive capability actually required to reproduce the behaviour; simply having watched a complex behaviour does not guarantee the ability to perform it. **Motivation**: the observer must have a reason to perform the behaviour, which depends heavily on the consequences the model appeared to experience – **vicarious reinforcement** (seeing a model rewarded for a behaviour increases the observer's own likelihood of imitating it) and **vicarious punishment** (seeing a model punished decreases it). This last process is theoretically crucial: it means a behaviour can be fully *learned* through observation alone and only be *performed* much later, under different circumstances, once motivation is present – a phenomenon Bandura linked to **latent learning**. A closely related construct that Bandura later developed is **self-efficacy** (Bandura, 1977): a person's belief in their own capability to successfully execute the specific behaviour required to produce a desired outcome in a given domain. Self-efficacy is not a general trait of overall confidence but is specific to a task or domain, and it strongly influences whether a person who has learned a behaviour through observation will actually attempt, and persist at, performing it. Bandura proposed that self-efficacy beliefs are themselves built from four main sources: **mastery experiences** (a person's own direct past successes and failures at similar tasks, generally the single most powerful source), **vicarious experience** (seeing similar others succeed or fail at the task, which ties self-efficacy directly back to observational learning itself), **verbal persuasion** (encouragement or discouragement received from others), and **physiological and emotional states** (how a person interprets their own bodily arousal – for example, whether a racing heart before a task is interpreted as debilitating anxiety or as energizing excitement can itself raise

or lower perceived self-efficacy for that task).

Ví dụ mẫu · Worked example

Bandura, Ross, and Ross (1961) conducted the classic ”Bobo doll” study to test whether children would imitate aggression they merely observed, without being reinforced for it themselves. Nursery-school children were individually exposed to one of three conditions: an adult model behaving **aggressively** toward a large inflatable Bobo doll (striking it with a mallet, throwing it, sitting on it, and shouting distinctive phrases such as ”Pow” and ”Sock him”), an adult model behaving **non-aggressively** (playing quietly with other toys, ignoring the doll), or **no model at all** (control condition). Children were then mildly frustrated (briefly shown, then denied access to, a room of attractive toys) before being placed alone in a room containing the Bobo doll and a variety of other toys, where their behaviour was recorded through a one-way observation mirror. Children who had watched the aggressive model displayed significantly more **physical and verbal aggression** than children in the other two conditions, including a number of entirely **novel aggressive acts** that the model had never actually performed – showing genuine generalized imitation rather than mere mechanical copying. Some patterning by sex of model and child was also observed, with same-sex imitation of physical aggression somewhat stronger than cross-sex imitation. Because no participant was ever directly reinforced for aggression, the study provided compelling evidence that complex social behaviour can be acquired purely through **observation**, mediated by attention and retention, with motivation (here, apparently, the sheer permission-giving example of an unpunished aggressive adult) determining whether the learned behaviour was subsequently performed.

VN **GIẢI THÍCH TIẾNG VIỆT**

Lý thuyết nhận thức xã hội của **Bandura** cho rằng con người có thể học hành vi qua **quan sát và bắt chước người khác (model)** mà không cần tự mình được củng cố trực tiếp. Bốn quá trình trung gian: **chú ý (attention)**, **lưu giữ (retention)**, **tái tạo (reproduction)** – phải có khả năng thực hiện hành vi – và **động lực (motivation)**, vốn phụ thuộc vào **củng cố gián tiếp (vicarious reinforcement/punishment)** khi thấy model được thưởng hay bị phạt. **Tự tin năng lực bản thân (self-efficacy, Bandura 1977)** là niềm tin vào khả năng thực hiện thành công một nhiệm vụ cụ thể, ảnh hưởng đến việc một hành vi đã học có được **thực hiện** hay không. Nghiên cứu búp bê Bobo của **Bandura, Ross, and Ross (1961)**: trẻ em xem người lớn hành xử **gây hấn** hoặc **không gây hấn** với búp bê Bobo, sau đó trẻ xem model gây hấn bắt chước nhiều hành vi gây hấn hơn hẳn, kể cả những hành vi **mới** mà model chưa từng làm – dù trẻ hoàn toàn không được củng cố trực tiếp cho hành vi gây hấn của mình.

(!) Lỗi thường gặp: Do not describe observational learning as requiring the observer to be directly reinforced, nor assume that ”learning” and ”performing” a behaviour are the same thing. Bandura’s model explicitly separates them: a child can fully *learn* an aggressive behaviour from a single observation (via attention and retention) and yet never display it, because **motivation** – shaped by vicarious reinforcement/punishment and, later, by self-efficacy – determines whether the learned behaviour is ever actually performed. This distinction matters directly for exam answers about media violence: a child can watch a violent film and fully encode the depicted aggressive acts into memory without ever performing them, if no later situational cue provides sufficient motivation to do so – ”exposure” and ”imitation” are not the same claim.

4.3 Conformity, compliance, and groupthink

Social psychologists distinguish several related but conceptually distinct ways that other people shape an individual's behaviour. **Conformity** is a change in behaviour or belief as a result of real or imagined group pressure, typically from people of roughly equal status (peers). **Compliance** is agreeing to a specific, explicit request made by another person or group, which may or may not reflect any genuine change in private belief. **Groupthink** operates at the level of an entire decision-making group rather than a single individual, describing how the internal dynamics of a cohesive group can systematically degrade the quality of its collective decisions. All three are forms of social influence, but each involves a different mechanism and a different unit of analysis.

4.3.1 Conformity

Khái niệm cốt lõi

Asch (1951) devised one of the most influential paradigms in social psychology to measure conformity under unambiguous conditions. A genuine participant was seated in a group of confederates (posing as fellow participants) and asked, along with the group, to judge aloud which of three comparison lines matched the length of a standard line – a task so easy that participants tested alone made almost no errors. On certain "critical trials," however, every confederate unanimously gave the same, obviously incorrect answer before the real participant responded. Averaged across all critical trials, genuine participants conformed to the incorrect majority answer on roughly **32–37%** of critical trials, and approximately **75%** of participants conformed at least once across the whole study; a control condition in which participants judged the lines with no confederates present produced an error rate of under **1%**. Two explanations are typically offered for conformity of this kind. **Normative social influence** is conforming in order to be liked, accepted, or to avoid the discomfort of standing out or being rejected by the group, even while privately still believing the correct answer – a form of **compliance** rather than genuine private acceptance. **Informational social influence** is conforming because the individual genuinely believes the group has better or more accurate information than they do, especially under conditions of ambiguity or uncertainty – this leads to genuine private acceptance of the group's view, not merely public agreement.

Condition	Result
Critical trials (unanimous, wrong confederate majority)	Participants conformed on roughly 32–37% of critical trials on average
Whole sample, across the study	Approximately 75% of participants conformed at least once
Control condition (no confederates, judging alone)	Error rate under 1%

Asch's (1951) line-judgment paradigm: the gap between the control condition and the critical trials isolates the effect of unanimous group pressure on an objectively easy perceptual task.

Asch's later variations identified several factors that systematically alter conformity rates. **Group size**: conformity increased as the number of unanimous confederates rose from one to about three or four, but adding still more confederates beyond that point produced little further increase – suggesting the *unanimity*, not sheer numbers, is what matters most. **Breaking unanimity**: introducing even a single dissenting confederate who gave a different answer from the majority (even if that answer was also wrong) sharply reduced conformity, because it demonstrated that disagreement with the majority was socially possible. **Task difficulty**: making the comparison lines closer in length (increasing ambiguity) increased conformity, consistent with a greater role for informational social influence when the "correct" answer is genuinely less obvious.

4.3.2 Compliance

Unlike conformity, which can arise from unspoken, implicit group pressure with no explicit request ever made, **compliance** refers specifically to agreeing to an explicit request from another person or group. Compliance does not require that the person's private attitude genuinely change – someone may comply with a request purely to be polite, to avoid conflict, or because of a persuasive technique, while privately holding a quite different view. One of the best-documented compliance techniques is the **foot-in-the-door effect**, in which securing agreement to a small initial request measurably increases the likelihood of later agreement to a larger, related request.

Ví dụ mẫu · Worked example

Freedman and Fraser (1966) tested the **foot-in-the-door technique**: the idea that agreeing to a small initial request makes a person significantly more likely to later agree to a larger, related request. Californian homeowners were first approached and asked to comply with a small, low-cost request – for example, signing a petition or agreeing to display a small sign in their window related to safe driving or keeping the community beautiful. A couple of weeks later, a different researcher approached the same homeowners (as well as a separate control group who had *not* been asked the small request beforehand) with a much larger, more intrusive request: permission to install a large, poorly-lettered "Drive Carefully" billboard sign on their front lawn. Compliance with this large request was dramatically higher among homeowners who had first agreed to the small request (roughly **76%**) than among those approached directly with only the large request (roughly **17%**). Freedman and Fraser interpreted this as evidence that performing even a small, low-cost initial behaviour can shift a person's self-perception (e.g., "I am the kind of person who supports this cause") in a way that makes a larger, consistent later request feel like a natural extension rather than a new imposition – the **foot-in-the-door effect**.

4.3.3 Groupthink

Janis's (1972) theory of groupthink describes how highly cohesive decision-making groups, particularly under pressure to reach rapid consensus, directive leadership, and insulation from outside opinion, can suppress critical evaluation of alternatives and thereby produce poor-quality collective decisions – even when the individual members are highly capable. Janis identified recurring symptoms, including an **illusion of invulnerability** (excessive optimism that encourages extreme risk-taking), **self-censorship** (members suppress their own doubts rather than voice them), an **illusion of unanimity** (silence is misread as agreement), and direct **pressure on dissenters** to conform to the emerging group consensus, sometimes enforced by self-appointed "mindguards" who shield the group from dissenting information. Janis illustrated groupthink using a detailed real-world case study: the planning of the United States' **Bay of Pigs invasion** of Cuba (1961), a covertly-organized, ultimately disastrous military operation approved by President Kennedy's close advisory group, which Janis analysed as showing many of these exact symptoms – overconfidence in the plan's feasibility, suppression of internal doubts by advisors who privately had reservations, and a striking absence of systematic consideration of the operation's most serious risks before it was approved. Janis's theory was not purely diagnostic: he also proposed practical remedies for reducing groupthink in real decision-making groups, including deliberately assigning a rotating **devil's advocate** role to challenge the group's emerging consensus, having the group leader withhold their own personal opinion until late in the discussion (so as not to prematurely signal the "expected" answer to less senior members), periodically dividing into independent subgroups to generate alternatives separately before reconvening, and inviting qualified outside experts to challenge the group's assumptions before a final, binding decision is made.

VN **GIẢI THÍCH TIẾNG VIỆT**

Sự tuân thủ theo số đông (conformity): nghiên cứu kinh điển của **Asch (1951)** cho thấy người tham gia tuân theo đáp án sai của nhóm (dù câu trả lời đúng rất rõ ràng) trong khoảng **32–37%** số lần thử then chốt, với khoảng **75%** người tham gia tuân theo ít nhất một lần – trong khi điều kiện đối chứng (không có áp lực nhóm) gần như không có sai sót. Hai cơ chế giải thích: **ảnh hưởng xã hội chuẩn tắc (normative)** – muốn được chấp nhận, tránh bị từ chối – và **ảnh hưởng xã hội thông tin (informational)** – thật sự tin nhóm có thông tin đúng hơn, nhất là khi tình huống mơ hồ. **Sự vâng theo yêu cầu (compliance)**: kỹ thuật "chân đã vào cửa (foot-in-the-door)" của **Freedman and Fraser (1966)** cho thấy người đồng ý với một yêu cầu nhỏ trước đó (như treo biển hiệu nhỏ) sau này dễ đồng ý với yêu cầu lớn hơn nhiều (như dựng biển quảng cáo to xấu trước sân) hơn hẳn so với nhóm chỉ được hỏi yêu cầu lớn ngay từ đầu (khoảng 76% so với 17%). **Tư duy nhóm (groupthink)** theo **Janis (1972)**: các nhóm gắn kết cao, chịu áp lực đồng thuận nhanh và có lãnh đạo chỉ đạo mạnh, dễ triệt tiêu tư duy phản biện – minh hoạ qua vụ hoạch định cuộc đổ bộ Vịnh Con Lợn (Bay of Pigs, 1961) của chính quyền Kennedy, với các triệu chứng như ảo tưởng bất khả chiến bại, tự kiểm duyệt ý kiến, và ảo tưởng đồng thuận tuyệt đối. Janis cũng đề xuất các biện pháp khắc phục: chỉ định luân phiên một người đóng vai "phản biện" (devil's advocate), lãnh đạo nên giữ ý kiến riêng cho đến cuối buổi thảo luận, chia nhóm nhỏ độc lập để đưa ra phương án riêng trước khi họp lại, và mời chuyên gia bên ngoài phản biện các giả định của nhóm.

(!) Lỗi thường gặp: Conformity to peers and obedience to authority are related but conceptually **distinct** forms of social influence, and IB exam questions frequently penalize answers that conflate them. Conformity (Asch, 1951) involves horizontal pressure from equal-status peers in an unstructured group, and can occur even with no explicit instruction to comply. **Obedience** – studied experimentally by **Milgram (1963)**, whose paradigm and its serious ethical

problems are examined in full in the Research Methodology and Ethics unit – instead involves a vertical, explicit instruction from a perceived legitimate authority figure. Never answer a question specifically about conformity using only Milgram's obedience study, or vice versa.

4.4 Stereotypes: formation and effects

A **stereotype** is a generalized, oversimplified belief about the characteristics, traits, or behaviour of members of a social group, applied to individual members of that group regardless of their actual individual variation. Functionally, a stereotype acts as a kind of cognitive shortcut or **schema** about a social category: it lets a perceiver make rapid (if often inaccurate) inferences about a stranger based on group membership alone, at the cost of ignoring real individual differences within the group. Stereotypes are of central interest to sociocultural psychologists both because of how readily and automatically they seem to form, and because of the measurable effects they can have on the very people they target. The two studies below illustrate two quite different loci at which stereotypes operate: **Hamilton and Gifford (1976)** shows how a stereotype can form purely inside a *perceiver's* cognitive system, from ordinary information-processing biases, with no real underlying group difference required at all; **Steele and Aronson (1995)** shows how an already-existing stereotype can, in turn, measurably impair the real-time *performance* of the very people it targets, entirely independent of their actual ability.

4.4.1 Formation: illusory correlation

Ví dụ mẫu · Worked example

Hamilton and Gifford (1976) tested a purely cognitive explanation for how stereotypes about minority groups can form, without any real underlying difference between groups and without any prior contact, competition, or motivated bias. Participants read a long series of individual behavioural statements, each describing something a member of "Group A" or "Group B" had done. Group A was described with roughly twice as many total statements as Group B (26 statements about Group A versus 13 about Group B, making Group A the numerical **majority** and Group B the **minority**), but crucially, the *proportion* of desirable to undesirable behaviours described was held **identical** across both groups (a ratio of roughly nine desirable behaviours to every four undesirable ones, in both Group A and Group B) – Group B members were not, in the data actually presented, any more likely to behave undesirably than Group A members. Despite this, when later asked to estimate how frequently each group had performed undesirable behaviours, participants significantly **overestimated** how often the minority Group B had behaved undesirably, forming what Hamilton and Gifford called an **illusory correlation** between minority-group membership and undesirable behaviour – a statistical association that did not actually exist anywhere in the material participants had read. The explanation offered was purely cognitive: both "being in the numerically rarer group" and "behaving undesirably" (which was also numerically rarer than desirable behaviour overall) are **distinctive**, low-frequency events, and the co-occurrence of two distinctive, salient events is disproportionately memorable and easy to retrieve later – even though it is no more statistically frequent than any other pairing. The study shows that a stereotype linking a minority group to a negative trait can emerge purely from the cognitive salience of rare co-occurrences, with no real correlation, prior contact, or intergroup conflict required at all.

4.4.2 Effects on behaviour: stereotype threat

Ví dụ mẫu · Worked example

Steele and Aronson (1995) investigated whether awareness of a negative stereotype about one's own group's intellectual ability could itself impair performance, independent of a person's actual underlying ability. Black and White university students completed a difficult, standardized verbal test. In the **diagnostic** condition, the test was explicitly described to participants as a genuine, valid measure of their intellectual ability; in the **non-diagnostic** condition, the identical test was instead described as a non-evaluative laboratory exercise in problem solving, unrelated to ability. In the diagnostic condition, Black participants scored significantly **lower** than White participants, even after statistically controlling for prior academic ability (e.g., entering test scores); in the non-diagnostic condition, using the exact same test, this performance gap effectively **disappeared**. Steele and Aronson interpreted this pattern as evidence for **stereotype threat**: the extra cognitive and emotional burden of anxiety generated by the fear of confirming a negative stereotype about one's own group, which consumes attention and working-memory resources that would otherwise be available for the task itself, thereby impairing performance – a situational effect entirely separate from a person's actual, underlying ability.

VN **GIẢI THÍCH TIẾNG VIỆT**

Định kiến rập khuôn (stereotype): niềm tin khái quát hoá, đơn giản hoá quá mức về đặc điểm của một nhóm xã hội, áp dụng cho từng cá nhân bất kể sự khác biệt thật sự – hoạt động như một "lối tắt nhận thức" (schema) về nhóm. **Sự hình thành**: nghiên cứu của **Hamilton and Gifford (1976)** cho thấy **tương quan ảo (illusory correlation)** có thể hình thành hoàn toàn do nhận thức – khi tỉ lệ hành vi tốt/xấu giữa nhóm đa số (Group A) và nhóm thiểu số (Group B) là NHƯ NHAU trong dữ liệu, người tham gia vẫn đánh giá quá cao tần suất hành vi xấu của nhóm thiểu số, vì sự kết hợp giữa hai điều "hiếm gặp" (nhóm thiểu số + hành vi xấu) gây ấn tượng và dễ nhớ hơn. **Tác động**: nghiên cứu của **Steele and Aronson (1995)** cho thấy **đe doạ định kiến (stereotype threat)** – khi bài kiểm tra được mô tả là đo lường năng lực trí tuệ thật sự, sinh viên da đen làm bài kém hơn sinh viên da trắng, nhưng khoảng cách này biến mất khi CÙNG bài kiểm tra được mô tả là không đánh giá năng lực – chứng minh sự lo lắng vì sợ xác nhận định kiến tiêu cực về nhóm mình có thể làm giảm hiệu suất, hoàn toàn độc lập với năng lực thật sự.

(!) Lỗi thường gặp: IB exam answers routinely lose marks by treating **stereotype**, **prejudice**, and **discrimination** as interchangeable terms – they are not, and the distinction is a favourite examiner trap. A **stereotype** is a *cognitive* belief or schema about a group ("members of group X are Y"). **Prejudice** is an *affective* (emotional) attitude toward a group, typically negative, that often rests on a stereotype but adds a feeling component (e.g., dislike, fear, resentment). **Discrimination** is the *behavioural* expression of prejudice – actual unfair treatment of members of a group. A person can hold a stereotype without feeling prejudice, and can feel prejudice without ever acting on it through discrimination (for example, because of social or legal constraints) – cognition, affect, and behaviour are three separable components, and a full-credit answer should never merge them into a single undifferentiated concept. When an exam question asks specifically about *behaviour* (e.g., unequal treatment, exclusion, harassment), the correct term is discrimination; a question about an *emotional* reaction calls for prejudice; and a question about a *belief or generalization* calls for stereotype – matching the command term to the correct component is often exactly what separates a full-credit answer from a partial one.

4.5 Reducing prejudice: the contact hypothesis

Identifying how stereotypes and prejudice form and operate is only half of the sociocultural picture; an equally important applied question is how prejudice, once established between groups, might actually be **reduced**. The single most influential and most extensively tested answer to this question is Gordon **Allport's (1954) contact hypothesis** (also known as **intergroup contact theory**), which proposes that direct contact between members of different social or ethnic groups can reduce the prejudice each group holds toward the other. Crucially, Allport did not claim that contact of *any* kind reliably reduces prejudice; he argued this benefit depends on the contact taking place under specific, favourable conditions, and that contact lacking these conditions may fail to reduce prejudice, or may even make it worse.

Khái niệm cốt lõi

Allport's (1954) contact hypothesis proposes that bringing members of different social groups into direct contact can reduce the prejudice between them, provided the contact situation satisfies four key conditions. (1) **Equal status**: within the contact situation itself, members of both groups should hold equal status, rather than one group occupying a clearly superior or subordinate position relative to the other. (2) **Common goals**: the groups should be working toward a shared goal that genuinely matters to both of them, rather than pursuing entirely separate or unrelated aims that give them no real reason to engage with one another. (3) **Intergroup cooperation**: members of the two groups should have to cooperate with, and depend on, one another in order to achieve that shared goal, rather than compete against one another for it. (4) **Support of authorities, law, or custom**: the contact should be explicitly sanctioned and actively supported by relevant authorities, institutions, laws, or social norms, rather than merely tolerated, discouraged, or left entirely unsupported. Allport argued that contact meeting all four conditions tends to reduce prejudice because it allows members of each group to encounter concrete, individuating information about specific out-group members, to directly disconfirm negative stereotypes through first-hand experience, and to build genuine interpersonal relationships that cut across the original group boundary. By contrast, contact that lacks these conditions – for instance, contact that is unequal in status, or that is explicitly competitive rather than cooperative – may fail to reduce prejudice at all, and in some circumstances can actually increase it, for example by appearing to confirm an existing negative stereotype about the out-group.

Ví dụ mẫu · Worked example

Pettigrew and Tropp (2006) conducted a very large-scale **meta-analysis** directly testing the contact hypothesis, statistically combining the results of more than **500** separate studies, involving several hundred thousand participants across many different countries, in which the amount of intergroup contact a person had experienced was measured against their level of prejudice toward the relevant out-group. Across this very large pooled dataset, greater intergroup contact was reliably associated with **lower** prejudice overall, and this general pattern held across a strikingly wide range of different intergroup contexts, including contact based on race and ethnicity, sexual orientation, age, disability, and mental illness. Consistent with Allport's original theory, Pettigrew and Tropp also found that the reduction in prejudice associated with contact was significantly **stronger** in studies whose contact situations more closely matched Allport's proposed optimal conditions (equal status, common goals, intergroup cooperation, and institutional support) than in studies where these conditions were largely absent – although even studies that did not explicitly satisfy Allport's conditions still tended to show some prejudice-reducing effect of contact on average. Because the analysis statistically pooled such a very large number of independent studies, conducted across many different countries

and many different types of intergroup relationship, it provided considerably stronger and more generalizable support for the contact hypothesis than any single study could ever offer on its own, while also empirically confirming that Allport's specific conditions genuinely matter, rather than being merely a theoretical add-on with no real predictive value.

VN GIẢI THÍCH TIẾNG VIỆT

Giả thuyết tiếp xúc (contact hypothesis) của **Allport (1954)**, còn gọi là **lý thuyết tiếp xúc liên nhóm (intergroup contact theory)**, cho rằng sự tiếp xúc trực tiếp giữa các thành viên của những nhóm xã hội/dân tộc khác nhau có thể làm giảm định kiến (prejudice) giữa họ – nhưng chỉ khi sự tiếp xúc diễn ra trong những điều kiện thuận lợi nhất định. Bốn điều kiện đó là: (1) **địa vị bình đẳng (equal status)** giữa hai nhóm trong tình huống tiếp xúc; (2) **mục tiêu chung (common goals)** mà cả hai nhóm cùng thật sự hướng tới; (3) **hợp tác giữa các nhóm (intergroup cooperation)** thay vì cạnh tranh với nhau; và (4) **sự ủng hộ của chính quyền, luật pháp, hoặc chuẩn mực xã hội (support of authorities, law, or custom)** đối với sự tiếp xúc đó. Nếu thiếu những điều kiện này – ví dụ: tiếp xúc trong tình huống địa vị không bình đẳng hoặc mang tính cạnh tranh – sự tiếp xúc có thể không làm giảm định kiến, thậm chí có thể khiến định kiến tăng lên. Nghiên cứu tổng hợp (meta-analysis) của **Pettigrew and Tropp (2006)**, gộp hơn **500** nghiên cứu với hàng trăm nghìn người tham gia ở nhiều quốc gia, cho thấy tiếp xúc giữa các nhóm càng nhiều thì định kiến càng **thấp** – và kết quả này đúng trên nhiều bối cảnh khác nhau: chủng tộc/dân tộc, xu hướng tính dục, tuổi tác, khuyết tật, và bệnh tâm thần. Đúng như lý thuyết của Allport dự đoán, mức giảm định kiến này mạnh nhất ở những nghiên cứu có điều kiện tiếp xúc gần với bốn điều kiện lý tưởng nói trên (địa vị bình đẳng, mục tiêu chung, hợp tác, được thể chế ủng hộ) – cung cấp bằng chứng thực nghiệm mạnh mẽ cho giả thuyết tiếp xúc của Allport trên quy mô rất lớn.

(!) Lỗi thường gặp: Do not assume that mere physical proximity or superficial contact between members of different groups is, by itself, sufficient to reduce prejudice – this is a common and heavily penalized oversimplification of Allport's theory. Allport's (1954) contact hypothesis explicitly specifies that contact must meet particular conditions (equal status, common goals, intergroup cooperation, and institutional support) in order to reliably reduce prejudice; contact that lacks these conditions may have no measurable effect on prejudice at all, or can in some cases actually **reinforce** it – for example, brief or superficial contact that leaves an existing status inequality between the groups fully intact, or that places the two groups in direct competition for some scarce resource, can end up confirming rather than disconfirming a pre-existing negative stereotype. When answering an exam question about the contact hypothesis, always specify *which* of Allport's conditions is present or absent in the scenario described, rather than treating "contact" as a single undifferentiated variable that automatically reduces prejudice regardless of the circumstances under which it occurs.

4.6 Culture and cultural dimensions

Khái niệm cốt lõi

Hofstede (1980) conducted one of the most influential large-scale studies in cross-cultural psychology, statistically analysing survey responses from over 100,000 employees of a single multinational company (IBM) working across dozens of different countries. Because all respondents worked for the same employer, doing broadly comparable jobs, national differences in survey responses could be attributed to underlying cultural differences rather than

to differences in occupation or organizational context. From this data, Hofstede identified several relatively stable **cultural dimensions** along which national cultures differ systematically. **Individualism versus collectivism** describes the degree to which a culture emphasizes the autonomous individual and their personal achievements and rights (individualism) versus the interconnected group – extended family, community, organization – and the obligations owed to it (collectivism). **Power distance** describes the degree to which a culture accepts and expects an unequal distribution of power between, for example, superiors and subordinates, or the young and the old. **Uncertainty avoidance** describes the degree to which a culture is uncomfortable with ambiguity and unstructured situations, and therefore relies on formal rules, structure, and predictability to reduce that discomfort. **Masculinity versus femininity** describes the degree to which a culture emphasizes traditionally "masculine" values (competitiveness, assertiveness, material success) versus traditionally "feminine" values (cooperation, modesty, quality of life). These dimensions are properties of *cultures as a whole*, expressed as average scores across a large population, not fixed descriptions of any single individual within that culture. Later extensions of this framework – for example, Hofstede's later collaborative work with Bond (1988) – added further dimensions, such as **long-term versus short-term orientation** (a culture's emphasis on pragmatic, future-oriented adaptation of tradition versus preserving long-standing, time-honoured norms); the original four 1980 dimensions above, however, remain the most extensively studied at introductory level and are the dimensions most directly linked to the conformity research described below.

Ví dụ mẫu · Worked example

Bond and Smith (1996) conducted a large-scale **meta-analysis** combining the results of **133** separate replications of Asch's conformity paradigm, conducted across **17** different countries over several decades. Rather than simply averaging conformity rates worldwide, Bond and Smith examined whether a country's average level of conformity in these studies correlated with that country's position on Hofstede's individualism-collectivism dimension. They found that studies conducted in more **collectivist** cultures reported significantly **higher** conformity rates on the Asch task than studies conducted in more **individualist** cultures. This finding is important for two reasons: first, it shows that Asch's classic conformity effect, though originally demonstrated in the United States, is not culturally universal in its magnitude – the strength of conformity varies meaningfully with cultural context; and second, because the analysis pooled 133 independent studies rather than relying on any single sample, it provided far stronger and more generalizable evidence linking a specific cultural dimension (individualism-collectivism) to an actual, measurable behavioural difference than any single cross-cultural study could have offered alone. Bond and Smith also observed that conformity rates in studies conducted within the United States itself appeared to decline somewhat between the 1950s and the 1990s, a reminder that a culture's average values are not perfectly static over time either, and can shift within a single society across decades, not only differ between different societies at a single point in time.

GIẢI THÍCH TIẾNG VIỆT

VN **Hofstede (1980)** phân tích dữ liệu khảo sát hơn 100.000 nhân viên IBM ở hàng chục quốc gia, xác định các **chiều văn hoá (cultural dimensions)**: **cá nhân chủ nghĩa–tập thể chủ nghĩa (individualism–collectivism)**, **khoảng cách quyền lực (power distance)**, **né tránh sự không chắc chắn (uncertainty avoidance)**, và **nam tính–nữ tính (masculinity–femininity)**. Đây là đặc điểm của **cả một nền văn hoá** (điểm số trung bình), không phải mô tả cố định cho từng cá nhân. Nghiên cứu meta-phân tích của **Bond and Smith (1996)** gộp **133** nghiên cứu lặp lại mô hình

Asch ở **17** quốc gia, phát hiện các nền văn hoá **tập thể** có tỉ lệ tuân thủ số đông (conformity) cao hơn đáng kể so với các nền văn hoá **cá nhân** – bằng chứng mạnh cho thấy chiều văn hoá của Hofstede liên hệ thực sự với sự khác biệt hành vi có thể đo lường được. Bond and Smith cũng ghi nhận tỉ lệ tuân thủ ở Hoa Kỳ có xu hướng giảm dần từ thập niên 1950 đến 1990 – cho thấy giá trị trung bình của một nền văn hoá cũng có thể thay đổi theo thời gian, chứ không chỉ khác nhau giữa các quốc gia tại một thời điểm.

(!) Lỗi thường gặp: Hofstede's cultural dimensions describe **population-level averages**, not deterministic predictions about any specific individual – treating a national dimension score as if it fully described every person from that country is an **ecological fallacy**. A country classified as "collectivist" on average still contains enormous individual variation, and a specific individual from that country can easily be more individualist than the average person from an "individualist" country. Exam answers should describe cultural dimensions as statistical tendencies across large groups, never as fixed rules governing every member of a culture. A well-constructed exam response can strengthen this point by naming the error explicitly as an **ecological fallacy** – the mistake of assuming that a pattern true of a group *on average* must also be true of every individual member of that group.

4.7 Enculturation and acculturation

Khái niệm cốt lõi

Enculturation is the lifelong process by which a person learns and internalizes the norms, values, beliefs, and everyday behaviours of their own surrounding culture, typically beginning at birth and continuing through childhood via agents such as family, school, peers, and media – so gradually and pervasively that the resulting norms often feel to the individual like simple "common sense" rather than one particular culture's choices among many possible alternatives. **Family** typically transmits enculturation most directly in early childhood, through direct instruction, modelling, and the reward or correction of behaviour consistent with cultural norms; **schools** formalize and extend this process by explicitly teaching a culture's shared history, language, and civic values; **peer groups** become an increasingly powerful additional source of enculturation during adolescence, as conformity to peer norms intensifies; and **media** (broadcast, and increasingly online and social media) transmits cultural narratives, role models, and norms even to individuals with little or no direct personal contact with the people or institutions producing that media. **Acculturation**, by contrast, refers to the psychological and behavioural changes that occur as a result of sustained, ongoing contact between individuals from different cultural backgrounds – most commonly studied in the context of migration, when a person moves from their heritage culture into a new host culture. **Berry's (1997) model of acculturation** proposes that how an individual navigates this contact can be described by their answers to two largely independent questions: is it considered important to *maintain* the values, traditions, and identity of one's heritage culture? And is it considered important to *adopt* relationships and participation in the wider host society? Crossing these two questions produces four distinct acculturation strategies. **Integration** (yes to both) involves maintaining meaningful aspects of one's heritage culture while also actively participating in and adopting valued aspects of the host culture; across Berry's research, integration is consistently associated with the most favourable psychological and socio-cultural adjustment outcomes. **Assimilation** (adopt the host culture, abandon the heritage culture) involves relinquishing one's original cultural identity in favour of full absorption into the host culture. **Separation** (maintain the heritage culture, reject the host culture) involves preserving one's original culture while de-

liberately minimizing contact with, or participation in, the host society. **Marginalization** (reject both) involves neither maintaining meaningful ties to one's heritage culture nor establishing them with the host culture, and is consistently associated, across Berry's research, with the poorest psychological and socio-cultural outcomes of the four strategies.

Strategy	Maintain heritage culture?	Adopt host culture?	Typical outcome
Integration	Yes	Yes	Generally the best psychological and socio-cultural adjustment
Assimilation	No	Yes	Full absorption into host culture; heritage identity relinquished
Separation	Yes	No	Heritage culture preserved; minimal engagement with host society
Marginalization	No	No	Generally the poorest adjustment of the four strategies

Berry's (1997) four acculturation strategies, defined by two largely independent questions about maintaining heritage culture and adopting the host culture.

Ví dụ mẫu · Worked example

Berry's own research programme, reviewing acculturation outcomes among immigrant and refugee populations (including extensive fieldwork with immigrant groups in Canada), examined how the four acculturation strategies related to two distinct outcome measures: **psychological adaptation** (subjective wellbeing, life satisfaction, and low psychological stress) and **socio-cultural adaptation** (practical competence in managing daily social interactions, work, and institutions within the new society). Across this body of research, individuals who adopted an **integration** strategy – maintaining valued elements of their heritage culture's identity, language, and traditions while simultaneously building relationships with and participating actively in the host society – consistently reported the best outcomes on both measures. Individuals who experienced **marginalization** – rejecting or losing their heritage culture without ever being accepted into or engaging with the host culture – consistently showed the poorest outcomes on both measures, often accompanied by higher rates of psychological distress. Berry's model has also been used to highlight that acculturation outcomes are shaped not only by the migrant's own preferred strategy but by whether the host society itself is welcoming of cultural maintenance (a genuinely multicultural society makes integration realistically available) or instead pressures migrants toward assimilation or exclusion – meaning acculturation should be understood as a joint outcome of both the individual and the receiving society, and factors such as perceived discrimination and the availability of social support can substantially worsen or improve outcomes independent of the strategy itself.

Because integration requires an individual to function competently within two cultural frames of reference at once, researchers sometimes describe successful integrators as developing **bi-cultural competence** – the practical ability to shift comfortably between heritage-culture and host-culture norms, languages, and social expectations depending on context, rather than experiencing the two cultures as a forced, zero-sum choice. This helps explain why integration is so consistently linked to better outcomes than the other three strategies in Berry's framework: unlike assimilation or separation, it does not require an individual to give up an entire, previously meaningful source of identity, language, and social support in order to gain acceptance or stability elsewhere.

VN GIẢI THÍCH TIẾNG VIỆT

Nhập văn hoá (enculturation) là quá trình học và nội tâm hoá chuẩn mực, giá trị, hành vi của chính nền văn hoá mình đang sống, thường bắt đầu từ khi sinh ra qua các "tác nhân" như **gia đình** (dạy trực tiếp, làm gương, thưởng/phạt), **trường học** (dạy lịch sử, ngôn ngữ, giá trị công dân một cách chính thức), **nhóm bạn đồng trang lứa** (ảnh hưởng mạnh hơn ở tuổi vị thành niên), và **truyền thông** (kể cả khi không tiếp xúc trực tiếp với người tạo ra nó). **Hội nhập văn hoá (acculturation)** là sự thay đổi tâm lý/hành vi do tiếp xúc lâu dài với một nền văn hoá khác (ví dụ khi di cư). Mô hình của **Berry (1997)** đưa ra bốn chiến lược dựa trên hai câu hỏi (có coi trọng giữ văn hoá gốc không? có coi trọng hoà nhập văn hoá mới không?): **hoà nhập (integration)** (cả hai – kết quả tâm lý tốt nhất), **đồng hoá (assimilation)** (chỉ theo văn hoá mới, từ bỏ văn hoá gốc), **tách biệt (separation)** (chỉ giữ văn hoá gốc, từ chối văn hoá mới), và **bên lề hoá (marginalization)** (từ chối cả hai – kết quả thường kém nhất). Nghiên cứu của Berry trên người nhập cư cho thấy chiến lược hoà nhập cho kết quả thích nghi tâm lý và xã hội tốt nhất, còn bên lề hoá cho kết quả kém nhất trên cả hai phương diện.

4.8 Culture and cognition

Khái niệm cốt lõi

Markus and Kitayama (1991) proposed that culture shapes not just surface-level customs but the very structure of the **self-concept** itself, with consequences for cognition, emotion, and motivation. An **independent self-construal** – typically fostered in individualist, largely Western cultural contexts – defines the self as a separate, bounded, autonomous entity, whose identity is grounded in a set of unique, relatively stable internal traits, abilities, and preferences that remain consistent across different social contexts; personal achievement, self-expression, and standing out from the group are valued and experienced as self-relevant, motivating goals. An **interdependent self-construal** – typically fostered in many East Asian, African, and Latin American, and other collectivist cultural contexts – instead defines the self as fundamentally relational: the self is experienced as inherently connected to, and partly defined through, one's relationships, roles, and group memberships, such that fitting in, maintaining social harmony, and fulfilling relational obligations are experienced as core, self-relevant motivating goals, rather than as external constraints imposed on an otherwise separate self. Because these two construals differ in what counts as personally meaningful and self-relevant, Markus and Kitayama argued they can produce systematically different patterns of attention, memory, emotional experience, and motivation – for example, shaping whether a person is more motivated by tasks framed around personal achievement or around group harmony and relational obligation. A concrete illustration: a competitive academic ranking system that publicly highlights individual top performers may function as a highly motivating, self-relevant goal for someone with a more independent self-construal, whereas a cooperative, group-based recognition system that rewards an entire class or team collectively may be experienced as more moti-

vating and meaningful by someone with a more interdependent self-construal – not because one person values achievement less than the other, but because what counts as a personally meaningful achievement is partly defined relationally rather than individually.

Dimension	Independent self-construal	Interdependent self-construal
Typical cultural context	Individualist (many Western societies)	Collectivist (many East Asian, African, Latin American societies)
View of the self	Separate, bounded, defined by stable internal traits	Relational, defined through roles and relationships
Source of self-esteem	Personal achievement, self-expression	Fulfilling relational roles, group harmony
Self-relevant, motivating goal	Standing out, asserting one's own preferences	Fitting in, maintaining harmony, meeting obligations

Markus and Kitayama's (1991) independent versus interdependent self-construal: two culturally shaped templates for what the self fundamentally *is*, with downstream effects on cognition, emotion, and motivation.

Ví dụ mẫu · Worked example

Cole, Gay, Glick, and Sharp (1971) studied **Kpelle** rice farmers in Liberia to investigate whether categorization strategies long assumed by Western developmental psychology to reflect a universal cognitive stage were in fact shaped by culture and everyday practical activity. Participants were given a set of familiar everyday objects – foods, tools, articles of clothing, and so on – and asked to sort them into groups of things that belonged together. Most Western-educated participants, given the same task, spontaneously sort items into **taxonomic categories** (grouping all tools together, all foods together, and so on). Kpelle adults, however, spontaneously sorted the objects by **function** instead – for example, placing a knife together with an orange, reasoning that a knife is used to cut an orange, rather than grouping the knife with other tools. When the researchers, initially interpreting this as a cognitive limitation, grew frustrated and explicitly asked participants to sort the objects "the way a fool would do it," many participants then readily produced the taxonomic, category-based groupings that Western participants typically produce spontaneously. This is a striking and important result: it shows that the taxonomic sorting strategy was fully **available** to Kpelle participants all along, but was simply not their spontaneously preferred, habitual way of organizing everyday objects. The study illustrates that habitual cognitive and categorization strategies can be shaped by culture and by the practical, everyday activities a community actually engages in (here, functional groupings tied to rice farming and daily practical tasks), rather than reflecting a fixed, universal developmental stage that all humans necessarily pass through in the same way.

GIẢI THÍCH TIẾNG VIỆT

VN

Markus and Kitayama (1991) đề xuất hai kiểu **cấu trúc bản ngã (self-construal)**: **bản ngã độc lập (independent)** – phổ biến ở văn hoá cá nhân chủ nghĩa (phương Tây), cái tôi được định nghĩa qua đặc điểm nội tại ổn định, coi trọng thành tựu cá nhân; và **bản ngã phụ thuộc lẫn nhau (interdependent)** – phổ biến ở nhiều văn hoá tập thể (Đông Á, châu Phi, Mỹ Latinh), cái tôi được định nghĩa qua các mối quan hệ và vai trò xã hội, coi trọng sự hoà hợp nhóm. Sự khác biệt này ảnh hưởng đến nhận thức, cảm xúc và động lực – ví dụ, một hệ thống xếp hạng học tập cạnh tranh, tôn vinh cá nhân xuất sắc nhất có thể tạo động lực mạnh cho người có bản ngã độc lập, trong khi một hệ thống khen thưởng tập thể (cả nhóm/lớp) lại có ý nghĩa và tạo động lực hơn cho người có bản ngã phụ thuộc lẫn nhau. Nghiên cứu của **Cole, Gay, Glick,**

and Sharp (1971) trên nông dân trồng lúa người Kpelle ở Liberia cho thấy họ tự nhiên sắp xếp đồ vật theo **chức năng** (ví dụ: dao đi cùng cam vì dao dùng để cắt cam) thay vì theo **phân loại (taxonomic)** như người phương Tây có học vấn thường làm – nhưng khi được yêu cầu sắp xếp "theo cách một kẻ ngốc sẽ làm", họ lại dễ dàng tạo ra cách phân loại kiểu phương Tây. Điều này chứng minh chiến lược phân loại vẫn **có sẵn** nhưng không phải là cách được ưa chuộng một cách tự nhiên – cho thấy chiến lược nhận thức bị định hình bởi văn hoá và hoạt động thực tiễn hằng ngày, chứ không phải một giai đoạn phát triển nhận thức phổ quát, cố định.

(!) Lỗi thường gặp: Do not interpret the Kpelle result as evidence of a cognitive **deficit** or a "lower" developmental stage. The critical detail is that when explicitly asked to sort "the way a fool would," Kpelle participants readily produced taxonomic groupings – proving the strategy was available all along, simply not their spontaneous everyday preference. This is exactly the kind of finding the WEIRD sampling critique (Henrich, Heine, and Norenzayan, 2010, covered in the Research Methodology and Ethics unit) warns about: a cognitive pattern first observed in Western, educated samples can be wrongly assumed to be a universal stage of human cognition, when it may instead be one culturally and practically shaped strategy among several genuinely available ones. The correct exam-ready conclusion is that Kpelle participants demonstrated *cognitive flexibility*, not cognitive limitation: they could deploy either strategy, and simply defaulted to the one better suited to their everyday practical activity.

4.9 Problem Bank

Bài tập luyện tập

According to Tajfel and Turner's (1979) social identity theory, which sequence correctly places the three processes that generate in-group favouritism?

(A) Social comparison → social categorization → social identification

(B) Social categorization → social identification → social comparison

(C) Social identification → social comparison → social categorization

(D) Social categorization → social comparison → social identification

Lời giải chi tiết

Social identity theory proposes that a person first sorts the social world into "us" and "them" (**social categorization**), then adopts the norms and identity of their own group once categorized as a member (**social identification**), and finally compares their in-group favourably against relevant out-groups to protect self-esteem (**social comparison**). **(B)**.

Bài tập luyện tập

In Tajfel, Billig, Bundy, and Flament's (1971) minimal group study, British schoolboys were assigned to groups based on a trivial stated preference between paintings by Klee and Kandinsky. What was the key finding?

(A) Boys refused to allocate any points to either group

(B) Boys allocated more reward to anonymous in-group members than out-group members, despite no prior contact or real conflict of interest

(C) Boys allocated points completely randomly, showing no bias

(D) Boys allocated more points to the out-group to appear fair

Lời giải chi tiết

Even though boys never met the members of either group, had no history of competition, and had no personal stake in the outcome, they still consistently allocated more reward money to anonymous **in-group** members than to out-group members, and often maximized the relative difference in the in-group's favour. This shows that **mere categorization** into arbitrary groups is sufficient on its own to produce in-group bias. **(B)**.

Bài tập luyện tập

According to Bandura (1977), which of the following best defines self-efficacy?

(A) A general personality trait of overall self-confidence that applies equally across all situations

(B) A person's belief in their own capability to successfully execute a specific behaviour needed to achieve a particular outcome

(C) The tendency to imitate any behaviour observed in a model, regardless of its consequences

(D) The amount of reinforcement a person has personally received for a behaviour in the past

Lời giải chi tiết

Self-efficacy is specifically a belief about one's capability to succeed at a *particular task or domain*, not a general trait of confidence that applies uniformly everywhere (ruling out A). It influences whether an observed, learned behaviour is actually attempted and persisted at, independent of whether the person has personally been reinforced for it before. **(B)**.

Bài tập luyện tập

In Bandura, Ross, and Ross's (1961) Bobo doll study, children who observed an aggressive adult model later performed a number of aggressive acts that the model itself had never actually demonstrated. What does this specific finding best support?

(A) Children were directly reinforced for these new aggressive acts by the researchers

(B) Genuine, generalized observational learning occurred, rather than simple mechanical copying of the exact modelled actions

(C) The children had learned the acts before the study began

(D) The Bobo doll caused frustration on its own, independent of the model

Lời giải chi tiết

Because the children displayed **novel** aggressive acts that the model never actually performed, and received no direct reinforcement themselves, the finding cannot be explained by simple imitation-for-reward or exact mechanical copying – it instead supports **genuine, generalized**

observational learning, consistent with Bandura's social cognitive theory. **(B)**.

Bài tập luyện tập

Averaged across all critical trials in Asch's (1951) line-judgment study, roughly what proportion of responses conformed to the confederates' unanimous, incorrect answer?

(A) Under 1%
(B) 32–37%
(C) About 65%
(D) Nearly 100%

Lời giải chi tiết

Asch found that genuine participants conformed to the incorrect majority answer on roughly **32–37%** of critical trials on average (with about 75% of participants conforming at least once across the whole study), while a no-pressure control condition produced errors on under 1% of trials. **(B)**.

Bài tập luyện tập

A participant privately believes Line B is the correct match but publicly states "Line C" to avoid standing out from a unanimous group, while still privately believing Line B is correct. This is best explained by:

(A) Informational social influence, because the participant has adopted the group's belief
(B) Normative social influence, because the participant complies publicly to avoid social rejection without any genuine change in private belief
(C) Groupthink, because the participant is part of a decision-making committee
(D) Stereotype threat, because the task involves a group judgement

Lời giải chi tiết

Because the participant's **private** belief never actually changes, but they publicly comply anyway to avoid the discomfort of disagreeing with a unanimous group, this is a clear case of **normative social influence** – conforming for social acceptance, not because the group is believed to have better information. **(B)**.

Bài tập luyện tập

Freedman and Fraser (1966) found that homeowners who first agreed to display a small sign were far more likely later to agree to install a large, unattractive billboard than homeowners approached directly with only the large request. This result is best described as evidence for:

(A) Groupthink
(B) The foot-in-the-door compliance technique
(C) Stereotype threat
(D) Illusory correlation

Lời giải chi tiết

Agreeing to a small initial request first, and this increasing later compliance with a larger, related request, is precisely the definition of the **foot-in-the-door technique** – a compliance

phenomenon, distinct from conformity, groupthink, or cognitive biases like illusory correlation. **(B)**.

Bài tập luyện tập

Janis's (1972) analysis of the Bay of Pigs invasion planning (1961) identified which of the following as a symptom of groupthink?

(A) Excessive external consultation with outside experts before the decision

(B) An illusion of unanimity and self-censorship, where doubts were suppressed rather than voiced to the group

(C) A formal vote in which every advisor's dissent was individually recorded

(D) A complete absence of group cohesion among Kennedy's advisors

Lời giải chi tiết

Janis identified symptoms including an **illusion of unanimity** (silence misread as agreement) and **self-censorship** (advisors suppressing their own private doubts rather than voicing them) as central to how a highly cohesive, insulated advisory group approved a poorly-vetted plan – the opposite of options describing external consultation or recorded dissent. **(B)**.

Bài tập luyện tập

Which of the following best defines a "stereotype" as used in psychology?

(A) A negative emotional reaction toward members of a particular group

(B) A generalized, oversimplified belief about the characteristics of a social group, applied to individual members regardless of real variation

(C) An unfair behavioural act committed against a member of a group

(D) A style of leadership associated with groupthink

Lời giải chi tiết

A **stereotype** is specifically a *cognitive* belief or generalization about a group ("members of group X have trait Y"), distinct from the emotional reaction (prejudice) or the behavioural act (discrimination) that may or may not follow from it. **(B)**.

Bài tập luyện tập

In Hamilton and Gifford's (1976) illusory correlation study, the proportion of desirable to undesirable behaviours described was identical for majority Group A and minority Group B. What did participants nonetheless conclude?

(A) Group A and Group B were equally likely to behave undesirably, exactly matching the data

(B) The minority Group B was more likely to behave undesirably than the data actually showed

(C) Group A was more likely to behave undesirably than Group B

(D) Neither group's behaviour could be evaluated at all

Lời giải chi tiết

Even though the proportion of desirable to undesirable behaviours was held identical for both groups, participants still **overestimated** how often the numerically rarer, minority Group B performed undesirable behaviours – an **illusory correlation** explained by the cognitive salience of two distinctive, low-frequency events (minority membership and undesirable behaviour) co-occurring. **(B)**.

Bài tập luyện tập

In Steele and Aronson's (1995) study, why did the Black-White performance gap on a difficult verbal test disappear when the identical test was described as non-diagnostic of ability rather than diagnostic?

(A) The non-diagnostic test was objectively easier

(B) Removing the framing of the test as measuring intellectual ability reduced the anxiety associated with confirming a negative stereotype, removing the impairing effect of stereotype threat

(C) Participants were given more time to complete the non-diagnostic version

(D) The non-diagnostic condition used a completely different sample of participants

Lời giải chi tiết

Because the test itself was identical in both conditions, only the framing changed – removing the "this measures your intellectual ability" framing removed the anxiety-inducing fear of confirming a negative group stereotype (**stereotype threat**), showing the original gap was caused by situational anxiety rather than an underlying ability difference. **(B)**.

Bài tập luyện tập

A culture in which subordinates readily accept and expect an unequal distribution of power between themselves and their superiors would score highly on which of Hofstede's (1980) cultural dimensions?

(A) Individualism

(B) Power distance

(C) Uncertainty avoidance

(D) Masculinity

Lời giải chi tiết

Power distance is specifically defined as the degree to which a culture accepts and expects an unequal distribution of power between people of different status (e.g., superiors and subordinates) – distinct from individualism-collectivism, uncertainty avoidance, or masculinity-femininity. **(B)**.

Bài tập luyện tập

Bond and Smith's (1996) meta-analysis of 133 Asch-style conformity studies across 17 countries found that:

(A) Conformity rates were identical across all 17 countries, showing no cultural variation

(B) Studies conducted in more collectivist cultures reported significantly higher conformity rates than studies conducted in more individualist cultures

(C) Conformity was higher in individualist cultures than collectivist cultures

(D) Conformity could not be measured cross-culturally

Lời giải chi tiết

Bond and Smith found that conformity on the Asch task was significantly **higher** in studies conducted in more collectivist cultures than in more individualist cultures – a finding that links Hofstede's individualism-collectivism dimension to a real, measurable behavioural difference across a very large pooled dataset. **(B)**.

Bài tập luyện tập

A child born in Vietnam who grows up absorbing Vietnamese family customs, language, and values from birth is best described as undergoing:

(A) Acculturation

(B) Enculturation

(C) Assimilation

(D) Marginalization

Lời giải chi tiết

Enculturation is the lifelong process of learning and internalizing the norms and values of one's *own* surrounding culture, typically from birth – distinct from **acculturation**, which specifically refers to psychological/behavioural change resulting from sustained contact with a *different* culture (e.g., through migration). **(B)**.

Bài tập luyện tập

According to Berry's (1997) model, a migrant who rejects both their heritage culture and the host culture, engaging meaningfully with neither, is following which acculturation strategy, and what outcome does Berry's research typically associate with it?

(A) Integration; generally the best outcomes

(B) Assimilation; moderate outcomes

(C) Marginalization; generally the poorest psychological and socio-cultural outcomes

(D) Separation; generally the best outcomes

Lời giải chi tiết

Rejecting or losing ties to *both* the heritage culture and the host culture defines **marginalization**, which Berry's research consistently associates with the **poorest** outcomes on both psychological adjustment (wellbeing) and socio-cultural adjustment (practical competence in the new society) among the four strategies. **(C)**.

Bài tập luyện tập

A person who defines their identity primarily through fulfilling family roles and maintaining group harmony, rather than through unique, stable internal traits, best illustrates which of

Markus and Kitayama's (1991) concepts?

(A) Independent self-construal
(B) Interdependent self-construal
(C) Stereotype threat
(D) Illusory correlation

Lời giải chi tiết

Defining the self through relationships, roles, and group harmony rather than through separate, stable internal traits is the defining feature of an **interdependent self-construal**, typically fostered in collectivist cultural contexts, as opposed to an independent self-construal. **(B)**.

Bài tập luyện tập

In Cole, Gay, Glick, and Sharp's (1971) study, Kpelle adults spontaneously sorted everyday objects by function rather than taxonomic category, but produced taxonomic sorting when asked to sort "the way a fool would do it." What does this best show?

(A) Kpelle adults were cognitively incapable of taxonomic categorization
(B) The taxonomic strategy was available to Kpelle adults but was simply not their spontaneous, habitual, culturally shaped preference
(C) Taxonomic categorization is a meaningless task for any culture
(D) Functional sorting is always a sign of lower intelligence

Lời giải chi tiết

Because Kpelle adults readily produced taxonomic sorting once explicitly asked to sort "the way a fool would," the taxonomic strategy was clearly **available** to them all along – it simply was not their spontaneously preferred, everyday strategy, which was instead shaped by practical, functional activity. This is evidence against interpreting the initial result as a cognitive deficit. **(B)**.

Bài tập luyện tập

According to Bandura, a student who succeeds at solving several difficult calculus problems entirely on her own is building self-efficacy for calculus primarily through which source?

(A) Vicarious experience
(B) Mastery experience
(C) Verbal persuasion
(D) Physiological arousal

Lời giải chi tiết

Directly succeeding at a task oneself is the definition of a **mastery experience** – generally the most powerful of Bandura's four sources of self-efficacy, since it provides first-hand evidence of one's own capability, distinct from watching others succeed (vicarious experience) or receiving encouragement from others (verbal persuasion). **(B)**.

Bài tập luyện tập

SAQ-style: Outline social identity theory, with reference to one relevant study.

Lời giải chi tiết

Social identity theory (Tajfel and Turner, 1979) proposes that part of a person's self-concept derives from the social groups they belong to, and that people are motivated to see their in-group favourably compared to relevant out-groups in order to protect their self-esteem. This occurs through three processes: **social categorization** (sorting people into "us" and "them"), **social identification** (adopting the in-group's norms and identity as part of the self), and **social comparison** (favourably comparing the in-group against out-groups to achieve positive distinctiveness). **Tajfel, Billig, Bundy, and Flament (1971)** tested this using the minimal group paradigm: British schoolboys were assigned to groups based on a trivial, essentially arbitrary preference between paintings by Klee and Kandinsky, never met other group members, and had no history of conflict or competition. Despite this, boys consistently allocated more reward money to anonymous in-group members than out-group members, and often maximized the relative difference favouring the in-group even at some cost to its absolute gain. Full credit accurately outlines at least two of the three SIT processes and links them to the specific, accurate mechanics and finding of the minimal group study.

Bài tập luyện tập

SAQ-style: Explain Bandura's social cognitive theory, with reference to the Bobo doll study.

Lời giải chi tiết

Bandura's social cognitive theory proposes that people can learn complex behaviours by observing and imitating models, without needing to be directly reinforced themselves. Observational learning is mediated by **attention** (attending to the model), **retention** (encoding and storing the behaviour in memory), **reproduction** (having the physical/cognitive capability to perform it), and **motivation** (having a reason to perform it, often shaped by whether the model was seen to be rewarded or punished). **Bandura, Ross, and Ross (1961)** tested this using the Bobo doll paradigm: children who observed an adult model behaving aggressively toward an inflatable doll later showed significantly more physical and verbal aggression – including entirely novel aggressive acts the model never performed – than children who saw a non-aggressive model or no model at all, despite receiving no direct reinforcement themselves for any aggression. This demonstrates that complex social behaviour, such as aggression, can be acquired purely through observation. Full credit explains at least two mediating processes and accurately links them to the specific procedure and finding of the Bobo doll study.

Bài tập luyện tập

SAQ-style: Distinguish between normative and informational social influence, with reference to Asch's (1951) conformity study.

Lời giải chi tiết

Normative social influence is conforming to a group in order to be liked, accepted, or to avoid the discomfort of standing out or being rejected, even while privately still believing something different – this produces public compliance without genuine private belief change. **Informational social influence** is conforming because the individual genuinely believes the group has more accurate information than they do, especially in ambiguous situations – this produces genuine private acceptance of the group's view. In **Asch's (1951)** line-judgment study, participants conformed to a unanimous, obviously incorrect confederate majority on roughly 32–37% of critical trials; because the correct line was objectively easy to identify (a control con-

dition with no confederates produced almost no errors), most conformity in Asch's original paradigm is attributed to **normative** social influence – participants typically reported privately knowing the correct answer but not wanting to be the lone dissenter against a unanimous group. Later variations that made the lines harder to judge (increasing genuine ambiguity) increased conformity further, consistent with a growing role for informational influence as uncertainty increases. Full credit defines both terms accurately and links at least one clearly to Asch's specific findings or design.

Bài tập luyện tập

SAQ-style: Explain the difference between stereotype, prejudice, and discrimination, using an example to illustrate each.

Lời giải chi tiết

A **stereotype** is a *cognitive* belief or generalization about a social group's characteristics, applied to individual members regardless of real variation (e.g., believing "elderly drivers are unsafe drivers"). **Prejudice** is an *affective*, typically negative, emotional attitude toward a group, which often rests on a stereotype but adds a feeling component (e.g., feeling irritated or anxious specifically because an elderly driver is on the road, based on that belief). **Discrimination** is the *behavioural* expression of prejudice – actual unfair treatment of a group's members (e.g., a car insurance employee unfairly charging elderly clients higher premiums regardless of their actual individual driving record). These three components are conceptually separable: a person can hold a stereotype without feeling strong prejudice, and can feel prejudice without ever acting on it through discrimination, for example because of social norms or legal constraints preventing them from doing so. IB exam answers frequently lose marks by treating these three terms as interchangeable; full credit clearly separates the cognitive, affective, and behavioural components and gives an accurate, specific example of each.

Bài tập luyện tập

SAQ-style: Describe Berry's (1997) model of acculturation, including its four strategies.

Lời giải chi tiết

Berry's (1997) model of acculturation describes how migrants navigate sustained contact with a new host culture, based on their answers to two largely independent questions: is it valued to maintain the heritage culture's identity and traditions, and is it valued to adopt relationships and participation in the host society? Crossing these two questions yields four strategies. **Integration** (yes to both) maintains valued elements of the heritage culture while also actively engaging with the host culture, and is consistently associated with the best psychological and socio-cultural outcomes in Berry's research. **Assimilation** (adopt the host culture, abandon the heritage culture) involves full absorption into the host society. **Separation** (maintain the heritage culture, reject the host culture) involves preserving the original culture while minimizing engagement with the host society. **Marginalization** (reject both) involves losing meaningful ties to both cultures, and is consistently associated with the poorest outcomes of the four strategies. Full credit accurately names and defines all four strategies (or at least three, with detail), correctly uses the two underlying questions, and notes the typical outcome pattern (integration best, marginalization worst).

Bài tập luyện tập

SAQ-style: Explain how culture can shape cognitive processes, with reference to one relevant study.

Lời giải chi tiết

Culture can shape not just surface customs but underlying cognitive habits, including how people spontaneously categorize the world. **Cole, Gay, Glick, and Sharp (1971)** studied Kpelle rice farmers in Liberia, giving them everyday objects (foods, tools, and so on) to sort into groups. Rather than sorting by taxonomic category (all tools together, all foods together), as most Western-educated participants typically do, Kpelle adults spontaneously sorted objects by **function** – for example, grouping a knife with an orange because a knife is used to cut an orange. When researchers explicitly asked participants to sort the objects "the way a fool would do it," many then readily produced taxonomic sortings, showing that this strategy was fully available to them but was simply not their spontaneously preferred, habitual approach. This demonstrates that habitual categorization strategies can be shaped by culture and by the everyday practical activities a community engages in, rather than reflecting a single, fixed, universal stage of cognitive development that all humans pass through identically. Full credit accurately describes the study's method and finding and draws the correct conclusion about culturally shaped (not deficient) cognition.

Bài tập luyện tập

ERQ-style: Discuss social identity theory as an explanation of intergroup behaviour, with reference to one relevant study.

Lời giải chi tiết

Social identity theory (Tajfel and Turner, 1979) explains intergroup behaviour, including favouritism and discrimination between groups, as arising from an individual's motivation to protect their self-esteem through the standing of the groups they belong to. The theory proposes three processes: **social categorization** (dividing the social world into in-groups and out-groups), **social identification** (adopting the in-group's norms and identity as part of the self-concept), and **social comparison** (favourably comparing the in-group against out-groups to achieve **positive distinctiveness**). The theory's most striking and best-supported claim is that in-group bias can emerge from categorization *alone*, without any competition, prior contact, or realistic conflict of interest. **Tajfel, Billig, Bundy, and Flament (1971)** demonstrated this directly with the **minimal group paradigm**: British schoolboys were divided into groups using an entirely trivial, essentially arbitrary criterion (a stated preference between paintings by Klee and Kandinsky), never learned who else was in either group, and had no personal stake in the reward-allocation task that followed. Despite this minimal, artificial basis for group membership, boys consistently allocated more money to anonymous in-group members than out-group members, and frequently chose strategies that maximized the relative difference favouring the in-group even at some absolute cost to it – strong evidence that categorization itself, not real competition or history, is sufficient to generate discriminatory behaviour. This gives social identity theory considerable explanatory power for real-world intergroup phenomena such as nationalism, sports rivalries, and organizational "us versus them" dynamics, since it suggests such biases can arise even from superficial or recently formed group boundaries. However, the theory is also limited: the minimal group paradigm is itself a highly controlled, artificial laboratory setting with low ecological validity, and real-world intergroup conflict (e.g.,

between ethnic or national groups) typically involves additional factors – genuine competition for resources, extensive cultural and historical narratives, and power asymmetries – that SIT alone does not fully explain. Later research building on SIT, such as self-categorization theory, has further argued that which specific social identity becomes psychologically salient at a given moment (for example, nationality versus profession versus family role) depends heavily on the immediate social context, meaning intergroup bias is not a fixed constant but fluctuates with whichever identity is currently active for a person. A full-credit answer explains at least two of the three SIT processes accurately, links them to the specific, accurate design and finding of the minimal group study, and offers at least one genuine strength and one genuine limitation of the theory as a real-world explanation.

Bài tập luyện tập

ERQ-style: Discuss factors influencing conformity, with reference to at least one relevant study.

Lời giải chi tiết

Conformity – a change in behaviour or belief due to real or imagined group pressure – is influenced by several situational and cultural factors, illustrated by **Asch's (1951)** line-judgment paradigm and its cross-cultural replications. In Asch's original design, a genuine participant judged line lengths alongside confederates who unanimously gave an obviously wrong answer on certain critical trials; genuine participants conformed to the incorrect majority on roughly 32–37% of critical trials on average, and about 75% conformed at least once, compared to under 1% errors in a no-pressure control condition. Later variations identified specific situational factors that alter conformity: **group size** increased conformity up to about three or four unanimous confederates before levelling off, showing unanimity mattered more than sheer numbers; **breaking unanimity** by introducing even one dissenting confederate sharply reduced conformity, since it demonstrated that disagreement with the majority was socially possible; and **task difficulty** (making the lines harder to distinguish) increased conformity, consistent with a growing role for **informational social influence** (genuinely believing the group has better information) as ambiguity rises, alongside **normative social influence** (wanting to be liked/avoid rejection), which dominates when the correct answer is obvious. Beyond these situational factors, **culture** itself shapes baseline conformity rates: **Bond and Smith (1996)**, in a meta-analysis combining 133 replications of Asch's paradigm across 17 countries, found that studies conducted in more **collectivist** cultures reported significantly higher conformity than studies conducted in more **individualist** cultures, linking Hofstede's (1980) individualism-collectivism dimension to a real, measurable, and replicated behavioural difference rather than a culturally universal constant. Together, these findings show that conformity is not a fixed trait but a probabilistic response shaped jointly by immediate situational features (unanimity, group size, task ambiguity) and by the broader cultural context in which the individual was enculturated. This has practical implications beyond the laboratory: institutions that want to reduce harmful conformity (for example, to prevent bystanders from failing to intervene in an emergency, or to prevent employees from staying silent about a genuine safety concern) can deliberately engineer at least one of these factors, such as ensuring at least one other person visibly dissents from an emerging majority view, to measurably reduce pressure toward conformity. A full-credit answer names and explains at least two specific factors (situational and/or cultural), links each accurately to a specific study or finding, and reaches a reasoned conclusion about how these factors interact.

Bài tập luyện tập

ERQ-style: Discuss the effects of stereotypes on individual behaviour and social judgement, with reference to two relevant studies.

Lời giải chi tiết

Stereotypes – generalized, oversimplified cognitive beliefs about a social group's characteristics – affect not only how perceivers judge others but also how targets of a stereotype themselves think and perform, as shown by two complementary studies. **Hamilton and Gifford (1976)** demonstrated how a stereotype can form in a perceiver purely through a cognitive bias, with no real underlying difference between groups: participants who read behavioural statements about a numerical majority Group A and minority Group B, with an *identical* proportion of desirable to undesirable behaviours in each group, still significantly overestimated how often the minority Group B performed undesirable behaviours – an **illusory correlation** arising because two distinctive, low-frequency events (minority membership and undesirable behaviour) are disproportionately memorable when they co-occur, even though no true correlation existed in the data presented. This shows stereotypes about minority groups can emerge from ordinary information-processing biases alone, without prejudice, contact, or genuine group differences. **Steele and Aronson (1995)** showed a very different, and arguably more consequential, effect: how an existing stereotype can impair the *performance* of the group it targets. Black and White university students completed an identical difficult verbal test; when it was framed as diagnostic of intellectual ability, Black participants scored significantly lower than White participants (controlling for prior ability), but this gap disappeared when the same test was instead framed as non-diagnostic. This **stereotype threat** effect shows that the anxiety generated by fear of confirming a negative stereotype about one's own group can itself impair performance, entirely independent of a person's actual underlying ability – meaning observed group differences in performance can partly reflect situational stereotype pressure rather than real ability differences. Taken together, these two studies show stereotypes operate at two distinct levels: as a perceiver-side cognitive bias that can manufacture beliefs about groups from ordinary salience effects (Hamilton and Gifford), and as a target-side situational pressure that can measurably impair the real-time performance of stereotyped individuals (Steele and Aronson). A further practical implication is that interventions targeting only one locus are unlikely to be sufficient on their own: reducing perceivers' reliance on cognitive shortcuts (for example, through structured, criteria-based judgement procedures that reduce reliance on salience-driven impressions) addresses the Hamilton and Gifford mechanism, whereas reframing how a task or test is presented to reduce evaluative pressure addresses the Steele and Aronson mechanism – the two problems require different remedies precisely because they operate through different psychological pathways. A full-credit answer explains both studies accurately, distinguishes the perceiver-side and target-side effects, and draws an explicit connecting conclusion about the overall psychological impact of stereotypes.

Bài tập luyện tập

ERQ-style: Discuss the relationship between culture and cognition, with reference to two relevant studies.

Lời giải chi tiết

Sociocultural psychology proposes that culture does not merely add superficial customs on top of a universal cognitive architecture, but can shape the structure of the self-concept and habitual patterns of thought themselves, as shown by two complementary lines of research.

Markus and Kitayama (1991) proposed that individualist, largely Western cultural contexts tend to foster an **independent self-construal** – a view of the self as separate and bounded, defined by stable internal traits, with personal achievement and self-expression experienced as core, self-relevant motivating goals – while many collectivist cultural contexts (across East Asia, Africa, and Latin America) tend to foster an **interdependent self-construal**, in which the self is defined relationally through roles and relationships, and maintaining group harmony is experienced as a core, self-relevant goal rather than an external constraint. Because what counts as "self-relevant" differs between these two construals, Markus and Kitayama argued that culture can shape not just values but the actual content and motivational pull of cognition and emotion. **Cole, Gay, Glick, and Sharp (1971)** provided complementary evidence at the level of everyday categorization strategies: Kpelle rice farmers in Liberia, given everyday objects to sort into groups, spontaneously sorted by **function** (e.g., grouping a knife with an orange, since a knife cuts an orange) rather than by the **taxonomic category** (all tools together, all foods together) that most Western-educated participants typically produce. Crucially, when researchers explicitly asked participants to sort the objects "the way a fool would do it," many readily produced taxonomic sortings – showing the taxonomic strategy was fully *available* to Kpelle adults, but was simply not their spontaneously preferred, habitual strategy, which instead reflected the practical, functional activities of their everyday rice-farming life. Together, these studies show culture shapes cognition at two levels: the deep structure of the self-concept that organizes motivation and emotion (Markus and Kitayama), and the surface-level habitual strategies people spontaneously apply to everyday cognitive tasks like categorization (Cole, Gay, Glick, and Sharp) – while the latter study in particular cautions against mistaking a culturally shaped habitual preference for a fixed, universal cognitive stage, a concern closely related to the broader WEIRD sampling critique of psychological research. This has a broader methodological implication for psychology as a discipline: because so much foundational research on the self, motivation, and cognitive categorization was originally conducted with Western, industrialized, and often university-educated samples, findings first described as universal properties of "the" human mind may in fact reflect one culturally shaped pattern among several – reinforcing the need for genuinely cross-cultural replication before any cognitive or motivational finding is treated as a universal feature of human psychology. A full-credit answer explains both studies accurately, draws out the shared theme that cognition is culturally shaped rather than culturally uniform, and avoids describing either cultural pattern as a cognitive deficit.

Bài tập luyện tập

According to Allport's (1954) contact hypothesis, which of the following is **NOT** one of the conditions proposed as necessary for intergroup contact to reliably reduce prejudice?

(A) Equal status between the groups within the contact situation

(B) Common goals that both groups are genuinely working toward

(C) Intergroup cooperation rather than competition between the groups

(D) A pre-existing history of conflict or competition between the two groups

Lời giải chi tiết

Allport's (1954) contact hypothesis specifies four conditions under which intergroup contact reliably reduces prejudice: **equal status**, **common goals**, **intergroup cooperation**, and **support of authorities, law, or custom**. A pre-existing history of conflict or competition between the groups is not one of Allport's proposed conditions – if anything, this is precisely the kind of

unfavourable circumstance that his conditions are meant to counteract. **(D)**.

Bài tập luyện tập

According to Allport's (1954) contact hypothesis, what is most likely to happen when contact between two groups takes place **without** equal status, common goals, cooperation, or institutional support?

(A) Prejudice is always eliminated completely, regardless of which conditions are present

(B) The contact may fail to reduce prejudice, and in some cases can even increase it

(C) The two groups will automatically achieve positive distinctiveness toward one another

(D) The contact will necessarily and immediately trigger stereotype threat in both groups

Lời giải chi tiết

Allport argued that his four conditions (equal status, common goals, intergroup cooperation, and institutional support) are precisely what make contact effective at reducing prejudice. Contact that lacks these conditions – for example, contact that is unequal in status or explicitly competitive – may fail to reduce prejudice at all, and can sometimes even reinforce or increase it, rather than automatically eliminating it. **(B)**.

Bài tập luyện tập

Pettigrew and Tropp's (2006) meta-analysis, statistically combining more than 500 separate studies on intergroup contact, found that:

(A) Intergroup contact had no measurable relationship at all with prejudice

(B) Greater intergroup contact was reliably associated with lower prejudice overall, with the strongest reductions in studies most closely matching Allport's proposed optimal conditions

(C) Contact only reduced prejudice in studies conducted within a single country

(D) Prejudice reduction occurred only for contact based on race and ethnicity, and for no other type of intergroup distinction

Lời giải chi tiết

Pettigrew and Tropp's (2006) meta-analysis of more than 500 studies, involving hundreds of thousands of participants across many countries, found that greater intergroup contact was reliably associated with lower prejudice overall, across many different intergroup contexts (e.g., race/ethnicity, sexual orientation, age, disability, and mental illness), with the strongest prejudice-reducing effects found in studies whose contact situations most closely matched Allport's (1954) proposed optimal conditions. **(B)**.

Bài tập luyện tập

ERQ-style: Discuss the contact hypothesis as an explanation for reducing prejudice between social groups.

Lời giải chi tiết

Gordon **Allport's (1954) contact hypothesis** proposes that direct contact between members of different social or ethnic groups can reduce prejudice between them, but only under specific conditions: **equal status** within the contact situation, **common goals** both groups are working toward, **intergroup cooperation** rather than competition, and **support of authorities, law, or custom** for the contact. These conditions let group members disconfirm existing negative stereotypes through direct experience; contact lacking them – for instance, unequal-status or competitive contact – may fail to reduce prejudice, or can even increase it.

Strong support comes from **Pettigrew and Tropp (2006)**, whose meta-analysis statistically combined over 500 studies, involving several hundred thousand participants across many countries, testing the contact hypothesis directly. Greater intergroup contact was reliably associated with lower prejudice overall, across contexts including race and ethnicity, sexual orientation, age, disability, and mental illness, with the strongest reductions in studies whose conditions most closely matched Allport's optimal conditions – support far stronger than any single study could provide alone.

The theory also connects to **social identity theory (Tajfel and Turner, 1979)**, discussed earlier in this unit: SIT explains intergroup bias through **social categorization** into rigid "us" versus "them" groups, followed by self-esteem-protecting **social comparison**. Contact meeting Allport's conditions, especially common goals and cooperation, can weaken this rigid categorization by recategorizing former out-group members as part of a single, larger in-group working toward a shared goal – undercutting the very process SIT identifies as the root of intergroup bias.

However, the theory has limitations: engineering genuinely equal-status, cooperative, institutionally supported contact is often difficult in real-world settings with deep historical inequalities, and much of Pettigrew and Tropp's evidence is correlational, so less-prejudiced people may simply seek out more contact rather than contact alone causing lower prejudice. A full-credit answer explains Allport's (1954) conditions, cites Pettigrew and Tropp's (2006) evidence, links the theory to social identity theory, and offers a genuine strength and limitation.

Option --- Abnormal Psychology

Mục tiêu Unit: Các khái niệm và tiêu chí xác định sự bất thường (abnormality) tâm lý; hệ thống phân loại chẩn đoán DSM-5 (Hiệp hội Tâm thần học Hoa Kỳ) và ICD-11 (Tổ chức Y tế Thế giới) cùng độ tin cậy và độ giá trị của chẩn đoán tâm thần; nguyên nhân (etiology) của trầm cảm, rối loạn ám ảnh cưỡng chế (OCD), và rối loạn ăn uống (anorexia nervosa) ở ba cấp độ sinh học, nhận thức, và văn hoá–xã hội; các phương pháp điều trị sinh học (thuốc) và tâm lý (CBT, ERP) cho các rối loạn này; và vấn đề kỳ thị (stigma) đối với người mắc bệnh tâm thần.

5.1 Concepts and criteria of abnormality

Before any diagnosis, treatment, or research programme can begin, psychology must first answer a deceptively difficult question: what does it actually mean for a thought, feeling, or behaviour to be **abnormal**? No single definition is fully satisfactory on its own, which is why clinicians and researchers typically apply several overlapping criteria together and weigh each against the others, rather than relying on any one criterion in isolation.

Khái niệm cốt lõi

Statistical deviation defines a behaviour, thought, or emotional state as abnormal if it occurs only rarely or infrequently relative to the wider population (for example, a score on an IQ test or an anxiety inventory that falls far from the population average). **Limitation**: rarity alone does not imply disorder – exceptionally high intelligence or artistic genius is statistically rare but is not, in itself, clinically abnormal, while some genuinely distressing patterns of thought (mild nerves before an exam, occasional low mood) are in fact statistically very common. **Deviation from social norms** instead defines a behaviour as abnormal if it violates the unwritten rules of conduct that a particular society or culture expects its members to follow. **Limitation**: because social norms vary enormously across cultures, communities, and historical periods, this criterion is inherently **culturally relative** – a behaviour pathologized in one time or place may be considered entirely unremarkable in another, meaning the criterion risks reflecting prevailing social prejudice rather than a fixed psychological reality. **Failure to function adequately** defines abnormality in terms of a person's own inability to cope with the ordinary demands of daily life – maintaining hygiene, sustaining relationships, holding down employment – combined with significant subjective distress, or distress caused to others. **Limitation**: judgements about what counts as "adequate" functioning are themselves subjective, and are easily coloured by an observer's own cultural assumptions about what a normal, functional life should look like. **Deviation from ideal mental health** instead defines abnormality negatively, as any noticeable departure from a positive standard of psychological wellbeing. **Jahoda's (1958)** widely cited list of criteria for positive mental health includes an accurate perception of reality, **autonomy** (independence from excessive social influence), **resistance to stress**, **self-actualization** (fulfilling one's own potential), and a positive attitude toward the self. **Limitation**: this is a strikingly idealistic standard that almost no one meets fully or permanently, and the specific criteria selected – autonomy, self-actualization – themselves reflect a particular, Western, individualist conception of a healthy self, rather than a culturally neutral yardstick.

VN **GIẢI THÍCH TIẾNG VIỆT**

Không có một tiêu chí duy nhất định nghĩa được "sự bất thường" – các nhà tâm lý học thường kết hợp nhiều tiêu chí: **độ lệch thống kê (statistical deviation)** (hiếm gặp về mặt thống kê – nhưng hiếm không đồng nghĩa với bệnh lý, ví dụ thiên tài cũng hiếm gặp nhưng không phải bệnh); **lệch chuẩn xã hội (deviation from social norms)** (vi phạm quy tắc ứng xử ngầm định của một nền văn hoá – nhưng chuẩn mực xã hội thay đổi theo văn hoá/thời đại nên tiêu chí này mang tính **tương đối văn hoá**); **không thể hoạt động đầy đủ (failure to function adequately)** (không đáp ứng được nhu cầu sống hằng ngày, gây đau khổ cho bản thân/người khác – nhưng đánh giá thế nào là "đầy đủ" cũng mang tính chủ quan); và **lệch khỏi sức khoẻ tâm thần lý tưởng** theo tiêu chí của **Jahoda (1958)** (nhận thức chính xác về thực tại, tự chủ, chịu đựng căng thẳng, tự hiện thực hoá, thái độ tích cực với bản thân) – nhưng đây là tiêu chuẩn quá lý tưởng mà gần như không ai đạt được trọn vẹn, và bản thân các tiêu chí này phản ánh quan niệm cá nhân chủ nghĩa kiểu phương Tây về một "cái tôi" khoẻ mạnh, chứ không phải một thước đo trung lập về văn hoá.

Ví dụ mẫu · Worked example

For decades, the **DSM** itself classified homosexuality as a mental disorder (it appeared as a diagnosable condition in the DSM-I, 1952, and DSM-II, 1968) – a clear historical illustration of the **deviation from social norms** criterion in action, since homosexuality was pathologized primarily because it violated the dominant social and legal norms of the period, not because it was inherently linked to distress or dysfunction. Psychologist **Evelyn Hooker (1957)** directly tested this assumption in a landmark comparative study. She recruited 30 non-clinical homosexual men and 30 heterosexual men, matched for age, IQ, and education, none of whom were currently in therapy, and administered a battery of projective personality tests, including the Rorschach inkblot test. Expert judges, blind to each participant's sexual orientation, rated the resulting test protocols for overall psychological adjustment; the judges found **no significant difference** in adjustment between the two groups and, when subsequently asked to sort the protocols into "homosexual" and "heterosexual" categories using the adjustment ratings alone, could not do so at above-chance accuracy. Hooker's finding – that homosexuality was not itself associated with poorer psychological functioning – became influential evidence contributing to the **American Psychiatric Association's 1973** decision to remove homosexuality from the DSM as a diagnosable disorder. The underlying psychological reality of the men being studied did not change between 1957 and 1973; what changed was the social norm used to judge them – precisely the limitation that makes "deviation from social norms" a historically contingent, rather than a fixed, criterion for abnormality.

VN **GIẢI THÍCH TIẾNG VIỆT**

Trong nhiều thập kỷ, DSM từng xếp **đồng tính luyến ái** là một rối loạn tâm thần (DSM-I năm 1952, DSM-II năm 1968) – minh hoạ rõ tiêu chí "lệch chuẩn xã hội" đã từng bị dùng sai như thế nào. Nghiên cứu của **Evelyn Hooker (1957)** so sánh 30 nam giới đồng tính và 30 nam giới dị tính (không đang điều trị tâm lý, được ghép cặp theo tuổi/IQ/học vấn) bằng các bài trắc nghiệm phóng chiếu (như Rorschach); các giám khảo không biết xu hướng tính dục của người tham gia hoàn toàn KHÔNG phân biệt được sự khác biệt về mức độ thích nghi tâm lý giữa hai nhóm, dù đã cố gắng phân loại dựa trên điểm số thích nghi. Phát hiện này góp phần khiến **Hiệp hội Tâm thần học Hoa Kỳ** loại bỏ đồng tính luyến ái khỏi DSM vào năm **1973** – cho thấy rõ: bản chất tâm lý của những người này không hề thay đổi, chỉ có **chuẩn mực xã hội** dùng để đánh giá họ là thay đổi theo thời gian.

(!) Lỗi thường gặp: Do not treat any single criterion for abnormality – especially deviation from social norms – as a culture-free, universal yardstick. What counts as a violation of social norms, or even as "failure to function adequately," depends heavily on the surrounding culture, historical period, and the observer's own assumptions; a strong exam answer acknowledges that these criteria are tools for making a judgement in context, not objective, value-free measurements that apply identically in every society and every era.

In practice, clinicians rarely rely on any single criterion in isolation. A skilled clinician typically triangulates across several of these criteria at once – asking not only whether a behaviour is statistically rare, but also whether the person is suffering, or causing suffering to others, whether they can still meet the ordinary demands of their own life, and how far their functioning departs from a reasonable standard of psychological wellbeing – precisely because each criterion compensates for at least some of the others' weaknesses. A behaviour that is simultaneously rare, distressing, and associated with clearly impaired day-to-day functioning is judged abnormal with far more confidence than a behaviour that meets only one criterion alone; conversely, a behaviour that is merely unusual but causes no distress and does not impair functioning (an eccentric hobby, an unconventional career path) is not normally treated as clinically significant under any combination of these criteria. This layered, multi-criteria approach is itself an early illustration of a theme that recurs throughout this unit: psychological disorders, and judgements about abnormality more broadly, are rarely well captured by a single explanatory factor considered on its own.

5.2 Diagnosis: classification systems, reliability, and validity

Once psychologists agree that abnormality is a meaningful phenomenon, clinicians still need a shared, standardized language for identifying and communicating about specific disorders, so that a "diagnosis" means roughly the same thing regardless of where, or by whom, it is made.

Khái niệm cốt lõi

The **DSM-5** (*Diagnostic and Statistical Manual of Mental Disorders*, 5th edition), published by the **American Psychiatric Association (APA)**, and the **ICD-11** (*International Classification of Diseases*, 11th revision), published by the **World Health Organization (WHO)**, are the two most widely used classification systems in clinical practice worldwide. Both provide standardized, criteria-based checklists of symptoms that a patient must display – often for a minimum duration and alongside a minimum level of associated distress or functional impairment – to receive a given diagnosis. For a diagnostic system to be scientifically useful, it must demonstrate two distinct properties. **Reliability** concerns the *consistency* of diagnosis: different clinicians independently examining the same patient should reach the same diagnosis (inter-clinician reliability), and the same patient examined on separate occasions should receive a consistent diagnosis over time, assuming their underlying condition has not genuinely changed. **Validity** concerns whether a diagnostic category is scientifically meaningful: does it correspond to a genuine, distinct clinical condition, with a coherent set of causes, a predictable course, and a specific, appropriate response to treatment – or is it merely a convenient label imposed on a cluster of symptoms that do not, in reality, reflect one single underlying disorder?

	DSM-5	ICD-11
Published by	American Psychiatric Association (APA)	World Health Organization (WHO)
Scope	Mental disorders only	All diseases and health conditions, including a chapter on mental, behavioural, and neurodevelopmental disorders
Typical use	Widely used for clinical diagnosis, research, and insurance billing in the United States	Used internationally by WHO member states for health statistics and clinical diagnosis

Both manuals rely on standardized, criteria-based checklists so that clinicians in different settings can, in principle, reach the same diagnosis from the same symptom picture.

A further, ongoing debate in the classification literature concerns whether mental disorders are best represented **categorically** (a person either does or does not meet the threshold for a named disorder, as in most of the DSM-5's and ICD-11's main chapters) or **dimensionally** (symptoms are placed along a continuous spectrum of severity, with no single natural cut-off cleanly separating "disordered" from "healthy"). This debate connects directly back to validity: high rates of **comorbidity** – patients simultaneously meeting the criteria for several, supposedly distinct disorders (for example, major depressive disorder together with an anxiety disorder) – are sometimes cited as evidence that the sharp categorical boundaries drawn between adjacent DSM-5/ICD-11 diagnoses may not fully correspond to naturally distinct, separable underlying conditions. If two "different" disorders very frequently co-occur and respond to many of the same treatments, this raises the question of whether the classification system has carved the clinical reality at its true joints, or has instead imposed a somewhat artificial categorical boundary on what may in fact be overlapping or dimensional underlying processes.

Beyond reliability and validity, both the DSM-5 and ICD-11 explicitly recognize a third practical goal: **clinical utility** – whether a diagnostic category actually helps clinicians communicate with one another, select an appropriate treatment, and predict a patient's likely course, regardless of whether every philosophical question about the category's ultimate scientific validity has been fully settled. A diagnosis can have meaningful clinical utility (it reliably points clinicians toward an effective, evidence-based treatment such as CBT or an SSRI) even while researchers continue to debate its deeper validity as a truly distinct natural category – which is one reason classification systems continue to be revised (moving from DSM-IV to DSM-5, and from ICD-10 to ICD-11) as new evidence about the boundaries and treatment-relevance of specific disorders accumulates.

VN **GIẢI THÍCH TIẾNG VIỆT**

DSM-5 (của Hiệp hội Tâm thần học Hoa Kỳ – APA) và **ICD-11** (của Tổ chức Y tế Thế giới – WHO) là hai hệ thống phân loại chẩn đoán được sử dụng rộng rãi nhất, đều dùng danh sách tiêu chí triệu chứng được chuẩn hoá. Một hệ thống chẩn đoán tốt cần có **độ tin cậy (reliability)**: các bác sĩ lâm sàng khác nhau khám cùng một bệnh nhân phải cho ra cùng một chẩn đoán, và cùng một bệnh nhân được chẩn đoán nhất quán theo thời gian; và **độ giá trị (validity)**: phạm trù chẩn đoán đó phải phản ánh một tình trạng lâm sàng thật sự riêng biệt, chứ không chỉ là một nhãn dán tiện lợi cho một cụm triệu chứng. Một cuộc tranh luận khác là liệu rối loạn tâm thần nên được phân loại theo kiểu **phân loại (categorical)** (có/không đạt ngưỡng chẩn đoán) hay theo kiểu **phổ liên tục (dimensional)** (mức độ nghiêm trọng nằm trên một dải liên tục); tỷ lệ **đồng mắc (comorbidity)** cao giữa các chẩn đoán (ví dụ trầm cảm và rối loạn lo âu cùng lúc) đặt ra nghi vấn về độ giá trị của việc tách các chẩn đoán thành những phạm trù hoàn toàn riêng biệt. Ngoài độ tin cậy và độ giá trị, cả DSM-5 và ICD-11 còn hướng đến mục tiêu **tính hữu dụng lâm sàng (clinical utility)**: một chẩn đoán có ích khi nó giúp bác sĩ lâm sàng giao tiếp với nhau, chọn phương pháp điều trị phù hợp, và dự đoán diễn biến bệnh – dù các tranh luận khoa học sâu hơn về độ giá trị của phạm trù đó vẫn tiếp diễn.

Ví dụ mẫu · Worked example

Rosenhan's (1973) study "On Being Sane in Insane Places" remains the most famous direct test of psychiatric diagnostic reliability and validity. Eight healthy **pseudopatients** (including Rosenhan himself) sought admission to twelve different US psychiatric hospitals, each reporting only a single, invented symptom: hearing an unfamiliar voice saying ambiguous words such as "empty," "hollow," and "thud." This symptom did not correspond to any genuine, recognized disorder. Beyond this one fabricated complaint, pseudopatients gave entirely truthful personal histories and behaved completely normally from the moment of admission onward, including telling staff that the auditory symptom had already stopped. All eight were admitted to hospital, and eleven of the twelve admissions resulted in a diagnosis of **schizophrenia**. Despite behaving normally throughout their stay – which lasted an average of **19 days** – **no staff member at any hospital ever detected that a pseudopatient was sane**; ordinary behaviours, such as taking notes for the study, were in some cases recorded by staff as symptomatic (e.g., "patient engages in writing behaviour"). Every pseudopatient was eventually discharged not as "sane" or "never ill," but with the diagnosis **"schizophrenia in remission."** In a striking follow-up, Rosenhan informed one hospital – whose staff had heard of his results and confidently claimed such an error could not happen there – that he would send further pseudopatients over the following three months. Staff at that hospital subsequently rated a substantial number of genuine new patients as suspected pseudopatients with high confidence, even though Rosenhan had, in fact, sent **no pseudopatients at all** during that period. Together, the two phases of the study raised serious doubts about both the **reliability** and **validity** of psychiatric diagnosis in practice, and demonstrated how a diagnostic label, once applied, can distort how all of a person's subsequent behaviour is interpreted.

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu kinh điển của **Rosenhan (1973)** cho 8 người khoẻ mạnh ("pseudopatient") giả vờ nghe thấy một giọng nói lạ nói những từ mơ hồ ("trống rỗng," "rỗng tuếch," "bịch") để xin nhập viện tại 12 bệnh viện tâm thần Mỹ; sau khi nhập viện họ hoàn toàn cư xử bình thường và nói triệu chứng đã biến mất. Cả 8 người đều được nhận vào viện (11/12 lần nhập viện được chẩn đoán **tâm thần phân liệt**), **không nhân viên nào phát hiện** họ là người khoẻ mạnh trong suốt thời gian nằm viện (trung bình **19 ngày**), và tất cả đều xuất viện với chẩn đoán "tâm thần phân liệt đã thuyên giảm." Trong một thử nghiệm tiếp theo, một bệnh viện tự tin rằng mình sẽ không bị lừa lần nữa đã đánh dấu nhầm rất nhiều bệnh nhân **thật sự** là "pseudopatient nghi ngờ" – dù Rosenhan không hề gửi ai đến trong giai đoạn đó. Nghiên cứu này đặt ra nghi vấn nghiêm trọng về cả **độ tin cậy** lẫn **độ giá trị** của chẩn đoán tâm thần, đồng thời cho thấy một **nhãn chẩn đoán** có thể bóp méo cách người khác diễn giải mọi hành vi sau đó của một người.

(!) Lỗi thường gặp: Do not conflate reliability and validity when evaluating a diagnostic system. A diagnostic category can be applied highly **reliably** – different psychiatrists consistently agreeing that a patient meets the checklist criteria for, say, "schizophrenia" – while its **validity** remains deeply questionable if the category does not correspond to one single, coherent underlying condition. Rosenhan's (1973) study is primarily an attack on *validity* (whether "sanity" and "insanity" could be accurately detected inside a hospital at all) rather than simply a demonstration that clinicians disagree with one another.

5.3 The diathesis-stress model: an integrating framework

The etiological findings already reviewed in this unit – **Caspi et al.'s (2003)** gene × environment finding for depression, and **Brown and Harris's (1978)** provoking-agent/vulnerability-factor model –

might at first look like two unrelated explanations pitched at different levels of analysis. In fact, both illustrate one general framework explaining why disorders develop in some people but not others: the **diathesis-stress model**.

Khái niệm cốt lõi

The **diathesis-stress model** proposes that psychological disorders emerge from the combination of two necessary ingredients. A **diathesis** is a pre-existing vulnerability that a person carries – **genetic** (an inherited gene variant), **biological** more broadly (e.g., a pattern of neurotransmitter functioning or brain circuitry), or **acquired through early experience** (e.g., an insecure attachment style, a harsh upbringing, or chronic social isolation). An **environmental stressor** is a triggering event or ongoing difficulty encountered later in life – a bereavement, job loss, serious illness, or period of sustained hardship. Critically, the model proposes that **neither ingredient is normally sufficient on its own**: a significant diathesis without a significant stressor, or a severe stressor without a relevant diathesis, typically does not produce the disorder. It is specifically the **combination** – a sufficiently high diathesis meeting a sufficiently significant stressor – that produces it. Because a diathesis can itself be defined at any level of analysis (biological, cognitive, or sociocultural), the model functions as a general, **integrating framework** into which most single-level etiological findings elsewhere in this unit can be restated, rather than as a further, competing, level-specific theory.

Diathesis (vulnerability)	Stressor (environmental trigger)	Predicted outcome
Low (little or no pre-existing vulnerability)	Any level, including a severe stressor	No disorder emerges – the stressor alone is normally insufficient
High (genetic, biological, or psychosocial vulnerability present)	Present and sufficiently significant	Disorder emerges – vulnerability and stressor combine

The diathesis-stress model: a disorder emerges only where a high diathesis coincides with a significant stressor; a low diathesis leaves a person comparatively resilient even to a severe stressor, since the vulnerability needed to convert that stressor into disorder is largely absent.

VN **GIẢI THÍCH TIẾNG VIỆT**

Mô hình **diathesis-stress** (khuynh hướng dễ tổn thương–căng thẳng) cho rằng rối loạn tâm lý xuất hiện từ sự kết hợp của hai yếu tố cần thiết. **Khuynh hướng dễ tổn thương (diathesis)** là một sự dễ bị tổn thương có sẵn – có thể mang tính **di truyền** (một biến thể gen), **sinh học** nói chung (ví dụ hoạt động của chất dẫn truyền thần kinh hay mạch não), hoặc **hình thành qua trải nghiệm sớm trong đời** (ví dụ kiểu gắn bó không an toàn, tuổi thơ khắc nghiệt, hay bị cô lập kéo dài). **Tác nhân gây căng thẳng (stressor)** là một sự kiện kích hoạt hoặc khó khăn kéo dài xảy ra sau đó trong đời – mất mát, mất việc làm, bệnh nặng, hay một giai đoạn khó khăn kéo dài. Điểm mấu chốt: mô hình này cho rằng **không yếu tố nào một mình là đủ** – một khuynh hướng rõ rệt mà không có tác nhân căng thẳng đáng kể, hoặc một tác nhân căng thẳng nghiêm trọng mà không có khuynh hướng liên quan, thường KHÔNG dẫn đến rối loạn. Chính sự **kết hợp** giữa khuynh hướng đủ cao và tác nhân căng thẳng đủ lớn mới tạo ra rối loạn. Vì khuynh hướng dễ tổn thương có thể được định nghĩa ở bất kỳ cấp độ phân tích nào (sinh học, nhận thức, hay văn hoá–xã hội), mô hình này đóng vai trò như một **khung lý thuyết tổng quát, mang tính tích hợp**, cho phép diễn giải lại hầu hết các phát hiện về nguyên nhân ở từng cấp độ riêng lẻ đã học trong học phần này.

Ví dụ mẫu · Worked example

Two studies already introduced in this unit, though conducted independently, are both textbook illustrations of the diathesis-stress model in action. **Caspi et al.'s (2003)** Dunedin cohort study found that carrying one or two copies of the short allele of the **5-HTT (serotonin transporter) gene** – a **biological diathesis** – predicted significantly elevated rates of depression and suicidality only among individuals who also experienced multiple stressful life events between ages 21 and 26; genotype alone, in the absence of significant life stress, did not predict later depression. This is a direct, well-known example of a diathesis (the short 5-HTT allele) combining with a stressor (multiple adverse life events) to produce an outcome that neither factor reliably produced on its own. **Brown and Harris's (1978)** Camberwell study reached a strikingly similar structural conclusion using an entirely different, **psychosocial** diathesis: a severe **provoking agent** (a life event or a serious ongoing difficulty) reliably led to clinical depression mainly among women who also possessed one or more **vulnerability factors** – most notably the lack of a close, confiding relationship – with the same provoking agent, in the absence of these vulnerability factors, being far less likely to result in depression. Read side by side, these two studies show that the diathesis-stress model applies at multiple levels of analysis at once: the same underlying logic – vulnerability combined with a stressor producing the disorder – holds whether the vulnerability is a specific inherited gene variant or a specific absence of social support, showing that the model is not a claim about biology specifically, but about the general structure of how vulnerability and adversity combine to produce psychological disorder.

VN **GIẢI THÍCH TIẾNG VIỆT**

Hai nghiên cứu đã được giới thiệu trong học phần này, dù được thực hiện độc lập, đều là ví dụ kinh điển của mô hình diathesis-stress. Nghiên cứu của **Caspi và cộng sự (2003)** trên nhóm thuần tập Dunedin cho thấy việc mang một hoặc hai bản sao của alen **ngắn** của gen **5-HTT** – một **khuynh hướng dễ tổn thương sinh học** – chỉ dự đoán được tỷ lệ trầm cảm và ý định tự tử tăng cao ở những người CŨNG trải qua nhiều sự kiện căng thẳng trong đời (từ 21–26 tuổi); nếu không có căng thẳng đáng kể đi kèm, bản thân kiểu gen không dự đoán được trầm cảm sau này. Đây là một ví dụ trực tiếp, nổi tiếng về sự tương tác diathesis-stress: khuynh hướng (alen ngắn 5-HTT) kết hợp với tác nhân căng thẳng (nhiều sự kiện bất lợi trong đời). Nghiên cứu Camberwell của **Brown and Harris (1978)** đưa ra một kết luận có cấu trúc tương tự nhưng dùng một khuynh hướng dễ tổn thương hoàn toàn khác – mang tính **tâm lý–xã hội**: một **tác nhân kích hoạt (provoking agent)** nghiêm trọng chỉ dẫn đến trầm cảm lâm sàng chủ yếu ở những phụ nữ CŨNG có một hoặc nhiều **yếu tố dễ tổn thương**, đặc biệt là việc thiếu một mối quan hệ tâm sự thân thiết; nếu chỉ có tác nhân kích hoạt mà không có các yếu tố dễ tổn thương này thì khả năng dẫn đến trầm cảm thấp hơn nhiều. Khi đặt cạnh nhau, hai nghiên cứu này cho thấy mô hình diathesis-stress áp dụng được ở nhiều cấp độ phân tích cùng lúc: cùng một logic – khuynh hướng dễ tổn thương kết hợp với tác nhân căng thẳng tạo ra rối loạn – vẫn đúng dù khuynh hướng đó là một biến thể gen cụ thể hay sự thiếu vắng cụ thể của hỗ trợ xã hội, cho thấy mô hình này không phải là một tuyên bố riêng về sinh học, mà là về cấu trúc chung của cách khuynh hướng dễ tổn thương và nghịch cảnh kết hợp để tạo ra rối loạn tâm lý.

(!) Lỗi thường gặp: It is tempting, but inaccurate, to reduce the diathesis-stress model to the slogan "genes cause the disorder, and stress just triggers it." This oversimplification assumes the diathesis must always be genetic or biological, when the model is defined at the level of **vulnerability in general** – which, as Brown and Harris's (1978) psychosocial vulnerability factors (lack of a confiding relationship, loss of a mother before age 11) demonstrate, can be entirely

psychological or social in origin, with no genetic or biological component at all. A strong exam answer states the model using a psychosocial example (Brown and Harris, 1978) just as readily as a biological one (Caspi et al., 2003), rather than treating "diathesis" as a synonym for "gene."

This is also why the diathesis-stress model is so useful for explaining **individual differences** in who does, and does not, develop a disorder after a shared stressful experience. Among a group of people who all experience the same job loss or bereavement, only some go on to develop a disorder such as depression; the model explains this by proposing that it is precisely those who also carry a relevant diathesis – a genetic sensitivity such as the short 5-HTT allele, or a psychosocial vulnerability such as a lack of a confiding relationship – who are most likely to develop the disorder, while others exposed to the identical stressor but lacking that vulnerability are not. Framed this way, the model does not compete with the biological, cognitive, or sociocultural findings reviewed elsewhere in this unit – it is the general structure those findings exemplify.

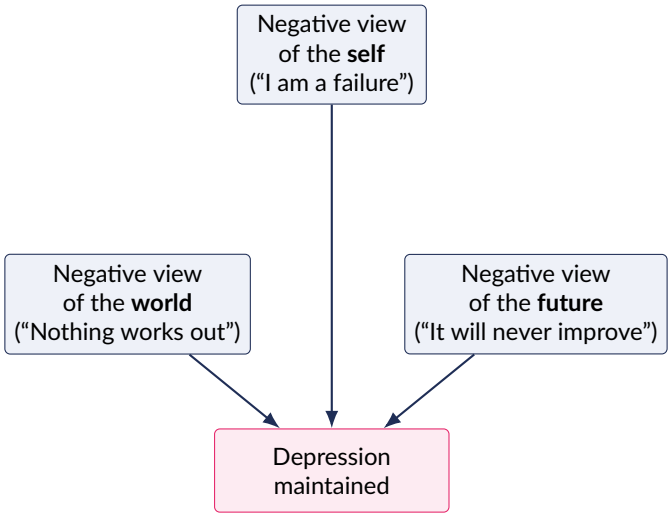
5.4 Etiology of depression: biological, cognitive, and sociocultural levels

Like most disorders covered in this option, depression is best explained not by a single cause but by contributing factors operating simultaneously at several different levels of analysis, each of which has accumulated substantial supporting evidence.

At the **biological** level, **Caspi et al.'s (2003)** landmark study of a Dunedin, New Zealand birth cohort (covered in more detail in the Biological Approach unit) found a gene × environment interaction specific to depression: individuals carrying one or two copies of the **short allele** of the **5-HTT (serotonin transporter) gene** who also experienced multiple stressful life events between ages 21 and 26 showed significantly higher rates of depression and suicidality than long-allele homozygotes exposed to the same stressors. Critically, genotype alone – in the absence of significant life stress – did not predict depression, showing that genetic vulnerability to depression typically operates by increasing *sensitivity* to environmental adversity, rather than causing depression directly and independently.

Khái niệm cốt lõi

At the **cognitive** level, **Beck's (1967) cognitive triad** proposes that depression is maintained by three interlocking, persistently negative patterns of thinking: a negative view of the **self** ("I am worthless, a failure"), a negative view of the **world** ("nothing ever works out for me"), and a negative view of the **future** ("things will never get better"). According to Beck, these negative thought patterns are generated by **dysfunctional schemas** – rigid, overly negative core beliefs about the self, often formed in childhood through harsh criticism, loss, or rejection – and are then continually reinforced through biased information processing, such as **overgeneralizing** a single failure (e.g., failing one exam is interpreted as "proof" that the person is a complete and permanent failure at everything) rather than treating it as an isolated, situational setback. Once established, this triad becomes self-perpetuating: a person who expects failure is more likely to notice, remember, and dwell on evidence that confirms it, while dismissing or forgetting contrary evidence.



Beck's (1967) cognitive triad: three interlocking patterns of negative thinking about the self, the world, and the future, generated by dysfunctional schemas and sustained through biased information processing such as overgeneralization.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ở cấp độ **sinh học**, Caspi và cộng sự (2003) cho thấy alen **ngắn** của gen **5-HTT** chỉ làm tăng nguy cơ trầm cảm khi kết hợp với **nhiều sự kiện căng thẳng** trong đời (tuổi 21–26) – bản thân gen này một mình không dự đoán được trầm cảm nếu không có căng thẳng đi kèm. Ở cấp độ **nhận thức**, **tam giác nhận thức (cognitive triad)** của Beck (1967) mô tả ba kiểu suy nghĩ tiêu cực dai dẳng về **bản thân**, **thế giới**, và **tương lai**, bắt nguồn từ các **sơ đồ nhận thức (schema)** rối loạn chức năng hình thành từ thời thơ ấu, và được duy trì qua lối xử lý thông tin thiên lệch như **khái quát hoá quá mức (overgeneralization)** biến một thất bại đơn lẻ thành "bằng chứng" cho sự thất bại toàn diện, vĩnh viễn.

Ví dụ mẫu · Worked example

At the **sociocultural** level, **Brown and Harris's (1978)** Camberwell study surveyed working-class women in a district of South London to identify social factors linked to the onset of clinical depression. They found that a **provoking agent** – a severe, acute life event (e.g., bereavement, job loss) or a serious ongoing difficulty – greatly increased the risk of depression, but overwhelmingly so among women who also possessed one or more **vulnerability factors**: the loss of their own mother before age 11, a lack of a close, confiding relationship with a partner or friend, three or more children under 14 living at home, and unemployment (lack of paid work outside the home). Women who experienced a provoking agent *without* any of these vulnerability factors were far less likely to develop depression than women who experienced both a provoking agent *and* one or more vulnerability factors. This provided strong evidence that depression is not simply a direct reaction to stressful events, but arises from the interaction between an acute stressor and a person's broader social circumstances, which can either buffer against or compound the impact of that stressor.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ở cấp độ **văn hoá–xã hội**, nghiên cứu Camberwell của **Brown and Harris (1978)** trên phụ nữ lao động ở Nam London cho thấy một **tác nhân kích hoạt (provoking agent)** – một sự kiện căng thẳng nghiêm trọng hoặc khó khăn kéo dài – chỉ dẫn đến trầm cảm lâm sàng rõ rệt khi người phụ nữ đó CŨNG có thêm **yếu tố dễ tổn thương (vulnerability factor)**: mất mẹ trước 11 tuổi, thiếu mối quan hệ tâm sự thân thiết, có từ 3 con nhỏ dưới 14 tuổi trở lên ở nhà, hoặc thất

nghiệp. Nếu chỉ có tác nhân kích hoạt mà không có yếu tố dễ tổn thương thì nguy cơ trầm cảm thấp hơn nhiều – cho thấy trầm cảm không chỉ là phản ứng trực tiếp với sự kiện căng thẳng mà còn phụ thuộc rất nhiều vào bối cảnh xã hội rộng hơn của mỗi người.

(!) Lỗi thường gặp: When discussing the etiology of depression, avoid presenting only one level of explanation as "the" cause. Caspi et al.'s (2003) gene × environment finding, Beck's (1967) cognitive triad, and Brown and Harris's (1978) vulnerability-factor model are not competing explanations – a genetically sensitive person facing severe sociocultural adversity with few social buffers may be especially likely to develop, and have reinforced, the negative schemas that drive Beck's cognitive triad. A strong answer treats the levels as complementary and interacting, not as mutually exclusive alternatives.

Clinically, this multi-level view matters because it helps explain why no single treatment works equally well for every patient with depression. A person whose depression is driven primarily by chronic, unsupported adversity – few of the protective factors described by Brown and Harris – may benefit more from social, relational, or practical intervention (rebuilding a confiding relationship, reducing caregiving burden, addressing unemployment) than from medication alone, since the underlying stressor driving their distress is fundamentally social rather than purely neurochemical. A person with a strong genetic loading (Caspi et al.'s short 5-HTT allele) who has nonetheless experienced comparatively little adverse life stress, by contrast, presents a different balance of risk factors again, and may respond differently to the same intervention. This is precisely why the treatments discussed later in this unit increasingly mirror the same multi-level logic used to explain etiology, rather than assuming that whichever level a clinician happens to specialize in must be the single correct level of intervention for every patient who walks through the door.

5.5 Etiology of obsessive-compulsive disorder (OCD)

Obsessive-compulsive disorder (OCD) is characterized by recurrent, intrusive **obsessions** (unwanted thoughts, images, or urges that provoke anxiety) and **compulsions** (repetitive behaviours or mental acts performed to reduce that anxiety). Its etiology is again best understood across several levels of analysis, which interact both to cause and to maintain the disorder once it has developed.

Khái niệm cốt lõi

At the **biological** level, twin and family studies consistently show that OCD has a substantial **heritable** component: relatives of people with OCD have a higher risk of the disorder than the general population, and monozygotic twins show higher concordance than dizygotic twins, though no single gene has been found to be sufficient to cause OCD on its own. Complementing this genetic evidence, **neuroimaging research** has repeatedly implicated **hyperactivity in a cortico-striatal-thalamic circuit** – involving the **orbitofrontal cortex**, the **caudate nucleus**, and the **thalamus** – in the generation and persistence of obsessive-compulsive symptoms, suggesting a specific, at least partly biologically based circuit-level abnormality in how intrusive thoughts and the urge to act on them are processed and regulated.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ở cấp độ **sinh học**, nghiên cứu song sinh/gia đình cho thấy OCD có **yếu tố di truyền** đáng kể (dù không có một gen đơn lẻ nào đủ để gây bệnh), và nghiên cứu hình ảnh não cho thấy tình trạng **tăng hoạt động** ở một mạch thần kinh nối **vỏ não trước trán ổ mắt (orbitofrontal cortex)**, **nhân đuôi (caudate nucleus)**, và **đồi thị (thalamus)** có liên quan đến việc hình thành và duy trì triệu chứng OCD.

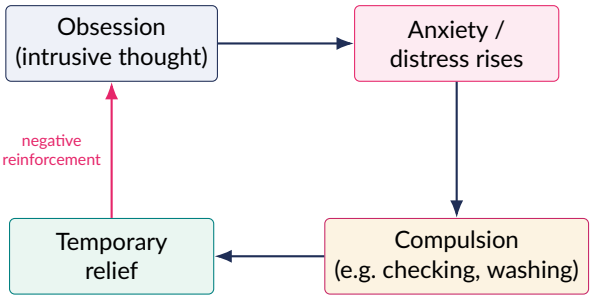
Ví dụ mẫu · Worked example

At the **cognitive** level, **Salkovskis's (1985) inflated responsibility model** proposes that OCD develops and is maintained through a specific cognitive distortion. Most people, at some point, experience unwanted, intrusive thoughts (violent, blasphemous, or contamination-related images or urges) – but the vast majority simply dismiss such thoughts as meaningless mental noise with no real significance. According to Salkovskis, a person who goes on to develop OCD instead **appraises** these same, essentially universal intrusive thoughts as evidence that they are personally, seriously responsible for preventing harm to themselves or to others ("if I thought about hurting someone, I must take responsibility for making sure it doesn't happen"). This **inflated sense of responsibility** is what transforms an ordinary, fleeting intrusive thought into a source of intense anxiety, which in turn drives the person to perform **neutralizing** compulsive behaviours (checking, washing, silently repeating a phrase) intended to reduce their perceived responsibility for a feared, catastrophic outcome.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ở cấp độ **nhận thức**, mô hình **trách nhiệm bị thổi phồng (inflated responsibility)** của **Salkovskis (1985)** cho rằng hầu hết mọi người đều thỉnh thoảng có những suy nghĩ xâm nhập (intrusive thoughts) khó chịu nhưng đơn giản bỏ qua chúng; người mắc OCD lại **diễn giải** chính những suy nghĩ đó là bằng chứng cho thấy bản thân phải chịu trách nhiệm nghiêm trọng trong việc ngăn chặn tổn hại – cảm giác trách nhiệm bị thổi phồng này gây ra lo âu dữ dội, từ đó thúc đẩy các hành vi **cưỡng chế (compulsion)** nhằm "trung hoà" nỗi lo.

At the **behavioural** level, the obsession–compulsion cycle is maintained through **operant conditioning**: performing a compulsive behaviour (e.g., repeated checking or handwashing) temporarily reduces the anxiety triggered by the obsessive thought, and this immediate relief acts as a **negative reinforcer**, increasing the likelihood that the compulsion will be repeated the next time the obsession recurs. Crucially, this only *maintains* the disorder rather than resolving it, because the anxiety relief is always temporary and the underlying obsession reliably returns, restarting the entire cycle from the beginning.



The obsessive-compulsive cycle: performing the compulsion briefly relieves anxiety, negatively reinforcing (strengthening) the compulsive response – but because the relief is only temporary and the obsession reliably returns, the cycle maintains the disorder rather than resolving it.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ở cấp độ **hành vi**, chu trình ám ảnh–cưỡng chế được duy trì qua **điều kiện hoá tạo tác (operant conditioning)**: thực hiện hành vi cưỡng chế giúp giảm lo âu **tạm thời**, đóng vai trò **củng cố âm tính (negative reinforcement)** khiến hành vi đó dễ lặp lại hơn – nhưng chính vì cảm giác nhẹ nhõm chỉ là tạm thời và suy nghĩ ám ảnh sẽ quay lại, chu trình này chỉ **duy trì** chứ không giải quyết được rối loạn.

(!) Lỗi thường gặp: A family or twin study showing OCD "runs in families," or neuroimaging showing altered activity in the orbitofrontal cortex–caudate–thalamus circuit, does not mean OCD is caused by a single, identifiable "OCD gene" or that it is a fixed, unchangeable biological destiny. As with depression, biological vulnerability in OCD is best understood as raising *risk* and interacting with cognitive and behavioural maintenance factors, not as a sole, deterministic cause – which is also precisely why psychological treatments such as ERP (Section 6) can be so effective even for a disorder with a genuine biological component.

OCD also frequently co-occurs with other anxiety-related and tic disorders, most notably **Tourette's syndrome**, a pattern consistent with these conditions sharing an underlying vulnerability in threat-detection, habit-formation, and motor-control circuitry, rather than each disorder arising from an entirely separate, unrelated cause. This pattern of comorbidity is one further reason clinicians increasingly favour combined biological and psychological treatment (Section 6): if OCD reflects an interaction between a biologically hyperactive alarm circuit, a specific cognitive distortion about responsibility, and a behavioural cycle of negative reinforcement, then addressing only one of these three components in isolation – medicating the circuit without ever addressing the responsibility appraisal or the reinforced compulsive behaviour, for instance – would be expected to leave much of the disorder's maintaining machinery untouched, which is exactly what the biopsychosocial treatment principle discussed later in this unit is designed to avoid.

5.6 Etiology of eating disorders (anorexia nervosa)

Anorexia nervosa is characterized by a persistent restriction of energy intake leading to significantly low body weight, an intense fear of gaining weight, and a disturbance in how body weight or shape is subjectively experienced. As with depression and OCD, its causes are best understood across multiple, interacting levels of analysis.

At the **biological** level, twin studies find a substantial heritable component to anorexia nervosa risk. **Bulik et al.'s (2006)** large-scale Swedish twin study, drawing on national twin registry data, estimated the heritability of anorexia nervosa at approximately **56%** – indicating that a majority of the variation in risk for the disorder within the studied population can be attributed to genetic differences, alongside a substantial remaining contribution from environmental factors. Anorexia nervosa is also notable for carrying one of the highest mortality rates of any psychiatric disorder, reflecting both the severe physical complications of prolonged starvation (cardiac, endocrine, and metabolic damage) and an elevated risk of suicide – underscoring why early identification and intervention, informed by the biological, cognitive, and sociocultural factors discussed in this section, are treated as a clinical priority rather than a purely academic concern.

Khái niệm cốt lõi

At the **cognitive** level, anorexia nervosa is associated with a **distorted body image** (perceiving one's own body as larger or heavier than it objectively is) and a broader **perfectionistic, rigid cognitive style** that extends well beyond body image to a strong need for control, order, and exacting personal standards. Weight and food intake often become one of the few domains in which a person experiencing significant psychological distress feels they can exert complete, precise, measurable control, which can help explain why the disorder can become so deeply entrenched and self-reinforcing.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ở cấp độ **sinh học**, nghiên cứu song sinh quy mô lớn tại Thuỵ Điển của **Bulik và cộng sự (2006)** ước tính **khả năng di truyền (heritability)** của chán ăn tâm thần (anorexia nervosa) vào khoảng **56%**. Chán ăn tâm thần cũng là một trong những rối loạn tâm thần có **tỷ lệ tử vong** cao nhất, do biến chứng thể chất nghiêm trọng của việc bỏ đói kéo dài và nguy cơ tự tử tăng cao. Ở cấp độ **nhận thức**, người mắc chán ăn tâm thần thường có **hình ảnh cơ thể méo mó (distorted body image)** và phong cách tư duy **cầu toàn, cứng nhắc** về cân nặng, hình thể, và việc kiểm soát bản thân.

Ví dụ mẫu · Worked example

At the **sociocultural** level, **Becker (2004)** conducted a naturally occurring quasi-experiment by studying adolescent girls in Fiji before and after television, including Western programming, was introduced to the islands in **1995**. Prior to television's introduction, disordered eating attitudes and behaviours, and dissatisfaction with body shape, were rare among Fijian girls, in a culture that had traditionally valued a robust, well-fed body shape. Becker's follow-up survey, conducted roughly three years after television's arrival, documented a marked rise in disordered eating: the percentage of girls reporting **self-induced vomiting** to control their weight rose from **0%** before television to **11.3%** afterward, alongside sharp increases in dieting and body dissatisfaction. In accompanying interviews, girls explicitly referenced Western television characters as an aspirational body and lifestyle model, describing wanting to look like, and emulate the lives of, the imported American television characters they now watched regularly. Because the introduction of television was a naturally occurring event that Becker did not control or manipulate, this is best classified as a **natural experiment**, and the before-and-after design allowed the study to isolate the impact of a specific cultural change – exposure to Western media ideals of thinness – on a population that had not previously been exposed to it.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ở cấp độ **văn hoá–xã hội**, **Becker (2004)** nghiên cứu các bé gái vị thành niên ở Fiji trước và sau khi truyền hình (bao gồm chương trình phương Tây) được du nhập vào năm **1995**. Trước đó, các hành vi rối loạn ăn uống gần như không tồn tại; sau khi có truyền hình, tỷ lệ bé gái từng **tự gây nôn** để kiểm soát cân nặng tăng từ **0%** lên **11,3%**, kèm theo gia tăng rõ rệt về ăn kiêng và không hài lòng với cơ thể. Các bé gái còn trực tiếp nhắc đến các nhân vật truyền hình phương Tây như hình mẫu ngoại hình/lối sống lý tưởng để noi theo. Vì việc du nhập truyền hình là một sự kiện xảy ra tự nhiên mà nhà nghiên cứu không hề can thiệp, đây được xem là một **thí nghiệm tự nhiên (natural experiment)**.

	Depression	OCD	Anorexia nervosa
Biological	Short 5-HTT allele × stressful life events (Caspi et al., 2003)	Heritable component; hyperactive orbitofrontal cortex–caudate–thalamus circuit	Substantial heritability in twin studies (≈56%; Bulik et al., 2006)
Cognitive	Beck's (1967) negative cognitive triad: self, world, future	Salkovskis's (1985) inflated responsibility for intrusive thoughts	Distorted body image/schema; rigid, perfectionistic cognitive style
Sociocultural / maintaining factor	Provoking agents interacting with vulnerability factors (Brown and Harris, 1978)	Negative reinforcement of compulsions maintains the cycle day to day	Exposure to Western media ideals of thinness (Becker, 2004, Fiji)

A biopsychosocial snapshot: each disorder is best explained by contributing factors operating at multiple levels simultaneously, not by any single-level account alone. Because OCD's third factor in this unit is behavioural rather than sociocultural, its bottom-row entry instead describes the behavioural cycle that maintains the disorder day to day.

Taken together, the biological, cognitive, and sociocultural evidence reviewed across depression, OCD, and anorexia nervosa points toward a broadly similar lesson: each disorder appears to require some degree of underlying biological vulnerability, but whether – and how severely – that vulnerability is expressed as a diagnosable disorder depends heavily on cognitive appraisal processes (Beck's triad, Salkovskis's inflated responsibility, distorted body schemas) and on the surrounding social and cultural environment (vulnerability factors, media exposure). This is precisely why the treatments reviewed in the next section combine biological and psychological approaches rather than treating either level as sufficient on its own.

5.7 Treatment of disorders

Because depression, OCD, and eating disorders each have contributing causes at multiple levels, contemporary treatment increasingly draws on both biological and psychological approaches, often in combination rather than in isolation.

Khái niệm cốt lõi

Biological treatment: **SSRIs (selective serotonin reuptake inhibitors)** are commonly prescribed for both depression and OCD. SSRIs work by blocking the reuptake (reabsorption) of serotonin at the presynaptic terminal, increasing the amount of serotonin available to act on postsynaptic receptors across the synaptic cleft. For **OCD** specifically, SSRIs are typically required at **higher doses** and over a **longer duration** than for depression before patients show meaningful clinical benefit, suggesting a somewhat different underlying serotonergic mechanism (or at least a different treatment-response threshold) between the two disorders, even though the same class of drug is used for both.

VN **GIẢI THÍCH TIẾNG VIỆT**

Thuốc SSRI (selective serotonin reuptake inhibitor) ức chế tái hấp thu serotonin, làm tăng lượng serotonin khả dụng tại khe synapse – được dùng cho cả trầm cảm và OCD. Với OCD, thường cần **liều cao hơn** và **thời gian dùng thuốc dài hơn** so với trầm cảm mới thấy hiệu quả rõ rệt.

Khái niệm cốt lõi

Psychological treatment: **Cognitive-behavioural therapy (CBT)** treats depression by directly targeting Beck's cognitive triad – helping patients identify, question, and restructure automatic negative thoughts about the self, world, and future, and replacing maladaptive behaviours (e.g., social withdrawal) with more adaptive ones (e.g., scheduled pleasant activities). For **OCD** specifically, the dominant psychological treatment is **Exposure and Response Prevention (ERP)**, a specific behavioural technique in which a patient is gradually and systematically exposed to situations or stimuli that trigger their obsessive anxiety (e.g., touching a "contaminated" surface) while being prevented from performing their usual compulsive, neutralizing response (e.g., handwashing). Repeated exposure without the compulsion allows the anxiety to naturally **habituate** – that is, to decrease on its own over time, as the person directly learns that the feared catastrophic outcome does not occur even without performing the compulsion – gradually weakening the entire obsession–compulsion cycle described in the previous section. Both CBT for depression and ERP for OCD are typically delivered over a structured course of weekly sessions (commonly in the range of roughly 12 to 20 sessions, though this varies with severity), with sessions often supplemented by structured homework tasks – such as practising cognitive restructuring outside the therapy room, or completing a self-directed exposure hierarchy – so that the skills learned in session generalize to the patient's everyday environment rather than remaining confined to the clinic itself.

VN **GIẢI THÍCH TIẾNG VIỆT**

CBT (liệu pháp nhận thức–hành vi) tái cấu trúc các suy nghĩ tiêu cực trong tam giác nhận thức của Beck. Với OCD, phương pháp chủ đạo là **ERP (Exposure and Response Prevention – Phơi nhiễm và Ngăn ngừa Phản ứng)**: bệnh nhân dần dần tiếp xúc với tình huống gây lo âu ám ảnh trong khi bị ngăn không cho thực hiện hành vi cưỡng chế thường lệ – qua đó lo âu tự nhiên **giảm dần (habituate)** theo thời gian, làm suy yếu dần chu trình ám ảnh–cưỡng chế. Cả hai liệu pháp thường được thực hiện qua một chuỗi buổi trị liệu hằng tuần có cấu trúc (thường khoảng 12–20 buổi), kèm theo bài tập về nhà để kỹ năng học được áp dụng vào đời sống thực tế, không chỉ trong phòng trị liệu.

Ví dụ mẫu · Worked example

DeRubeis et al. (2005) conducted a randomized controlled trial directly comparing biological and psychological treatment for depression. Patients with moderate-to-severe major depressive disorder were randomly assigned to 16 weeks of one of three conditions: **cognitive therapy (CBT)**, **antidepressant medication**, or a **pill placebo**. Both cognitive therapy and medication produced significantly greater improvement than the placebo condition, confirming that both approaches have genuine, specific therapeutic effects beyond expectation or spontaneous remission. Crucially, by the end of the 16-week trial, cognitive therapy delivered by experienced, well-trained therapists was found to be **comparably effective** to antidepressant medication – directly challenging the assumption that a purely biological intervention is necessarily superior to, or a necessary precondition for, effectively treating depression.

VN **GIẢI THÍCH TIẾNG VIỆT**

DeRubeis và cộng sự (2005) phân ngẫu nhiên bệnh nhân trầm cảm mức độ vừa–nặng vào 3 nhóm trong 16 tuần: **liệu pháp nhận thức (CBT)**, **thuốc chống trầm cảm**, hoặc **giả dược**. Cả CBT và thuốc đều hiệu quả hơn rõ rệt so với giả dược, và khi được thực hiện bởi nhà trị liệu giàu kinh nghiệm, CBT có hiệu quả **tương đương** với thuốc – thách thức giả định rằng chỉ có can thiệp sinh học mới thật sự hiệu quả trong điều trị trầm cảm.

Given that depression and OCD both have contributing factors at biological, cognitive, and sociocultural/behavioural levels, many clinicians now favour a **biopsychosocial, eclectic** approach that combines treatments – for example, prescribing an SSRI *alongside* CBT or ERP – rather than relying on a single level of explanation and treatment alone. Medication may reduce baseline anxiety and physiological arousal enough to allow a patient to engage more effectively with the harder cognitive and behavioural work of therapy, while therapy addresses the maintaining cognitive and behavioural patterns that medication alone does not directly target.

(!) Lỗi thường gặp: The fact that a biological treatment relieves a disorder's symptoms does not, on its own, prove that a biological deficit originally *caused* the disorder. That an SSRI, which increases serotonin availability, relieves depressive symptoms in many patients does not by itself establish that low serotonin activity caused the depression in the first place – just as aspirin relieving a headache does not mean the headache was caused by an aspirin deficiency. Treatment efficacy and etiological causation are logically separate questions that require separate evidence to establish.

Treatment adherence is itself shaped by many of the same factors discussed throughout this unit. A patient who has internalized **self-stigma** (Section 7) may feel reluctant to continue taking medication or attending therapy sessions, fearing that doing so confirms a shameful, discrediting identity as "mentally ill." A patient whose depression is substantially maintained by ongoing sociocultural adversity – few of Brown and Harris's protective factors, an unresolved major difficulty – may see any single treatment's benefits eroded over time if their underlying life circumstances do not also improve alongside it. This is a further, practical argument for the eclectic, multi-level treatment approach favoured by many clinicians today: addressing only the neurochemical or only the cognitive dimension of a disorder, while leaving stigma and social adversity completely unaddressed, risks limiting how durable any single treatment's benefits can actually be over the long term.

5.8 Stigma of mental illness

Beyond the clinical questions of definition, diagnosis, etiology, and treatment, abnormal psychology must also grapple with the social consequences of being identified as having a mental disorder.

Khái niệm cốt lõi

Stigma refers to negative social attitudes and stereotypes directed at people with a mental disorder, which can lead to overt **discrimination** (e.g., in employment, housing, or social relationships) and can itself directly worsen clinical outcomes. Stigma operates in at least two distinct ways: as **public stigma**, the negative attitudes and discriminatory behaviour of the wider community toward people with a diagnosed disorder, and as **self-stigma**, the process by which an individual **internalizes** these same negative stereotypes about their own condition, which can significantly reduce self-esteem and self-efficacy. Both forms of stigma have well-documented practical consequences: people frequently **delay or avoid** seeking treatment altogether for fear of being negatively labelled or judged, and those who have internalized self-stigma often show reduced engagement and persistence with treatment even once they have started it, undermining the very interventions that could otherwise help them.

VN **GIẢI THÍCH TIẾNG VIỆT**

Kỳ thị (stigma) là thái độ xã hội tiêu cực và định kiến nhắm vào người mắc rối loạn tâm thần, có thể dẫn đến **phân biệt đối xử (discrimination)** và tự nó làm xấu đi kết quả điều trị. Có **kỳ thị công khai (public stigma)** (thái độ tiêu cực từ cộng đồng) và **tự kỳ thị (self-stigma)** (người bệnh tự nội tâm hoá các định kiến tiêu cực đó, làm giảm lòng tự trọng). Cả hai đều khiến người

bệnh **trì hoãn tìm kiếm điều trị** vì sợ bị dán nhãn, hoặc giảm mức độ gắn bó với điều trị dù đã bắt đầu.

Ví dụ mẫu · Worked example

Rosenhan's (1973) pseudopatient study is also a landmark illustration of how diagnostic labelling itself can contribute to stigma and to the distorted interpretation of a person's behaviour. Once hospital staff had assigned the label "schizophrenia" to a pseudopatient, that label – rather than the patient's actual, entirely normal ongoing behaviour – shaped how every subsequent action was interpreted: mundane behaviours such as note-taking, or pacing a corridor out of boredom, were recorded by staff in clinical notes as symptomatic of the underlying "illness," rather than as the unremarkable behaviour of a bored, healthy person confined to a ward. In the study's follow-up phase, a forewarned hospital – confident that it could now reliably distinguish pseudopatients from genuine patients – rated a substantial number of authentic new patients as suspected pseudopatients, even though Rosenhan had sent none during that period; the label "possible fake" was applied to real, distressed patients based on staff expectation rather than on the patients' actual presentation. Together, these findings show concretely how a diagnostic label, once assigned (or even merely anticipated), reshapes how a person's ordinary behaviour is perceived and recorded by others – a psychological mechanism closely related to how public and self-stigma distort the treatment and self-perception of people with genuine mental disorders in everyday life.

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu của **Rosenhan (1973)** (đã nêu ở phần Chẩn đoán) cũng minh hoạ rõ cách một **nhãn chẩn đoán** có thể góp phần gây ra kỳ thị: một khi bệnh nhân giả bị gắn nhãn "tâm thần phân liệt," mọi hành vi bình thường sau đó (như ghi chép, đi lại vì buồn chán) đều bị nhân viên diễn giải như triệu chứng của bệnh, thay vì hành vi bình thường của một người khoẻ mạnh đang bị giam trong bệnh viện. Ở giai đoạn tiếp theo, một bệnh viện được cảnh báo trước đã gắn nhãn "nghi ngờ giả bệnh" cho rất nhiều bệnh nhân **thật sự** – cho thấy nhãn chẩn đoán (hoặc chỉ riêng kỳ vọng về nhãn đó) có thể bóp méo cách người khác nhìn nhận hành vi của một người, tương tự cơ chế của kỳ thị trong đời sống thực.

Public health campaigns that promote accurate mental health literacy – for example, explaining that depression, OCD, and eating disorders each have genuine, well-documented biological and cognitive contributing factors rather than reflecting simple personal weakness, laziness, or vanity – are widely regarded as one practical way to reduce public stigma, since stigmatizing attitudes are frequently rooted in inaccurate beliefs about the causes and controllability of mental disorders. Reducing stigma is not merely a matter of social politeness: because both public and self-stigma are directly linked to delayed treatment-seeking and reduced treatment engagement, addressing stigma is itself a component of effective mental health care, not a separate issue from it.

5.9 Problem Bank

Bài tập luyện tập

A person has an IQ of 172, placing them in the top 0.01% of the population. According to the statistical deviation criterion alone, how should this rarity be interpreted?

(A) As definite proof of a mental disorder

(B) As statistically abnormal, but this illustrates why rarity alone is an insufficient criterion for clinical abnormality

(C) As making the person permanently immune from ever being diagnosed with a disorder

(D) As evidence of failure to function adequately

Lời giải chi tiết

An IQ of 172 is genuinely rare (statistically abnormal) by the statistical deviation criterion, yet exceptional intelligence is not, by itself, evidence of a mental disorder – illustrating the central limitation of this criterion: rarity alone does not imply pathology, since many statistically rare traits are not clinically abnormal, while some clinically significant symptoms (mild anxiety, low mood) are statistically common. **(B)**.

Bài tập luyện tập

Homosexuality was listed as a diagnosable disorder in the DSM-I (1952) and DSM-II (1968) before being removed by the APA in 1973, partly informed by Hooker's (1957) research finding no difference in psychological adjustment between homosexual and heterosexual men. This history best illustrates a limitation of which criterion for abnormality?

(A) Statistical deviation

(B) Deviation from social norms, which is culturally and historically relative rather than a fixed, universal standard

(C) Failure to function adequately

(D) Deviation from ideal mental health

Lời giải chi tiết

Homosexuality was pathologized primarily because it violated the dominant social and legal norms of the mid-20th century, not because Hooker's research (or any later research) found an inherent link to poorer psychological adjustment; this is a clear historical example of how deviation-from-social-norms judgements shift over time and across cultures, rather than reflecting a fixed clinical reality. **(B)**.

Bài tập luyện tập

A man reports intense personal distress and has stopped attending work, showering, or contacting friends for several weeks following a job loss. Which criterion for abnormality does this scenario most directly illustrate?

(A) Statistical deviation

(B) Failure to function adequately

(C) Deviation from ideal mental health only

(D) Deviation from social norms only

Lời giải chi tiết

The scenario centres on an inability to cope with the ordinary demands of daily life (work, hygiene, relationships) combined with significant subjective distress – the defining features of the **failure to function adequately** criterion, rather than simply statistical rarity or a violation of social convention. **(B)**.

Bài tập luyện tập

According to Jahoda's (1958) criteria for positive mental health, a person who sets and pursues their own goals independently of excessive social pressure, rather than simply conforming, is displaying:

(A) Self-actualization
(B) Autonomy
(C) Resistance to stress
(D) Accurate perception of reality

Lời giải chi tiết

Autonomy, in Jahoda's (1958) framework, specifically refers to independence from excessive social influence and the capacity for self-directed action – distinct from self-actualization (fulfilling one's fullest potential) or resistance to stress (coping well under pressure). **(B)**.

Bài tập luyện tập

Which statement accurately distinguishes the DSM-5 from the ICD-11?

(A) The DSM-5 is published by the WHO and covers all diseases; the ICD-11 is published by the APA and covers only mental disorders
(B) The DSM-5, published by the American Psychiatric Association, covers only mental disorders, while the ICD-11, published by the World Health Organization, classifies all diseases including a chapter on mental disorders
(C) Only the ICD-11 uses standardized diagnostic criteria
(D) The two manuals cannot ever be used to diagnose the same patient

Lời giải chi tiết

The **DSM-5** (American Psychiatric Association) is dedicated solely to mental disorders, whereas the **ICD-11** (World Health Organization) is a much broader classification covering all diseases and health conditions, of which mental, behavioural, and neurodevelopmental disorders form only one chapter; both use standardized, criteria-based diagnostic checklists. **(B)**.

Bài tập luyện tập

Two psychiatrists independently examine the same patient and both diagnose "generalized anxiety disorder," showing good inter-clinician agreement. This agreement is best described as evidence of the diagnostic system's:

(A) Validity, since agreement proves the diagnosis is scientifically meaningful
(B) Reliability, though this alone does not establish that the category reflects a genuine, distinct clinical condition
(C) Ecological validity
(D) Population validity

Lời giải chi tiết

Consistent agreement between independent clinicians is precisely what **reliability** means in a diagnostic context; it does not, on its own, establish **validity** – whether the diagnostic category actually corresponds to a coherent, genuine underlying condition – since clinicians could reliably agree on a checklist-based label that does not track a real, distinct disorder. **(B)**.

Bài tập luyện tập

In Rosenhan's (1973) study, eight pseudopatients reported hearing an unfamiliar voice say ambiguous words such as "empty," "hollow," and "thud," then behaved entirely normally after admission. What happened to these pseudopatients?

(A) All were immediately identified as sane and released within a day

(B) All were admitted, eleven of the twelve admissions were diagnosed with schizophrenia, and none were detected as sane by staff during an average stay of 19 days

(C) None were admitted to any hospital

(D) They were correctly diagnosed as researchers conducting a study

Lời giải chi tiết

All eight pseudopatients gained admission across twelve hospitals, eleven of the twelve admissions resulted in a diagnosis of schizophrenia, and despite behaving normally throughout, no staff member detected any pseudopatient as sane during hospitalizations that lasted an average of 19 days – all were eventually discharged with the label "schizophrenia in remission." **(B)**.

Bài tập luyện tập

In a follow-up to Rosenhan's (1973) study, a hospital that had been forewarned and was confident it could detect further pseudopatients subsequently flagged many genuine new patients as suspected pseudopatients. What did Rosenhan reveal about this follow-up?

(A) He had, in fact, sent even more pseudopatients than the hospital detected

(B) He had sent no pseudopatients at all during that period, showing the hospital staff's expectations, not the patients' actual presentation, drove their judgements

(C) The hospital correctly identified every pseudopatient sent

(D) The follow-up was never actually conducted

Lời giải chi tiết

Rosenhan sent **zero** pseudopatients during the follow-up period, yet the forewarned hospital's staff – primed to expect deception – rated a substantial number of genuine, distressed patients as likely fakes, demonstrating how strongly staff expectation, rather than a patient's actual clinical presentation, can shape diagnostic judgement. **(B)**.

Bài tập luyện tập

In Caspi et al.'s (2003) study, individuals carrying the short allele of the 5-HTT gene who also experienced multiple stressful life events between ages 21–26 showed elevated depression and suicidality rates. What did the study find regarding genotype alone?

(A) The short allele predicted depression regardless of stress exposure

(B) Genotype alone, without significant life stress, did not predict depression, demonstrating a gene × environment interaction

(C) Only the long allele was ever linked to depression

(D) Stressful life events had no measurable effect on any genotype

Lời giải chi tiết

Caspi et al. (2003) found that the short 5-HTT allele only elevated depression/suicidality risk in combination with multiple stressful life events; among participants with little or no life stress, genotype alone did not predict later depression – the hallmark of a genuine **gene × environment interaction** rather than a simple genetic main effect. **(B)**.

Bài tập luyện tập

A depressed patient repeatedly thinks, "No matter what I do, my situation is hopeless and will never improve." This thought corresponds to which component of Beck's (1967) cognitive triad?

(A) Negative view of the self
(B) Negative view of the world
(C) Negative view of the future
(D) Overgeneralization of a single event

Lời giải chi tiết

A belief that one's situation "will never improve" is specifically a negative view of the **future** – distinct from negative beliefs about the self (personal worth) or the world (how situations and other people generally behave) within Beck's cognitive triad. **(C)**.

Bài tập luyện tập

According to Brown and Harris's (1978) Camberwell study, which of the following is a "vulnerability factor" that increases the risk that a provoking agent will lead to clinical depression?

(A) Having a close, confiding relationship with a partner
(B) Loss of one's own mother before age 11
(C) Being employed outside the home
(D) Having no children living at home

Lời giải chi tiết

Brown and Harris (1978) identified the loss of one's own mother before age 11 as one of four key vulnerability factors (alongside lack of a confiding relationship, three or more children under 14 at home, and unemployment) that, combined with a provoking agent, substantially raised the risk of clinical depression; a confiding relationship and employment were protective, not risk, factors. **(B)**.

Bài tập luyện tập

Which statement best summarizes biological research on obsessive-compulsive disorder (OCD)?

(A) A single dominant gene has been isolated as the sole cause of OCD
(B) Twin/family studies show a heritable component, and neuroimaging implicates hyperactivity in a circuit involving the orbitofrontal cortex, caudate nucleus, and thalamus
(C) OCD has no biological basis whatsoever
(D) Neuroimaging research has found no consistent brain differences in OCD

Lời giải chi tiết

Biological research on OCD converges on two findings: a meaningful **heritable** component from twin/family studies (without any single sufficient gene identified) and **hyperactivity** in a cortico-striatal-thalamic circuit involving the orbitofrontal cortex, caudate nucleus, and thalamus from neuroimaging studies. **(B)**.

Bài tập luyện tập

According to Salkovskis's (1985) model, what distinguishes a person who develops OCD from the majority of people who also experience occasional unwanted intrusive thoughts?

(A) People with OCD are the only ones who ever experience intrusive thoughts

(B) People with OCD appraise ordinary intrusive thoughts as evidence of serious personal responsibility for preventing harm, rather than dismissing them as meaningless

(C) People with OCD have no capacity for anxiety

(D) Intrusive thoughts are entirely absent in people who develop OCD

Lời giải chi tiết

Salkovskis (1985) argued that intrusive thoughts themselves are a near-universal experience that most people simply dismiss; what distinguishes OCD is the **inflated appraisal** of these thoughts as meaning the person is personally, seriously responsible for preventing harm, which drives anxiety and neutralizing compulsions. **(B)**.

Bài tập luyện tập

A person with OCD checks the front door lock ten times before feeling calm enough to leave the house. Why does this checking behaviour tend to become more frequent over time?

(A) Because checking is positively reinforced by social praise

(B) Because checking is negatively reinforced: it temporarily reduces the anxiety triggered by the obsessive thought, making the behaviour more likely to recur

(C) Because checking permanently eliminates the obsessive thought

(D) Because checking has no effect on anxiety

Lời giải chi tiết

Checking behaviour is maintained through **negative reinforcement**: performing the compulsion brings temporary relief from obsessive anxiety, and this relief increases the likelihood the behaviour will be repeated – though because the relief never lasts and the obsession returns, the compulsion is performed ever more often rather than resolving the underlying anxiety. **(B)**.

Bài tập luyện tập

Bulik et al.'s (2006) large Swedish twin study estimated the heritability of anorexia nervosa at approximately:

(A) 0%

(B) 56%

(C) 100%

(D) It could not be estimated at all from twin data

Lời giải chi tiết

Bulik et al.'s (2006) Swedish twin registry study estimated the heritability of anorexia nervosa at approximately **56%**, indicating a substantial genetic contribution to risk alongside a significant remaining role for environmental factors – not a purely genetic (100%) or purely environmental (0%) account. **(B)**.

Bài tập luyện tập

In Becker's (2004) study, what change did she document among adolescent girls in Fiji following the introduction of Western television in 1995?

(A) A decrease in reported dieting and body dissatisfaction

(B) A marked rise in disordered eating attitudes and behaviours, including a rise in self-induced vomiting from 0% to 11.3%

(C) No measurable change in eating attitudes

(D) An increase in traditional preference for a robust, well-fed body shape

Lời giải chi tiết

Becker (2004) found that disordered eating attitudes and behaviours – essentially absent before television's introduction – rose markedly afterward, including a rise in self-reported purging (self-induced vomiting) from 0% to 11.3%, alongside sharply increased dieting and body dissatisfaction, with girls citing Western television characters as an aspirational model. **(B)**.

Bài tập luyện tập

In DeRubeis et al.'s (2005) trial comparing cognitive therapy, antidepressant medication, and pill placebo for moderate-to-severe depression, what was the key finding regarding cognitive therapy?

(A) Cognitive therapy was less effective than placebo

(B) Cognitive therapy delivered by experienced therapists was comparably effective to medication, and both outperformed placebo

(C) Only medication outperformed placebo; cognitive therapy showed no benefit

(D) Placebo outperformed both active treatments

Lời giải chi tiết

DeRubeis et al. (2005) found that both cognitive therapy and antidepressant medication significantly outperformed placebo, and that cognitive therapy delivered by experienced, well-trained therapists was comparably effective to medication by the end of the 16-week trial – evidence that a purely biological intervention is not necessarily superior for treating depression. **(B)**.

Bài tập luyện tập

Exposure and Response Prevention (ERP), a key behavioural treatment for OCD, works by:

(A) Increasing serotonin levels directly through medication

(B) Gradually exposing a patient to anxiety-provoking obsessive triggers while preventing the usual compulsive response, allowing anxiety to habituate over repeated exposure

(C) Removing all obsessive thoughts through hypnosis

(D) Encouraging the patient to perform compulsions more frequently and thoroughly

Lời giải chi tiết

ERP systematically exposes a patient to obsession-triggering situations while blocking the compulsive/neutralizing response, so that anxiety is allowed to naturally decrease (**habituate**) over repeated exposures without the compulsion – gradually weakening the obsession–compulsion cycle rather than reinforcing it further. **(B)**.

Bài tập luyện tập

A patient with OCD is prescribed an SSRI. Compared to a patient being treated for depression with the same class of drug, what does the research summarized in this unit suggest about their treatment?

(A) The OCD patient will need an identical dose for an identical duration

(B) The OCD patient will typically require a higher dose and a longer duration of treatment before clinical benefit appears

(C) SSRIs are never prescribed for OCD

(D) SSRIs work through a completely different neurotransmitter system in OCD

Lời giải chi tiết

For OCD specifically, SSRIs are typically required at higher doses and for a longer duration than for depression before meaningful clinical benefit appears, even though both conditions are treated with the same class of serotonin-increasing medication. **(B)**.

Bài tập luyện tập

A person avoids seeking help for their depression because they fear being seen as “crazy” or “weak” by friends and coworkers, and privately begins to believe these same negative labels apply to them. This scenario best illustrates:

(A) Construct validity

(B) Public stigma and self-stigma

(C) Statistical deviation

(D) Exposure and Response Prevention

Lời giải chi tiết

Fear of being negatively judged by others reflects **public stigma**, while internalizing those same negative stereotypes about oneself reflects **self-stigma** – both of which are well documented to reduce treatment-seeking and engagement, worsening outcomes for people with genuine mental disorders. **(B)**.

Bài tập luyện tập

SAQ-style: Outline two criteria used to define abnormality, and explain one limitation of each.

Lời giải chi tiết

One criterion is **statistical deviation**, which defines abnormality as a behaviour, thought, or trait that occurs only rarely relative to the wider population (e.g., an extremely low or high score on a standardized psychological measure). Its key limitation is that rarity alone does not imply disorder: exceptionally high intelligence or artistic talent is statistically rare but is not, in itself, clinically abnormal, while some genuinely distressing experiences (e.g., mild anxiety before an important event) are statistically common. A second criterion is **deviation from social norms**, which defines abnormality as behaviour that violates the unwritten rules of conduct a society expects its members to follow. Its key limitation is that social norms vary substantially across cultures and historical periods, making this criterion **culturally relative** rather than a fixed, universal standard – illustrated historically by homosexuality's classification as a disorder in the DSM-I (1952) and DSM-II (1968) before its removal in 1973, a shift in social norms rather than any change in the underlying psychological reality of the people being classified. Full credit accurately outlines two distinct criteria and links each to a specific, accurate limitation.

Bài tập luyện tập

SAQ-style: Explain the difference between reliability and validity in psychiatric diagnosis, with reference to Rosenhan's (1973) study.

Lời giải chi tiết

Reliability refers to the consistency of diagnosis – whether different clinicians examining the same patient reach the same diagnosis, and whether the same patient is diagnosed consistently over time. **Validity** refers to whether a diagnostic category is scientifically meaningful – whether it reflects a genuine, distinct clinical condition rather than an arbitrary label. **Rosenhan (1973)** sent eight sane pseudopatients, each reporting only a single invented auditory symptom, to twelve US psychiatric hospitals; all were admitted, eleven were diagnosed with schizophrenia, and none were detected as sane by staff during an average 19-day stay, with all eventually discharged as "schizophrenia in remission." This raised serious doubts about the **validity** of psychiatric diagnosis, since trained staff could not distinguish sane individuals from genuinely disordered patients using the hospital's normal diagnostic procedures. In a follow-up, a forewarned hospital confidently flagged many genuine new patients as suspected pseudopatients even though Rosenhan sent none, further suggesting that diagnostic judgements can be driven by staff expectation rather than a patient's actual presentation. Full credit defines both terms accurately and links them to specific, accurate details of Rosenhan's study.

Bài tập luyện tập

SAQ-style: Describe the findings of Brown and Harris's (1978) Camberwell study, and explain what they suggest about the sociocultural etiology of depression.

Lời giải chi tiết

Brown and Harris (1978) studied working-class women in Camberwell, South London, and found that a **provoking agent** – a severe acute life event or an ongoing major difficulty – substantially increased the risk of clinical depression, but primarily among women who also

possessed one or more **vulnerability factors**: loss of their own mother before age 11, lack of a close confiding relationship, three or more children under 14 at home, and unemployment. Women who experienced a provoking agent *without* any of these vulnerability factors were considerably less likely to develop depression than those who experienced both a provoking agent and vulnerability factors together. This suggests that depression is not simply a direct, universal reaction to stressful events, but depends heavily on a person's broader social circumstances, which can either buffer against or amplify the impact of an acute stressor – supporting a **sociocultural** explanation in which social support, caregiving burden, and economic security jointly shape vulnerability to depression. Full credit accurately describes both the provoking agent and at least two vulnerability factors, and explains their interaction.

Bài tập luyện tập

SAQ-style: Explain the cognitive explanation for obsessive-compulsive disorder (OCD), with reference to Salkovskis's (1985) inflated responsibility model.

Lời giải chi tiết

Salkovskis's (1985) inflated responsibility model proposes that OCD develops through a specific cognitive distortion applied to ordinary, universal experiences. Most people occasionally experience unwanted, intrusive thoughts (violent, blasphemous, or contamination-related images or urges) and simply dismiss them as meaningless mental noise. According to Salkovskis, a person who develops OCD instead **appraises** these same intrusive thoughts as evidence that they are personally and seriously responsible for preventing harm to themselves or others – for example, interpreting an intrusive thought about hurting someone as proof that they must take extreme precautions to ensure it never happens. This **inflated sense of responsibility** transforms an ordinary, fleeting thought into a source of intense anxiety, which in turn drives **neutralizing** compulsive behaviours (such as checking or washing) intended to reduce the perceived responsibility for a feared, catastrophic outcome. The model explains OCD cognitively because it is not the intrusive thought itself, but the person's distorted *interpretation* of that thought, that is proposed to cause the disorder. Full credit accurately explains the appraisal process and links it to the resulting anxiety and compulsions.

Bài tập luyện tập

SAQ-style: Outline the procedure and findings of Becker's (2004) study, and explain what it suggests about the sociocultural etiology of eating disorders.

Lời giải chi tiết

Becker (2004) studied adolescent girls in Fiji before and after Western television was introduced to the islands in 1995, using this naturally occurring event as a quasi-experimental design. Before television's introduction, disordered eating attitudes and behaviours were essentially absent, in a culture that traditionally valued a robust, well-fed body shape. Following television's introduction, Becker documented a marked rise in disordered eating: self-reported self-induced vomiting to control weight rose from 0% to 11.3%, alongside sharp increases in dieting and body dissatisfaction, and girls explicitly cited Western television characters as an aspirational body and lifestyle model in follow-up interviews. Because the change in television access was a naturally occurring event that Becker did not create or control, and because comparable pre-existing rates of disordered eating were essentially absent, this provides strong evidence that exposure to Western media ideals of thinness can causally contribute to the

development of disordered eating attitudes and behaviours – supporting a genuinely **socio-cultural** explanation for at least part of eating disorder risk, rather than a purely biological or individual-cognitive account. Full credit accurately describes the before/after design and at least one specific statistic or finding.

Bài tập luyện tập

SAQ-style: Explain the concept of stigma in relation to mental disorders, and outline one way that psychiatric diagnosis can contribute to it.

Lời giải chi tiết

Stigma refers to negative social attitudes and stereotypes directed at people with a mental disorder, which can lead to discrimination (e.g., in employment or social relationships) and can itself worsen clinical outcomes. **Public stigma** refers to negative attitudes held by the wider community, while **self-stigma** refers to a person internalizing these same negative stereotypes about their own condition, which can reduce self-esteem and engagement with treatment; both forms of stigma are linked to people delaying or avoiding treatment-seeking for fear of being negatively labelled. Psychiatric diagnosis can contribute to stigma through the effect of **labelling**: once a diagnostic label is applied, it can reshape how all of a person's subsequent, even entirely ordinary, behaviour is interpreted by others. **Rosenhan's (1973)** study illustrated this directly – once hospital staff had assigned a pseudopatient the label "schizophrenia," mundane behaviours such as note-taking were recorded in clinical notes as symptomatic of illness rather than as the unremarkable behaviour of a bored, healthy person. Full credit defines stigma (including self-stigma) accurately and explains a specific, accurate mechanism by which labelling can contribute to it.

Bài tập luyện tập

ERQ-style: Discuss the etiology of depression with reference to research at more than one level of analysis.

Lời giải chi tiết

Depression is best explained not by a single cause but by contributing factors that interact across biological, cognitive, and sociocultural levels of analysis. At the **biological** level, **Caspi et al. (2003)** followed a Dunedin, New Zealand birth cohort and found that individuals carrying one or two copies of the short allele of the 5-HTT (serotonin transporter) gene who also experienced multiple stressful life events between ages 21 and 26 showed significantly elevated rates of depression and suicidality compared to long-allele homozygotes exposed to the same stressors; critically, genotype alone, without significant life stress, did not predict later depression, demonstrating a genuine **gene × environment interaction** rather than a simple genetic main effect. At the **cognitive** level, **Beck's (1967) cognitive triad** proposes that depression is generated and maintained by persistently negative views of the self, the world, and the future, arising from dysfunctional schemas formed in childhood and sustained through biased information processing such as overgeneralizing a single failure into evidence of complete, permanent inadequacy. At the **sociocultural** level, **Brown and Harris's (1978)** Camberwell study of working-class London women found that a severe life event or major ongoing difficulty (a "provoking agent") was far more likely to trigger clinical depression among women who also possessed vulnerability factors – loss of their own mother before age 11, lack of a close confiding relationship, three or more children under 14 at home, or unemployment – than among

women facing a provoking agent alone. Taken together, these three levels are not competing explanations but describe how depression is likely to emerge through interacting vulnerabilities: a genetically sensitive individual who also lacks social buffers against adversity may be especially prone to developing, and having reinforced, the very negative schemas that drive Beck's cognitive triad, since repeated real-world setbacks with little social support provide exactly the kind of evidence a dysfunctional schema would seize upon and generalize from. A full-credit answer names and accurately describes evidence from at least two distinct levels of analysis, and explicitly discusses how the levels may interact rather than simply listing them side by side.

Bài tập luyện tập

ERQ-style: Discuss the etiology of obsessive-compulsive disorder (OCD), with reference to research at more than one level of analysis.

Lời giải chi tiết

OCD is best understood as arising from the interaction of biological predisposition, a specific cognitive distortion, and a behavioural mechanism that maintains the disorder once it has developed. At the **biological** level, twin and family studies show that OCD has a substantial heritable component – relatives of people with OCD show elevated risk, and monozygotic twins show higher concordance than dizygotic twins – although no single gene has been identified as sufficient to cause the disorder; neuroimaging research complements this by consistently implicating **hyperactivity in a cortico-striatal-thalamic circuit**, involving the orbitofrontal cortex, caudate nucleus, and thalamus, in the generation of obsessive-compulsive symptoms. At the **cognitive** level, **Salkovskis's (1985) inflated responsibility model** proposes that although unwanted intrusive thoughts are a near-universal human experience that most people simply dismiss, a person who develops OCD instead appraises these thoughts as evidence of serious personal responsibility for preventing harm to themselves or others, transforming an ordinary fleeting thought into a source of intense anxiety. At the **behavioural** level, this anxiety then drives compulsive, neutralizing behaviours (e.g., checking, washing) that are **negatively reinforced** because they temporarily reduce anxiety, increasing the likelihood the compulsion will be repeated – although this only maintains the disorder rather than resolving it, since the relief is always temporary and the underlying obsession reliably returns. These levels interact directly: a biological predisposition toward heightened anxiety and hyperactive threat-monitoring circuitry may make intrusive thoughts more frequent or more distressing in the first place, increasing the raw material available for Salkovskis's inflated-responsibility appraisal to act on, while the resulting compulsions are then behaviourally reinforced and entrenched over time regardless of the biological or cognitive starting point. A full-credit answer accurately describes evidence from at least two levels of analysis and explains a plausible interaction between them, rather than presenting the levels as isolated, competing accounts.

Bài tập luyện tập

ERQ-style: Evaluate the extent to which classification systems such as the DSM-5 provide a reliable and valid basis for diagnosing psychological disorders.

Lời giải chi tiết

Classification systems such as the **DSM-5** (American Psychiatric Association) and **ICD-11** (World Health Organization) provide standardized, criteria-based checklists intended to allow

clinicians anywhere to reach a consistent (reliable) and scientifically meaningful (valid) diagnosis from the same symptom picture. In principle, standardized criteria improve **reliability**: because clinicians check a patient's presentation against the same explicit list of symptoms and duration requirements, agreement between independent clinicians should be higher than under vaguer, less structured diagnostic approaches. However, **Rosenhan's (1973)** classic study raises serious doubts about how well this reliability translates into genuine **validity** in practice. Eight sane pseudopatients, reporting only a single fabricated auditory symptom, were admitted to twelve US psychiatric hospitals; eleven of the twelve admissions were diagnosed with schizophrenia, and no hospital staff detected any pseudopatient as sane during hospitalizations that averaged 19 days, with all eventually discharged as "schizophrenia in remission." This suggests that trained clinical staff could not reliably distinguish sane individuals from genuinely disordered patients using standard diagnostic procedures – a direct challenge to validity, since a valid diagnostic category should track a real, detectable underlying condition rather than merely a superficial presenting complaint. Rosenhan's follow-up strengthens this concern: a hospital forewarned about the study, and confident it could now detect pseudopatients, subsequently flagged a substantial number of genuine new patients as suspected fakes, even though Rosenhan sent none during that period – showing that diagnostic judgement can be shaped by staff expectation as much as by a patient's actual presentation. A balanced evaluation should note that psychiatric diagnosis has evolved considerably since 1973, with more detailed, operationalized DSM-5/ICD-11 criteria and less reliance on any single reported symptom; nonetheless, Rosenhan's findings remain a landmark caution that standardized criteria alone do not guarantee that a diagnostic category, once applied, reflects a fully valid, stable clinical reality, and that diagnostic labels can distort the very observations meant to test them. A full-credit answer explains both reliability and validity accurately, uses Rosenhan's study as detailed supporting evidence, and reaches a balanced, reasoned conclusion.

Bài tập luyện tập

ERQ-style: Discuss the effectiveness of biological and psychological treatments for depression and/or obsessive-compulsive disorder (OCD).

Lời giải chi tiết

Both biological and psychological treatments have well-established evidence of effectiveness for depression and OCD, though each works through a different mechanism and neither is straightforwardly superior in every circumstance. **Biological treatment** for both disorders commonly involves **SSRIs (selective serotonin reuptake inhibitors)**, which increase serotonin availability at the synapse by blocking its reuptake at the presynaptic terminal; notably, OCD typically requires **higher doses and a longer duration** of SSRI treatment than depression before clinical benefit appears, suggesting the two disorders may respond somewhat differently even to the same drug class. **Psychological treatment** for depression centres on **cognitive-behavioural therapy (CBT)**, which directly targets Beck's (1967) cognitive triad by helping patients identify and restructure automatic negative thoughts about the self, world, and future; for OCD, the dominant psychological treatment is **Exposure and Response Prevention (ERP)**, in which patients are gradually exposed to obsession-triggering situations while being prevented from performing their usual compulsive response, allowing anxiety to habituate over repeated exposures and weakening the obsession–compulsion cycle. Strong comparative evidence for depression comes from **DeRubeis et al.'s (2005)** randomized controlled trial, which assigned patients with moderate-to-severe major depressive disorder to 16 weeks of cognitive therapy, antidepressant medication, or pill placebo; both cognitive therapy and medication

significantly outperformed placebo, and cognitive therapy delivered by experienced therapists was comparably effective to medication by the end of the trial – directly challenging the assumption that biological intervention is inherently superior for treating depression. A purely biological or purely psychological approach considered alone may not address every contributing factor: given that depression and OCD have contributing causes at biological, cognitive, and sociocultural/behavioural levels, many clinicians now favour a **biopsychosocial, eclectic** approach, combining an SSRI with CBT or ERP so that medication reduces baseline anxiety enough for a patient to engage effectively with therapy, while therapy addresses the cognitive and behavioural patterns that medication alone does not directly target. It is also important not to over-infer causation from treatment effectiveness: that an SSRI relieves depressive symptoms does not, by itself, prove that a serotonin deficit originally caused the depression, since treatment efficacy and etiological causation are logically distinct questions. A full-credit answer names and accurately describes at least one biological and one psychological treatment, supports effectiveness claims with a specific study, and offers a reasoned evaluative conclusion.

Bài tập luyện tập

According to the diathesis-stress model, which statement most accurately describes how psychological disorders are proposed to develop?

(A) A diathesis alone is always sufficient to produce a disorder, regardless of any environmental stress

(B) A disorder emerges from the combination of a pre-existing vulnerability (diathesis) and an environmental stressor, with neither factor normally sufficient on its own

(C) An environmental stressor alone, without any pre-existing vulnerability, is always sufficient to produce a disorder

(D) The model applies only to disorders that already have an identified genetic cause

Lời giải chi tiết

The diathesis-stress model proposes that a disorder emerges specifically from the **combination** of a diathesis (a pre-existing vulnerability, which may be genetic, biological, or acquired through experience) and an environmental stressor; neither ingredient is normally sufficient to produce the disorder in isolation. **(B)**.

Bài tập luyện tập

Two colleagues work equally demanding jobs with heavy workloads. One has a close, supportive network of friends; the other has had an anxious temperament since childhood and little social support. Only the second colleague develops a clinically significant anxiety disorder. Which explanation best fits the diathesis-stress model?

(A) The workload alone fully explains the outcome, since both colleagues faced an identical stressor

(B) The second colleague's pre-existing vulnerability (anxious temperament, low social support) combined with the shared workplace stressor to produce the disorder, whereas the first colleague's lower vulnerability meant the same stressor was insufficient alone

(C) Only genetic factors can ever explain why one person develops a disorder and another does not

(D) The diathesis-stress model cannot be applied here because both colleagues experienced an identical stressor

Lời giải chi tiết

Because both colleagues faced the same stressor yet only one developed a disorder, the outcome cannot be explained by the stressor alone – it is the **interaction** between the shared stressor and each person's differing vulnerability (temperament, social support) that explains why only the more vulnerable colleague developed the disorder. **(B)**.

Bài tập luyện tập

A psychologist explains that a client's diathesis for developing an anxiety disorder came not from any inherited or biological factor, but from a childhood environment that provided little consistent emotional support, leaving the client with a lasting difficulty regulating stress. This explanation illustrates which key feature of the diathesis-stress model?

(A) The diathesis-stress model only applies to disorders with an identified genetic marker

(B) A diathesis must always be biological in nature, or the model does not apply

(C) A diathesis can be psychological or social in origin, acquired through experience, rather than necessarily genetic or biological

(D) Without a genetic diathesis, a stressor alone can never contribute to disorder onset

Lời giải chi tiết

The diathesis-stress model does not require the diathesis to be genetic or biological; as Brown and Harris's (1978) psychosocial vulnerability factors (lack of a confiding relationship, loss of a mother before age 11) illustrate, a diathesis can equally be an acquired psychological or social vulnerability. **(C)**.

Bài tập luyện tập

SAQ-style: Explain the diathesis-stress model, with reference to one study already covered in this unit.

Lời giải chi tiết

The **diathesis-stress model** proposes that psychological disorders emerge from the combination of a pre-existing vulnerability, or **diathesis** (which may be genetic, biological, or acquired through experience), and an environmentally encountered **stressor**; neither factor is normally sufficient to produce the disorder on its own, but their combination is. **Caspi et al.'s (2003)** Dunedin cohort study directly illustrates this: individuals carrying one or two copies of the short allele of the **5-HTT gene** – a biological diathesis – showed significantly elevated rates

of depression and suicidality only when they also experienced multiple stressful life events between ages 21 and 26. Critically, genotype alone, without significant life stress, did not predict later depression, showing that the diathesis operated by increasing *sensitivity* to adversity rather than causing depression directly and independently. This supports the diathesis-stress model's core claim: the gene (diathesis) and the stressful life events (stressor) combined to produce an outcome that neither produced reliably alone. Full credit accurately defines the model (diathesis and stressor, and their combination) and links it to specific details of a relevant study.

Option --- Health Psychology

Mục tiêu Unit: Mô hình sinh học–tâm lý–xã hội (biopsychosocial model) trong giải thích sức khoẻ và bệnh tật; sinh lý học của phản ứng stress (hội chứng thích nghi chung – General Adaptation Syndrome) và mối liên hệ giữa stress với bệnh tật; các chiến lược ứng phó (coping) với stress và vai trò của hỗ trợ xã hội; niềm tin sức khoẻ (Health Belief Model), lạc quan phi thực tế, và cách đóng khung thông điệp (message framing) trong truyền thông sức khoẻ; sự tuân thủ lời khuyên y tế; nguyên nhân sinh học và xã hội của béo phì; và các yếu tố sinh học–nhận thức–xã hội trong sự lệ thuộc chất kích thích (substance dependence).

6.1 The biopsychosocial model

Health psychology studies how biological, psychological, and social factors jointly shape physical health, illness, and recovery – a field that deliberately draws on, and often directly overlaps with, the biological, cognitive, and sociocultural approaches introduced elsewhere in this course. For much of the twentieth century, however, medicine and much of psychology operated under a narrower assumption about what actually causes illness. This assumption shaped clinical training, diagnosis, and treatment for decades, and its limits only became fully clear once researchers began systematically documenting cases in which a purely physical account failed to predict real-world illness outcomes, speed of recovery, or even whether a patient followed the prescribed treatment at all.

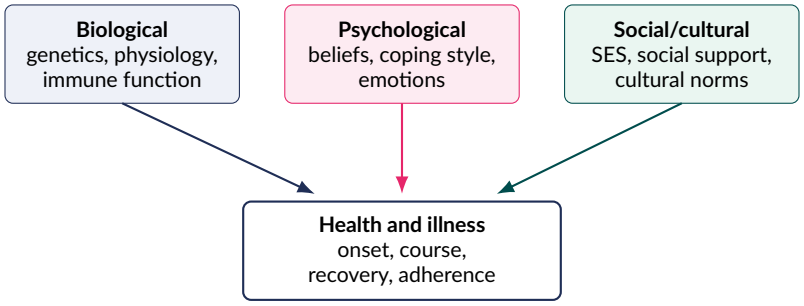
Khái niệm cốt lõi

Engel (1977) proposed the **biopsychosocial model**, arguing that health and illness are best explained not by any single cause but by the dynamic interaction of three levels: **biological** factors (genetic predisposition, physiological processes, immune function), **psychological/cognitive** factors (health-related beliefs, coping style, emotional state, personality), and **social/-cultural** factors (socioeconomic status, the quality of a person's social support, and cultural norms around illness and help-seeking). This stood in deliberate contrast to the older **biomedical model**, which explained illness in purely physical/biological terms – a pathogen, a lesion, a biochemical imbalance – and treated psychological and social factors as, at best, secondary influences on a fundamentally physical disease process. Engel argued that the biomedical model, while highly successful at identifying and treating many acute physical diseases, could not on its own explain why two patients with an identical physical diagnosis often show very different experiences of illness, adherence to treatment, and speed of recovery. Crucially, Engel did not claim biology was unimportant – only that biological processes are always embedded within, and modulated by, a person's psychological state and social circumstances, so that a complete causal account of any illness must specify how all three levels interact, rather than defaulting to whichever single level happens to be easiest to measure or treat.

VN GIẢI THÍCH TIẾNG VIỆT

Mô hình **sinh học–tâm lý–xã hội (biopsychosocial model)** của **Engel (1977)** cho rằng sức khoẻ và bệnh tật là kết quả của sự **tương tác** giữa ba nhóm yếu tố: **sinh học** (di truyền, sinh lý học, chức năng miễn dịch), **tâm lý/nhận thức** (niềm tin, cách ứng phó, cảm xúc), và **xã hội/văn hoá**

(địa vị kinh tế–xã hội, hỗ trợ xã hội, chuẩn mực văn hoá). Mô hình này đối lập với **mô hình y sinh học (biomedical model)** cũ, vốn chỉ giải thích bệnh bằng nguyên nhân thể chất đơn thuần (mầm bệnh, tổn thương mô, mất cân bằng sinh hoá) – một cách giải thích không đủ để lý giải vì sao hai bệnh nhân có cùng chẩn đoán thể chất lại có trải nghiệm bệnh, mức độ tuân thủ điều trị, và tốc độ hồi phục rất khác nhau.



Engel's (1977) biopsychosocial model: health and illness are jointly shaped by biological, psychological, and social/cultural factors, in contrast to the biomedical model's exclusive focus on physical causes.

Ví dụ mẫu · Worked example

A frequently cited illustration of the biopsychosocial model in action is **Cohen, Tyrrell, and Smith's (1991)** common cold study, described in full detail later in this unit: healthy volunteers' *psychological* stress levels, measured before any exposure to a virus, predicted their *biological* susceptibility to a physically verified illness (a clinical cold) after controlled viral exposure. No purely biomedical account – treating a cold as simply "caused by a virus" – can explain why some virus-exposed volunteers developed a cold and others did not, when the amount of virus administered was standardized and identical for everyone. A psychological variable measured well before exposure meaningfully changed a biological, immune-mediated outcome; this is precisely the kind of cross-level interaction Engel's model was designed to capture, and it is the reason health psychology treats "mind" and "body" as inseparable rather than as two separate systems that occasionally influence one another.

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu cảm lạnh của **Cohen, Tyrrell and Smith (1991)** (sẽ trình bày chi tiết ở phần sau) là ví dụ điển hình cho mô hình sinh học–tâm lý–xã hội: mức độ **stress tâm lý** đo được TRƯỚC khi phơi nhiễm virus lại dự đoán được khả năng mắc bệnh **sinh học** (cảm lạnh lâm sàng) SAU khi phơi nhiễm virus có kiểm soát. Một cách giải thích thuần y sinh học ("cảm lạnh chỉ do virus gây ra") không thể lý giải vì sao có người phơi nhiễm cùng liều virus lại mắc bệnh còn người khác thì không – đây chính là kiểu tương tác đa cấp độ mà mô hình của Engel muốn nắm bắt.

(!) Lỗi thường gặp: The biopsychosocial model is not simply "everything matters a little bit." A strong IB answer specifies *which particular* biological, psychological, and social factors are operating in a given case (e.g., naming a specific gene, a specific coping style, a specific social-support variable) and, where possible, cites empirical evidence for how they interact – a vague claim that "health is complex and multifactorial" earns little credit without concrete, named detail.

6.2 Stress: the physiological stress response and stress-illness link

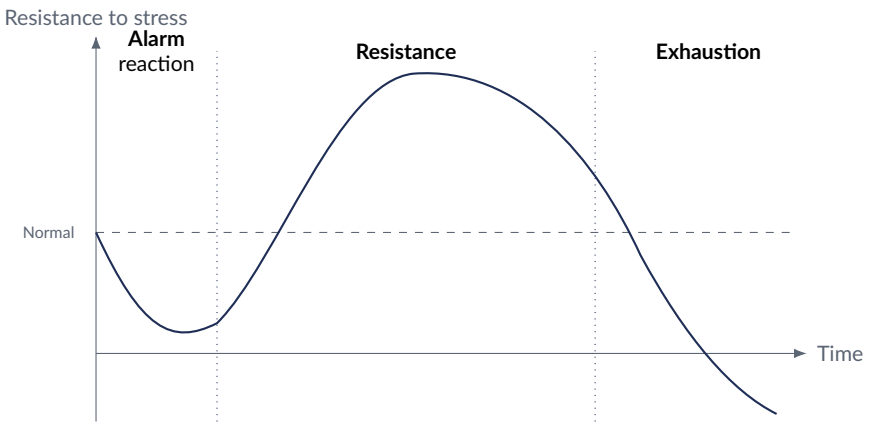
Stress is one of the most heavily researched constructs in health psychology precisely because it sits at the intersection of all three levels of the biopsychosocial model: it is triggered by psychological appraisal, unfolds through biological pathways, and is buffered or worsened by social circumstances. This section examines the physiological stress response itself and the accumulating evidence that chronic stress can causally contribute to physical illness.

Khái niệm cốt lõi

Selye's (1936) General Adaptation Syndrome (GAS) describes a largely universal, three-stage physiological response to prolonged stress, relatively independent of the specific stressor involved. In the **alarm reaction**, the body mounts an immediate fight-or-flight response via the sympathetic nervous system and adrenal medulla, releasing adrenaline and rapidly increasing heart rate, blood pressure, and blood glucose to prepare the body for action. If the stressor persists, the body enters **resistance**: the acute alarm symptoms subside and the organism outwardly appears to be coping and functioning normally, but this appearance is misleading, because cortisol (a glucocorticoid stress hormone released via the hypothalamic–pituitary–adrenal, or HPA, axis) remains chronically elevated, placing ongoing physiological strain on multiple body systems even while the person seems fine on the surface. If the stressor continues long enough, the body's adaptive resources become depleted and it enters **exhaustion**: immune function and other regulatory systems decline substantially, leaving the organism markedly more vulnerable to infections, cardiovascular problems, and other stress-related illness. Selye originally identified this pattern through experiments exposing laboratory animals to a range of different physical stressors – cold, injury, toxins – and was struck that the resulting pattern of physiological change (swollen adrenal glands, shrunken lymphatic tissue, gastric ulceration) looked remarkably similar regardless of which specific stressor had been applied. This led him to propose that the body mounts a largely **general, non-specific** adaptation to prolonged stress, rather than a bespoke reaction tailored to each particular threat – the central claim behind the name "General Adaptation Syndrome."

VN **GIẢI THÍCH TIẾNG VIỆT**

Hội chứng thích nghi chung (General Adaptation Syndrome – GAS) của **Selye (1936)** mô tả phản ứng sinh lý ba giai đoạn của cơ thể trước stress kéo dài: (1) **phản ứng báo động (alarm reaction)** – kích hoạt "chiến hay chạy" tức thời, tiết adrenaline; (2) **giai đoạn kháng cự (resistance)** – cơ thể trông có vẻ hoạt động bình thường trở lại nhưng cortisol vẫn ở mức cao, âm thầm gây tổn hại; (3) **giai đoạn kiệt sức (exhaustion)** – nguồn lực thích nghi của cơ thể cạn kiệt, chức năng miễn dịch suy giảm rõ rệt, làm tăng nguy cơ mắc bệnh.



Selye's (1936) General Adaptation Syndrome: resistance briefly dips below normal during the alarm reaction (fight-or-flight activation), rises above normal during resistance (cortisol stays elevated even though outward functioning looks normal), then collapses during exhaustion as the body's adaptive resources are depleted.

Holmes and Rahe's (1967) Social Readjustment Rating Scale (SRRS) is a checklist that assigns a numerical **Life Change Unit (LCU)** value to major life events requiring psychological readjustment, *regardless of whether the event is subjectively positive or negative* – reflecting their central claim that it is the amount of *change* an event demands, not simply whether it feels good or bad, that generates stress. Events are ranked and scored across the full scale – for example, death of a spouse is rated highest, at 100 LCUs, followed by divorce (73 LCUs) and marriage (50 LCUs), among many others. In the original validation research, individuals with higher cumulative LCU scores over a one-year period showed significantly higher rates of subsequent illness than those with lower LCU totals, supporting the idea that an accumulation of major life changes – even an ostensibly happy one such as marriage – places a measurable physiological burden on the body. Because LCU scores accumulate across a rolling twelve-month window, the SRRS has often been used as a simple screening tool to flag individuals who may benefit from additional support or monitoring following a cluster of major life changes, even when each individual event might seem unremarkable in isolation.

VN **GIẢI THÍCH TIẾNG VIỆT**

Thang **Social Readjustment Rating Scale (SRRS)** của **Holmes and Rahe (1967)** gán mỗi sự kiện lớn trong đời một số điểm **Life Change Units (LCU)** dựa trên mức độ **phải điều chỉnh lại cuộc sống**, KHÔNG phân biệt sự kiện đó tích cực hay tiêu cực – ví dụ vợ/chồng qua đời (100 điểm, cao nhất), ly hôn (73 điểm), kết hôn (50 điểm). Trong nghiên cứu gốc, những người có tổng điểm LCU trong một năm càng cao thì tỉ lệ mắc bệnh sau đó càng cao – kể cả khi các sự kiện đó (như kết hôn) vốn được xem là tích cực.

Ví dụ mẫu · Worked example

Cohen, Tyrrell, and Smith (1991) gave healthy volunteers a composite **psychological stress index**, combining self-reported recent stressful life events, perceived stress, and negative affect. Researchers then experimentally exposed all volunteers, under quarantine conditions, to a common cold virus delivered via nasal drops, and monitored them for the development of a clinical cold, verified using objective signs of infection rather than self-report alone. Participants with **higher stress index scores** were significantly more likely to develop a clinical cold, showing a clear **dose–response relationship** (higher stress corresponding to a higher illness rate), and this association held even after statistically controlling for age, weight, season, and prior immunity to the specific cold virus strain used. Because the stress index was measured *before* the controlled viral exposure, and the "dose" of virus was standardized and controlled by the researchers rather than naturally varying across participants, this design provides unusually strong experimental evidence that psychological stress can causally **suppress immune function** and increase vulnerability to infectious illness – a landmark study in the field of psychoneuroimmunology.

VN **GIẢI THÍCH TIẾNG VIỆT**

Cohen, Tyrrell and Smith (1991) đo **chỉ số stress tâm lý** của các tình nguyện viên khoẻ mạnh, sau đó cho họ phơi nhiễm virus cảm lạnh (nhỏ mũi) trong điều kiện cách ly được kiểm soát chặt chẽ. Người có điểm stress **càng cao** thì khả năng **bị cảm lạnh lâm sàng** (xác nhận bằng dấu hiệu nhiễm trùng khách quan, không chỉ tự báo cáo) càng cao, theo quan hệ **liều lượng–đáp ứng (dose–response)**, ngay cả sau khi đã kiểm soát tuổi, cân nặng, mùa, và miễn dịch sẵn

có. Vì stress được đo TRƯỚC và liều virus được kiểm soát chuẩn hoá, đây là bằng chứng thực nghiệm rất mạnh cho thấy stress tâm lý có thể **gây ra (nhân quả)** sự suy giảm miễn dịch, chứ không chỉ đơn thuần tương quan.

(!) Lỗi thường gặp: Selye's GAS describes the body's physiological stress response as essentially uniform regardless of the stressor's psychological meaning – but this cannot be the whole story, since two people facing an identical objective stressor often show very different levels of physiological strain. This is exactly the gap that **Lazarus and Folkman's (1984)** cognitive **appraisal**-based model of stress, discussed next, was designed to fill: how stressful an event *is* depends heavily on how it is subjectively interpreted, not only on its objective physical demands.

6.3 Coping with stress

Khái niệm cốt lõi

Lazarus and Folkman's (1984) transactional model of stress proposes that stress does not arise directly from an event itself, but from an individual's subjective **appraisal** of that event relative to their perceived ability to cope with it. **Primary appraisal** asks: *is this situation a threat, a challenge, or irrelevant to my wellbeing?* **Secondary appraisal** asks: *do I have the resources – practical, social, emotional – to cope with it?* Stress is experienced specifically when primary appraisal identifies a threat *and* secondary appraisal concludes that available coping resources are insufficient to meet that threat, meaning that an identical objective event (e.g., an approaching work deadline) can be experienced as highly stressful by one person and as a manageable challenge by another, depending entirely on how each appraises it. Having appraised a situation as stressful, individuals draw on two broad families of coping strategy. **Problem-focused coping** directly targets the source of the stress itself – for example, making a concrete plan, seeking practical information or help, or removing the stressor – and tends to be more effective when the stressor is genuinely **controllable**, i.e., when some direct action could plausibly change the situation. **Emotion-focused coping** instead targets the person's *emotional response* to the stressor, without necessarily changing the stressor itself – for example, cognitive reappraisal (reinterpreting the situation more positively), seeking emotional support, or avoidance/denial. Emotion-focused coping can be more adaptive than problem-focused coping specifically when a stressor is genuinely **uncontrollable** (e.g., a terminal diagnosis, a natural disaster already underway), but strategies such as avoidance or denial can become maladaptive if overused, since they may prevent a person from taking action that is, in fact, available and needed. Because appraisal is an ongoing process rather than a single fixed judgment, a person's stress level and choice of coping strategy can shift substantially over the course of a single stressful episode – for example, initial problem-focused efforts to fix a stressor may gradually give way to emotion-focused coping if repeated attempts reveal that the stressor cannot, in fact, be controlled, a pattern sometimes described as **coping flexibility**.

VN **GIẢI THÍCH TIẾNG VIỆT**

Mô hình **giao dịch (transactional model)** của **Lazarus and Folkman (1984)** cho rằng stress không đến trực tiếp từ một sự kiện, mà từ cách một người **thẩm định (appraisal)** sự kiện đó: **thẩm định sơ cấp (primary appraisal)** – "đây có phải là mối đe doạ không?"; **thẩm định thứ cấp (secondary appraisal)** – "mình có đủ nguồn lực để ứng phó không?". **Ứng phó tập trung vào vấn đề (problem-focused coping)** nhắm trực tiếp vào nguyên nhân gây stress, hiệu quả hơn khi tình huống **có thể kiểm soát được**; **ứng phó tập trung vào cảm xúc (emotion-focused coping)**

nhắm vào phản ứng cảm xúc chứ không thay đổi tình huống, phù hợp hơn khi tình huống **không thể kiểm soát được**, nhưng nếu lạm dụng (đặc biệt là né tránh/phủ nhận) có thể trở nên phản tác dụng.

	Problem-focused coping	Emotion-focused coping
Target	The source/cause of the stressor itself	The person's emotional reaction to the stressor
Best suited to	Controllable stressors (something can be directly changed)	Uncontrollable stressors (little or nothing can be directly changed)
Example strategies	Making a plan; seeking practical help/information; removing the stressor	Reappraisal; seeking emotional support; avoidance/denial
Main risk	Wasted effort if the stressor genuinely cannot be changed	Can become maladaptive if overused (e.g., avoidance preventing needed action)

Problem-focused and emotion-focused coping compared, following Lazarus and Folkman (1984). Most real coping episodes combine both strategies, shifting the balance as a situation's controllability becomes clearer.

Ví dụ mẫu · Worked example

Ozbay et al. (2007), in an influential review of biological and psychological research on stress resilience, synthesized decades of evidence showing that individuals with stronger, higher-quality **social support** networks consistently show greater resilience to acute and chronic stress, and better long-term physical and mental health outcomes, than more socially isolated individuals facing comparable stressors. The review highlighted several converging mechanisms: socially supported individuals often have more problem-focused coping resources directly available to them (friends or family who can practically help resolve a stressor), report lower subjective distress when facing the same objective stressor – consistent with a less threatening primary appraisal – and show blunted physiological stress reactivity (e.g., smaller cortisol and cardiovascular stress responses) when support is present during a stressful task, compared to facing the same task alone. Ozbay et al. concluded that social support functions as a genuine **stress buffer** operating across the psychological, behavioural, and biological levels simultaneously – itself a clear illustration of the biopsychosocial model applied directly to coping.

VN **GIẢI THÍCH TIẾNG VIỆT**

Ozbay và cộng sự (2007) tổng hợp nhiều thập kỷ nghiên cứu và kết luận rằng người có **mạng lưới hỗ trợ xã hội** mạnh và chất lượng cao có khả năng phục hồi (resilience) trước stress tốt hơn và kết quả sức khoẻ dài hạn tốt hơn. Cơ chế hoạt động qua nhiều con đường: hỗ trợ thực tế (giúp giải quyết vấn đề trực tiếp), hỗ trợ cảm xúc (giảm mức độ đe doạ trong thẩm định sơ cấp), và thậm chí làm giảm phản ứng sinh lý với stress (cortisol, nhịp tim) – cho thấy hỗ trợ xã hội là một "tấm đệm chống stress" hoạt động đồng thời ở cả ba cấp độ sinh học–tâm lý–xã hội.

(!) Lỗi thường gặp: Do not present emotion-focused coping as simply "the worse strategy," or problem-focused coping as simply "the better strategy." Whether a coping strategy is adaptive depends critically on the **controllability** of the stressor: problem-focused coping is generally more effective for controllable stressors, but persistently trying to "solve" a stressor that genuinely cannot be changed (e.g., a terminal diagnosis) can itself become a source of frustration and distress, whereas emotion-focused strategies such as reappraisal or seeking emotional

support are typically more adaptive in that situation.

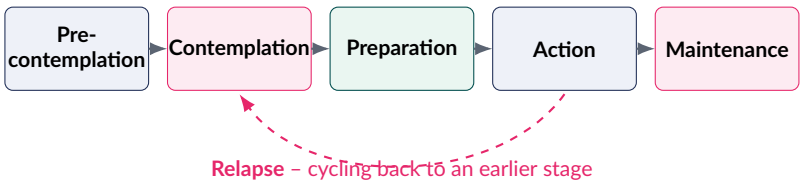
6.4 The transtheoretical model: stages of behaviour change

Khái niệm cốt lõi

Prochaska and DiClemente's (1983) Transtheoretical Model (TTM), often called the **"stages of change" model**, proposes that intentional health behaviour change – quitting smoking, starting exercise, improving diet – does not typically happen all at once, but instead unfolds through a series of distinct stages, each involving a different degree of psychological readiness before a person is likely to move on to the next. In **precontemplation**, a person is not yet considering change, often because they do not perceive the behaviour as a problem at all. In **contemplation**, the person becomes aware that a problem exists and begins seriously considering change, typically within about the next six months, but has not yet made a firm commitment to act. In **preparation**, the person intends to act soon – often within the next month – and begins taking small preparatory steps (for example, buying nicotine patches or researching a local gym). In **action**, the person is actively and overtly modifying their behaviour, a stage that typically covers roughly the first six months of the new behaviour. In **maintenance**, the new behaviour has been sustained for six months or longer, and effort shifts toward consolidating the change and preventing relapse. Crucially, the model explicitly recognises that **relapse** – a return to the old behaviour – is a common and normal part of the change process rather than a rare failure, and can occur from any stage; following a relapse, a person typically cycles back to an earlier stage (often contemplation or preparation) rather than restarting from precontemplation or abandoning change altogether, which is why the TTM is usually depicted as a cycle rather than a single straight line. A key practical implication of the TTM is that, because different stages involve different psychological needs and barriers, health interventions matched to a person's current stage of readiness – for example, simply raising awareness for someone in precontemplation, versus providing concrete practical support and relapse-prevention planning for someone already in the action or maintenance stages – tend to be significantly more effective than a single, one-size-fits-all intervention applied regardless of a person's actual readiness to change.

VN GIẢI THÍCH TIẾNG VIỆT

Mô hình **xuyên lý thuyết (Transtheoretical Model – TTM)** của **Prochaska and DiClemente (1983)**, còn gọi là mô hình **"các giai đoạn thay đổi" (stages of change)**, cho rằng thay đổi hành vi sức khoẻ có chủ đích (bỏ thuốc lá, tập thể dục, cải thiện chế độ ăn) không diễn ra ngay lập tức mà trải qua nhiều giai đoạn: (1) **tiền cân nhắc (precontemplation)** – chưa nghĩ đến việc thay đổi; (2) **cân nhắc (contemplation)** – nhận ra vấn đề và bắt đầu cân nhắc thay đổi, thường trong khoảng sáu tháng tới; (3) **chuẩn bị (preparation)** – dự định hành động sớm (thường trong vòng một tháng) và bắt đầu các bước chuẩn bị nhỏ; (4) **hành động (action)** – đang chủ động thay đổi hành vi, thường trong sáu tháng đầu; (5) **duy trì (maintenance)** – duy trì hành vi mới từ sáu tháng trở lên và tập trung phòng ngừa tái phát. Mô hình thừa nhận rõ ràng rằng **tái phát (relapse)** là điều bình thường, có thể xảy ra ở bất kỳ giai đoạn nào, và sau đó người ta thường quay lại một giai đoạn trước đó chứ không nhất thiết bắt đầu lại từ đầu – vì vậy TTM thường được biểu diễn dưới dạng một **vòng tròn** chứ không phải một đường thẳng. Hàm ý thực tiễn quan trọng: can thiệp sức khoẻ phù hợp với giai đoạn sẵn sàng của từng người (ví dụ nâng cao nhận thức cho người ở giai đoạn tiền cân nhắc, so với hỗ trợ thực tế và lập kế hoạch phòng ngừa tái phát cho người ở giai đoạn hành động/duy trì) thường hiệu quả hơn một can thiệp áp dụng đồng loạt cho mọi người bất kể mức độ sẵn sàng của họ.



The transtheoretical model (Prochaska and DiClemente, 1983): behaviour change typically progresses through five stages, but relapse can occur from any stage, after which a person commonly cycles back to an earlier stage rather than the process being strictly linear.

Ví dụ mẫu · Worked example

Consider a long-term smoker who has never seriously thought about quitting – firmly in **pre-contemplation**. After a health scare (for example, a doctor warning her about early signs of reduced lung function), she begins seriously thinking "maybe I should quit," moving into **contemplation**: she now recognises smoking as a problem for her but has not yet committed to a quit date. Over the following weeks she decides to quit within the month, buys nicotine patches, and tells close friends about her plan – entering **preparation**. She then stops smoking entirely and starts actively managing cravings using the patches and new daily routines – **action**. Several months later, having remained smoke-free for over six months, she is in **maintenance**, focused on avoiding the situations that previously triggered her smoking. During a highly stressful period at work, however, she smokes a single cigarette and then several more over the following few days – a **relapse**. Rather than this being a rare failure, the TTM predicts she is likely to cycle back to **contemplation** (thinking again about quitting) rather than reverting all the way to precontemplation, and an effective intervention at this point would focus on relapse-prevention planning and renewed practical support, illustrating why a stage-matched intervention is more effective than a single generic anti-smoking message aimed at everyone regardless of their actual stage of readiness.

VN **GIẢI THÍCH TIẾNG VIỆT**

Hãy xét một người hút thuốc lâu năm chưa từng nghiêm túc nghĩ đến việc bỏ thuốc – đang ở giai đoạn **tiền cân nhắc**. Sau một sự kiện cảnh báo sức khoẻ (bác sĩ cảnh báo dấu hiệu suy giảm chức năng phổi), cô bắt đầu nghiêm túc nghĩ "có lẽ mình nên bỏ thuốc" – chuyển sang **cân nhắc**: nhận ra vấn đề nhưng chưa cam kết ngày bỏ thuốc cụ thể. Vài tuần sau, cô quyết định sẽ bỏ trong tháng tới, mua miếng dán nicotine, và nói với bạn thân về kế hoạch – bước vào giai đoạn **chuẩn bị**. Sau đó cô ngừng hút hoàn toàn và chủ động kiểm soát cơn thèm thuốc bằng miếng dán và thói quen mới – giai đoạn **hành động**. Vài tháng sau, đã không hút thuốc hơn sáu tháng, cô bước vào giai đoạn **duy trì**, tập trung tránh các tình huống từng kích hoạt việc hút thuốc. Trong một giai đoạn căng thẳng cao độ ở công việc, cô hút lại một điếu rồi vài điếu trong vài ngày – một lần **tái phát**. Thay vì xem đây là thất bại, TTM dự đoán cô nhiều khả năng sẽ quay lại giai đoạn **cân nhắc** chứ không lùi hẳn về tiền cân nhắc, và một can thiệp phù hợp lúc này nên tập trung vào lập kế hoạch phòng ngừa tái phát và hỗ trợ thực tế mới – minh hoạ rõ vì sao can thiệp phù hợp theo giai đoạn hiệu quả hơn một thông điệp chung áp dụng cho tất cả mọi người bất kể mức độ sẵn sàng của họ.

(!) Lỗi thường gặp: Do not describe the transtheoretical model as a strictly linear, one-directional staircase that a person climbs once and never revisits. Prochaska and DiClemente's (1983) model explicitly treats **relapse** and cycling back to an earlier stage as a normal, expected part of the change process, not as a rare exception or evidence that the model has failed – a strong IB answer should explicitly mention relapse and the possibility of moving backward

through stages, rather than presenting the five stages as a simple one-way sequence from precontemplation straight through to maintenance.

6.5 Health beliefs and health promotion

Khái niệm cốt lõi

The **Health Belief Model (Rosenstock, 1966; Becker, 1974)** proposes that the likelihood of a person engaging in a health-protective behaviour – attending a cancer screening, wearing sunscreen, getting vaccinated – depends on five interacting beliefs: **perceived susceptibility** (how likely do I think I am to be affected by this health threat?), **perceived severity** (how serious do I think the consequences would be?), **perceived benefits** (how effective do I think the recommended action would be at reducing the threat?), **perceived barriers** (what practical, financial, social, or emotional costs stand in the way of taking that action?), and **cues to action** (an external or internal trigger – a symptom, a reminder, media coverage – that prompts the behaviour). A later refinement added **self-efficacy**: a person's belief in their own ability to successfully carry out the behaviour, since even a person who accepts all of the above may still fail to act if they doubt they can actually follow through. Self-efficacy was added partly in response to findings that campaigns which successfully raised perceived susceptibility and perceived benefits still sometimes failed to change behaviour, because the target audience did not believe they were personally capable of sustaining the recommended action – for example, believing smoking is dangerous and quitting beneficial, while still doubting one's own ability to successfully quit and stay quit.

VN **GIẢI THÍCH TIẾNG VIỆT**

Mô hình **Niềm tin Sức khoẻ (Health Belief Model)** của **Rosenstock (1966); Becker (1974)** dự đoán khả năng thực hiện hành vi bảo vệ sức khoẻ dựa trên năm niềm tin: **cảm nhận về mức độ dễ mắc bệnh**, **cảm nhận về mức độ nghiêm trọng**, **cảm nhận về lợi ích** của hành động, **cảm nhận về rào cản**, và **tác nhân kích hoạt hành động**; về sau bổ sung thêm **niềm tin vào năng lực bản thân (self-efficacy)** – tin rằng mình thực sự có thể làm được hành vi đó.

Ví dụ mẫu · Worked example

Weinstein (1980) asked college students to compare their own personal chances of experiencing a range of negative future life events – including, for example, having a heart attack or developing a drinking problem – to the chances facing their peers. Across most of the negative events studied, participants systematically rated themselves as **less likely than average** to experience the event, a robust bias Weinstein termed **unrealistic optimism** ("optimism bias"). This bias was found to be strongest specifically for events that participants perceived as **controllable** (believing their own behaviour would protect them) and for events associated with a stereotyped "**typical victim**" that the participant did not personally identify with – for example, picturing a heavy, long-term smoker as very different from oneself, even while smoking oneself. Because unrealistic optimism directly lowers a person's **perceived susceptibility**, a core component of the Health Belief Model, it offers a clear cognitive explanation for why people often fail to engage in preventive health behaviours even when they intellectually understand the relevant risk statistics.

VN **GIẢI THÍCH TIẾNG VIỆT**

Weinstein (1980) yêu cầu sinh viên so sánh khả năng bản thân gặp các sự kiện tiêu cực trong

tương lai (như đau tim, nghiện rượu) với khả năng của bạn bè đồng trang lứa. Đa số người tham gia đánh giá bản thân **ít có khả năng gặp rủi ro hơn mức trung bình** – hiện tượng gọi là **lạc quan phi thực tế (unrealistic optimism)**, mạnh nhất với các sự kiện được xem là **có thể kiểm soát được** và gắn với hình ảnh một "**nạn nhân điển hình**" mà người tham gia không thấy mình giống. Vì lạc quan phi thực tế làm giảm **cảm nhận về mức độ dễ mắc bệnh** – một thành phần cốt lõi của Health Belief Model – nó giải thích vì sao nhiều người không thực hiện hành vi phòng ngừa dù hiểu rõ số liệu rủi ro.

Rothman and Salovey's (1997) influential review of **message framing** in health communication concluded that the effectiveness of a persuasive message's framing depends on the type of health behaviour it targets. **Gain-framed messages**, which emphasize the benefits of taking a recommended action (e.g., "using sunscreen protects your skin and keeps it looking healthy"), tend to be more effective at promoting **prevention** behaviours – behaviours that carry a relatively certain, low-risk outcome, since using sunscreen is unlikely to reveal any bad news. **Loss-framed messages**, which emphasize the costs of *failing* to act (e.g., "not checking your skin for changes risks your health"), tend to be more effective at promoting **detection/screening** behaviours – behaviours that involve genuine uncertainty and the risk of an undesirable finding, since a screening might reveal a serious diagnosis. Rothman and Salovey's proposed explanation is that gain-framed messages suit low-risk, certain outcomes because they reinforce an already-positive expectation, while loss-framed messages better match the risk and uncertainty inherent in detection behaviours, where the "threat" of a bad outcome is already psychologically salient.

VN **GIẢI THÍCH TIẾNG VIỆT**

Rothman and Salovey (1997) kết luận rằng hiệu quả của cách **đóng khung thông điệp (message framing)** phụ thuộc vào loại hành vi sức khoẻ được nhắm đến. **Đóng khung lợi ích (gain-framed)** – nhấn mạnh lợi ích khi hành động – hiệu quả hơn cho hành vi **phòng ngừa (prevention)** (kết quả chắc chắn, rủi ro thấp, ví dụ bôi kem chống nắng). **Đóng khung mất mát (loss-framed)** – nhấn mạnh cái giá phải trả nếu KHÔNG hành động – hiệu quả hơn cho hành vi **phát hiện/tầm soát (detection/screening)** (kết quả không chắc chắn, có nguy cơ phát hiện tin xấu, ví dụ chụp nhũ ảnh).

	Gain-framed message	Loss-framed message
Emphasizes	Benefits of taking the recommended action	Costs of failing to take the recommended action
Best suited to	**Prevention** behaviours (certain, low-risk outcome): sunscreen use, healthy eating, exercise	**Detection/screening** behaviours (uncertain outcome, risk of a bad finding): mammograms, HIV testing, skin checks
Example wording	"Sunscreen protects your skin."	"Not checking your skin risks your health."

Rothman and Salovey's (1997) framing effect: which frame is more persuasive depends on whether the target behaviour carries a certain (prevention) or uncertain (detection) outcome – there is no single "more persuasive" frame across all health messages.

Ví dụ mẫu · Worked example

Janis and Feshbach's (1953) classic study of **fear appeals** presented high-school students with one of three versions of a lecture on dental hygiene, varying only in the intensity of fear-

arousing content (e.g., graphic descriptions and images of diseased gums and decayed teeth) while keeping the informational content about proper dental care constant. Counter to the common assumption that "scarier is always more persuasive," the **low-fear** version of the message produced significantly *better* subsequent dental hygiene behaviour than the **high-fear** version. Janis and Feshbach interpreted this pattern as evidence that very high fear arousal can trigger **defensive avoidance**: rather than engaging constructively with a message that feels overwhelmingly threatening, some recipients instead psychologically tune out, deny personal relevance, or avoid thinking about the frightening material altogether, undermining the very behaviour change the message intended to produce. This finding became an early and influential challenge to the simple assumption that stronger fear appeals are automatically more effective health communication tools. Later research has qualified this picture: fear appeals can be effective when combined with a clear, credible sense of **self-efficacy** – i.e., the message also convincingly shows the audience a specific, achievable action they can take – but Janis and Feshbach's original finding remains the classic reference point for caution about strong fear-based messaging used alone.

VN **GIẢI THÍCH TIẾNG VIỆT**

Nghiên cứu kinh điển về **thông điệp gây sợ hãi (fear appeals)** của **Janis and Feshbach (1953)** cho học sinh trung học nghe một trong ba phiên bản bài giảng về vệ sinh răng miệng, khác nhau về mức độ gây sợ hãi. Trái với giả định "càng đáng sợ càng thuyết phục," phiên bản **sợ hãi thấp (low-fear)** lại tạo ra hành vi vệ sinh răng miệng **tốt hơn** phiên bản **sợ hãi cao (high-fear)**. Janis and Feshbach lý giải: sợ hãi quá mức có thể kích hoạt **né tránh phòng vệ (defensive avoidance)** – người nhận thông điệp "tắt" cảm xúc, phủ nhận sự liên quan đến bản thân, hoặc né tránh suy nghĩ về nội dung đáng sợ, làm mất tác dụng của thông điệp. Nghiên cứu sau này bổ sung: thông điệp gây sợ hãi vẫn có thể hiệu quả nếu đi kèm cảm giác **năng lực bản thân (self-efficacy)** rõ ràng – tức người nhận tin rằng họ có thể hành động cụ thể để giải quyết mối đe doạ đó.

(!) Lỗi thường gặp: Do not treat gain-framed or loss-framed messaging as universally "the more persuasive frame." Rothman and Salovey's (1997) central point is that the effectiveness of framing depends on the *type of behaviour being promoted* (prevention vs detection/screening). Similarly, do not conclude from Janis and Feshbach (1953) that fear appeals "never work" – the safest exam-ready conclusion is that very high fear, used without a clear sense of self-efficacy, risks triggering defensive avoidance, not that fear-based messaging is inherently and always ineffective.

6.6 Adherence to medical advice

Adherence (or "compliance") refers to the extent to which a patient's behaviour – taking medication as prescribed, following a diet or exercise recommendation, attending follow-up appointments – matches the advice given by a health practitioner. Poor adherence is a major, often underestimated obstacle to the effectiveness of even well-established medical treatments: a treatment that works perfectly under the controlled conditions of a clinical trial can have little real-world benefit if patients do not actually follow it as prescribed. Adherence is also not a fixed, all-or-nothing trait: the same patient may adhere closely to one part of a treatment plan (e.g., taking a single daily tablet) while struggling with another, more demanding part (e.g., a complex multi-step wound-care routine or a major dietary change), which is why practitioners are increasingly encouraged to assess and support adherence separately for each component of a regimen, rather than treating "adherence" as one single, global behaviour.

VN **GIẢI THÍCH TIẾNG VIỆT**

Tuân thủ điều trị (adherence) là mức độ hành vi của bệnh nhân (uống thuốc đúng liều, tuân theo chế độ ăn/tập luyện, tái khám đúng hẹn) khớp với lời khuyên của bác sĩ. Tuân thủ kém là rào cản lớn thường bị đánh giá thấp đối với hiệu quả điều trị thực tế: một phác đồ hoàn hảo trong thử nghiệm lâm sàng có thể gần như vô nghĩa ngoài đời nếu bệnh nhân không thực sự làm theo.

Ví dụ mẫu · Worked example

DiMatteo (2004) conducted a large-scale meta-analysis pooling data across roughly **50 years** of published research on patient adherence to medical recommendations. Across this very large combined evidence base, the average rate of **non-adherence** was close to **one in four patients (about 24.8%)** – meaning that, on average, close to a quarter of patients do not follow medical advice as prescribed. Critically, DiMatteo's analysis also found that the quality of **patient–practitioner communication** was significantly and consistently associated with higher rates of adherence across the pooled studies: patients who felt they had been listened to, whose practitioner clearly explained the reasoning behind a recommendation, and who experienced a more collaborative (rather than purely directive) relationship with their practitioner were significantly more likely to follow through with treatment. Because this pattern replicated consistently across an enormous combined sample spanning five decades of research, it provides unusually robust evidence that communication quality – not simply the objective correctness of the medical advice given – is a genuine, modifiable determinant of adherence.

VN **GIẢI THÍCH TIẾNG VIỆT**

DiMatteo (2004) thực hiện một **meta-phân tích** lớn, tổng hợp gần **50 năm** nghiên cứu về tuân thủ điều trị, phát hiện tỉ lệ **không tuân thủ** trung bình gần **một phần tư bệnh nhân (khoảng 24,8%)**. Yếu tố dự đoán mạnh và nhất quán nhất cho việc tuân thủ tốt hơn là **chất lượng giao tiếp giữa bác sĩ và bệnh nhân** – không chỉ là "phác đồ điều trị đúng" mà còn là cách bác sĩ giải thích, lắng nghe, và xây dựng mối quan hệ hợp tác với bệnh nhân.

Ley's (1988) cognitive model of adherence proposes that a substantial share of poor adherence is explained not by patients' unwillingness to follow advice, but simply by patients **misunderstanding or forgetting** what they were told. Consultations often involve complex medical terminology unfamiliar to patients, too much information delivered in a single short appointment to be reliably retained, and a well-documented **primacy effect**, in which information given *early* in a consultation is remembered significantly better than information given later – for instance, after the patient has already begun processing an anxiety-inducing diagnosis. Ley's model has a clear practical implication: adherence can often be meaningfully improved through simple communication changes – simplifying medical language, repeating and summarizing the most critical instructions, delivering the most important points early in the consultation, and explicitly checking the patient's understanding before they leave – rather than requiring any change to the medical treatment itself.

VN **GIẢI THÍCH TIẾNG VIỆT**

Mô hình nhận thức về tuân thủ điều trị của **Ley (1988)** cho rằng phần lớn tình trạng tuân thủ kém đến từ việc bệnh nhân đơn giản là **hiểu sai hoặc quên** những gì bác sĩ dặn – do thuật ngữ y khoa phức tạp, quá nhiều thông tin trong một buổi khám, và **hiệu ứng vị trí đầu (primacy effect)**: thông tin được nói SỚM trong buổi khám được nhớ tốt hơn thông tin nói SAU. Hàm ý thực tiễn: đơn giản hoá ngôn ngữ, lặp lại và tóm tắt các điểm quan trọng nhất, nói những điều quan trọng nhất TRƯỚC, và kiểm tra lại xem bệnh nhân đã hiểu đúng chưa – đều có thể cải thiện tuân thủ mà không cần thay đổi phác đồ điều trị.

(!) Lỗi thường gặp: Avoid framing non-adherence purely as a patient "failure" to comply. Ley's (1988) model and DiMatteo's (2004) communication finding both point toward adherence being substantially shaped by *practitioner-side* factors – how clearly and collaboratively information is delivered – as much as by patient motivation; a strong IB-level answer discusses both sides rather than placing responsibility solely on the patient.

6.7 Obesity: etiology

Stunkard et al. (1990), analysing data from the **Swedish Twin Registry**, compared body-mass index (BMI) correlations between monozygotic (MZ) twins reared **apart**, MZ twins reared **together**, and dizygotic (DZ) twins. BMI correlations between MZ twins reared apart were nearly as high as those between MZ twins reared together, and substantially higher than correlations found for DZ twins – a pattern that, using the standard logic of the twin-study design, allowed the researchers to estimate a strong **genetic** contribution to variation in BMI, on the order of **approximately 70%**, largely independent of whether twins shared the same childhood rearing environment. This is strong biological evidence that body weight is not simply a matter of individual willpower or lifestyle choice, but is substantially shaped by inherited biological factors – for example, genes influencing metabolic rate, appetite regulation, and fat storage.

VN **GIẢI THÍCH TIẾNG VIỆT**

Stunkard và cộng sự (1990) phân tích dữ liệu **Sổ đăng ký song sinh Thuỵ Điển**, so sánh tương quan chỉ số BMI giữa các cặp song sinh cùng trứng (MZ) nuôi **riêng**, MZ nuôi **cùng nhau**, và song sinh khác trứng (DZ). Tương quan BMI của MZ nuôi riêng gần bằng MZ nuôi cùng, và cao hơn hẳn DZ – ước tính đóng góp **di truyền** vào BMI vào khoảng **70%**, gần như không phụ thuộc môi trường nuôi dưỡng chung thời thơ ấu. Đây là bằng chứng sinh học mạnh mẽ rằng cân nặng không đơn thuần là vấn đề "ý chí" mà chịu ảnh hưởng lớn từ yếu tố di truyền (chuyển

hoá, điều hoà cảm giác thèm ăn, tích trữ mỡ).

Ví dụ mẫu · Worked example

Christakis and Fowler (2007) analysed three decades of social network data from the **Framingham Heart Study**, a long-running study that had tracked detailed social ties – friends, siblings, neighbours, spouses – among more than **12,000** participants. They found that a person's own risk of becoming obese increased by **57%** if a close friend became obese during the same period, with considerably weaker effects found for siblings and neighbours. Christakis and Fowler interpreted this as evidence that obesity-related behaviours, norms, and even perceptions of what counts as a normal body weight can spread through social networks – a genuinely **sociocultural** mechanism operating alongside the biological contribution identified by twin studies such as Stunkard et al. (1990). However, because this is fundamentally a **correlational**, observational network study – no friendship or weight change was experimentally manipulated – the researchers could not fully rule out **homophily**, the tendency of people to form friendships with others who are already similar to them (including, potentially, similar underlying lifestyle habits or genetic predispositions toward weight gain), as an alternative explanation for the pattern, distinct from genuine social influence spreading between friends.

VN **GIẢI THÍCH TIẾNG VIỆT**

Christakis and Fowler (2007) phân tích dữ liệu mạng lưới xã hội trong ba thập kỷ của **Nghiên cứu Tim mạch Framingham** (hơn 12.000 người), phát hiện nguy cơ béo phì của một người tăng **57%** nếu một người bạn thân trở nên béo phì trong cùng giai đoạn – hiệu ứng yếu hơn với anh chị em ruột và hàng xóm. Điều này gợi ý hành vi/chuẩn mực liên quan đến béo phì có thể "lan truyền" qua mạng lưới xã hội. Tuy nhiên vì đây là nghiên cứu **tương quan**, không thể loại trừ khả năng **homophily** (xu hướng kết bạn với người vốn đã giống mình về lối sống/di truyền) như một cách giải thích khác, thay vì ảnh hưởng xã hội thực sự.

(!) Lỗi thường gặp: Christakis and Fowler's (2007) "obesity spreads through social networks" finding is frequently over-simplified in media coverage as proof that friends directly *cause* weight gain in one another. Because the underlying design is correlational, the **homophily** alternative – people tend to befriend others who already share similar habits, environments, or genetic predispositions – can never be fully excluded. A strong IB answer should always raise this limitation when discussing the study, rather than treating "57%" as clean proof of social causation.

Taken together, Stunkard et al. (1990) and Christakis and Fowler (2007) illustrate a broader principle that also appears elsewhere in behaviour genetics – for instance in **Caspi et al.'s (2003)** gene–environment interaction research on the 5-HTT gene and depression, covered in the Biological Approach unit: a genetic predisposition typically operates as a *vulnerability* or *susceptibility* factor whose ultimate behavioural expression still depends heavily on the surrounding social and cultural environment, rather than acting as a fixed, unavoidable destiny. Applied to obesity, this means a strong genetic contribution to BMI variation (Stunkard et al., 1990) is entirely compatible with – and does not contradict – a real, independent sociocultural contribution from social networks and shared norms (Christakis and Fowler, 2007); the two levels operate together rather than competing to explain the same variance.

6.8 Substance dependence

Khái niệm cốt lõi

Substance dependence, like most health behaviours, is best explained by integrating multiple levels of analysis. At the **biological** level, addictive substances – nicotine, alcohol, opioids, cocaine, and others – directly or indirectly increase **dopamine** transmission within the brain's **mesolimbic reward pathway**, the same dopaminergic reward circuitry demonstrated by **Olds and Milner's (1954)** rat self-stimulation study, covered in the Biological Approach unit. Repeated activation of this pathway by a drug reinforces drug-seeking behaviour, and with continued use typically produces **tolerance** (progressively larger doses become necessary to achieve the same subjective effect, as the brain adapts to chronic stimulation) and **withdrawal** (unpleasant physiological and psychological symptoms when drug use stops, driving continued use partly to avoid withdrawal rather than purely to seek the drug's positive effects). At the **cognitive** level, **expectancy theory** proposes that a person's beliefs about what a substance will do – for example, expecting that alcohol will reduce social anxiety or increase confidence – can shape both the decision to use the substance in the first place and the subjective experience of its effects, sometimes to a degree that is at least partly independent of the drug's actual pharmacological action, i.e., simply *expecting* a certain effect can partly produce that effect. At the **sociocultural** level, **peer influence and social norms** – including a person's perception of how much their peer group uses a substance, and direct social modelling of substance use within that group – are consistently associated with an individual's own likelihood of using that substance, an effect particularly pronounced during **adolescence**, a developmental period marked by heightened sensitivity to peer approval and identity formation. These three levels typically operate in a mutually reinforcing cycle: peer norms and positive expectancies often shape the decision to first try a substance, after which biological reinforcement (dopaminergic reward, followed by tolerance and withdrawal with repeated use) increasingly drives continued use even after the original cognitive or social motivations have changed or faded.

GIẢI THÍCH TIẾNG VIỆT VN

Sự lệ thuộc chất kích thích được giải thích tốt nhất bằng cách tích hợp nhiều cấp độ. Ở cấp độ **sinh học**: các chất gây nghiện làm tăng dẫn truyền **dopamine** trong **đường dẫn truyền phần thưởng mesolimbic** (chính là mạch mà Olds and Milner, 1954, đã chứng minh), dẫn đến **dung nạp thuốc (tolerance)** (cần liều cao hơn để đạt hiệu ứng như cũ) và **hội chứng cai (withdrawal)** khi ngừng sử dụng. Ở cấp độ **nhận thức**: **lý thuyết kỳ vọng (expectancy theory)** cho rằng niềm tin của một người về tác dụng của chất kích thích (ví dụ tin rằng rượu sẽ giảm lo âu xã hội) có thể định hình cả quyết định sử dụng lẫn trải nghiệm chủ quan khi sử dụng, đôi khi độc lập với tác động dược lý thực sự. Ở cấp độ **xã hội–văn hoá**: **ảnh hưởng của bạn bè đồng trang lứa và chuẩn mực xã hội** liên quan chặt chẽ đến khả năng một cá nhân sử dụng chất kích thích, đặc biệt rõ rệt ở tuổi **vị thành niên**.

Ví dụ mẫu · Worked example

The biological mechanism underlying substance dependence connects directly to a landmark study covered elsewhere in this course. **Olds and Milner (1954)** implanted electrodes into the septal area/lateral hypothalamus of rats and found that rats would self-stimulate this region at extraordinarily high rates – sometimes thousands of times per hour, even forgoing food when hungry – identifying what is now understood as the brain's dopaminergic **reward pathway**. Applied to substance dependence, this same reward circuitry helps explain why drugs that directly or indirectly flood this pathway with dopamine can come to override even basic

survival-oriented behaviours – eating, sleeping, maintaining relationships – in severely dependent individuals, and why simply "deciding" to stop is often insufficient without addressing the powerful, biologically-rooted reinforcement driving continued use.

VN **GIẢI THÍCH TIẾNG VIỆT**

Cơ chế sinh học của sự lệ thuộc chất kích thích gắn trực tiếp với nghiên cứu kinh điển **Olds and Milner (1954)**: chuột được cấy điện cực vào vùng dưới vỏ não tự kích thích với tần suất cực cao, thậm chí bỏ ăn dù đói, xác định **đường dẫn truyền phần thưởng** dopaminergic của não. Áp dụng vào sự lệ thuộc chất kích thích, cùng một mạch phần thưởng này giải thích vì sao các chất làm tăng dopamine mạnh có thể "lấn át" cả những hành vi sinh tồn cơ bản ở người nghiện nặng, và vì sao chỉ "quyết tâm" thôi thường không đủ để cai nghiện nếu không giải quyết được cơ chế củng cố sinh học mạnh mẽ này.

(!) Lỗi thường gặp: Avoid explaining substance dependence using only one level of analysis. A purely biological account ("dopamine causes addiction") cannot explain why expectancies (cognitive) or peer norms (sociocultural) so strongly predict *who* begins using a substance and *how* they subjectively experience it; a full IB-level answer integrates biological, cognitive, and sociocultural evidence, consistent with the biopsychosocial model introduced at the start of this unit.

6.9 Health promotion in practice: combining approaches

Khái niệm cốt lõi

Effective public health interventions rarely rely on a single level of explanation; instead, they typically combine biological, cognitive, and sociocultural components identified throughout this unit. Consider a smoking-cessation campaign. A **biological** component might include **nicotine replacement therapy**, which addresses the dopaminergic reward/withdrawal cycle directly by providing a controlled, lower-risk source of nicotine while the smoker breaks the behavioural habit of smoking itself. A **cognitive/message-framing** component involves carefully choosing gain- versus loss-framed messaging appropriate to the specific target behaviour, per Rothman and Salovey (1997) – for example, gain-framed messaging emphasizing the certain benefits of quitting (improved fitness, saved money) for the largely prevention-like behaviour of *not smoking*, while avoiding a purely high-fear appeal that risks triggering the defensive avoidance documented by Janis and Feshbach (1953). A **sociocultural** component might deliberately leverage positive social norms and peer support – for example, group cessation programmes or workplace policies that shift the visible social norm around smoking – in a manner consistent in spirit with Christakis and Fowler's (2007) finding that health-relevant behaviours (in their case, obesity) can spread through social ties, suggesting that healthy behaviour change, too, can plausibly spread through the same social pathways. Combining these components is not merely additive: a biological intervention that reduces withdrawal symptoms can make a person more receptive to cognitive and social messaging (since they are less preoccupied with acute cravings), while positive peer support can in turn make it easier to sustain the behavioural changes that a biological intervention alone only makes possible.

VN **GIẢI THÍCH TIẾNG VIỆT**

Các can thiệp y tế công cộng hiệu quả thường kết hợp nhiều cấp độ chứ không dựa vào một cách giải thích duy nhất. Một chiến dịch cai thuốc lá hiệu quả có thể kết hợp: thành phần

sinh học (liệu pháp thay thế nicotine, giải quyết chu trình phần thưởng/cai dopamine), thành phần **nhận thức/đóng khung thông điệp** (chọn đóng khung lợi ích hay mất mát phù hợp theo Rothman and Salovey, 1997, tránh chỉ dùng thông điệp gây sợ hãi cực đoan theo cảnh báo của Janis and Feshbach, 1953), và thành phần **xã hội–văn hoá** (tận dụng chuẩn mực xã hội tích cực và hỗ trợ từ bạn bè, tương tự tinh thần phát hiện của Christakis and Fowler, 2007, rằng hành vi sức khoẻ có thể lan truyền qua mạng lưới xã hội).

Ví dụ mẫu · Worked example

Christakis and Fowler's (2007) social-network logic can be applied directly to designing health promotion campaigns. Just as they found a person's obesity risk rose by 57% if a close friend became obese, the same social mechanism suggests that healthy behaviour change can plausibly spread through friendship ties in the opposite direction. A public-health team designing a national campaign to reduce adolescent vaping might therefore combine: free nicotine-patch access for adolescents already dependent (biological); school materials using gain-framed messaging around fitness and appearance rather than a single frightening graphic image (cognitive, informed by Janis and Feshbach's 1953 caution about high-fear-only appeals); and a peer-ambassador programme in which respected students model and publicly endorse not vaping, deliberately trying to seed a positive social-network effect (sociocultural). No single one of these components, used alone, would be expected to be as effective as the combination – illustrating why modern health promotion is designed, from the outset, around the biopsychosocial model rather than any single level of explanation.

GIẢI THÍCH TIẾNG VIỆT

VN Logic mạng lưới xã hội của Christakis and Fowler (2007) có thể áp dụng trực tiếp để thiết kế chiến dịch quảng bá sức khoẻ: nếu béo phì có thể lan truyền qua tình bạn thân thiết, hành vi lành mạnh cũng có thể lan truyền theo cách tương tự. Một chiến dịch giảm hút thuốc lá điện tử ở tuổi vị thành niên có thể kết hợp: miếng dán nicotine miễn phí cho học sinh đã lệ thuộc (sinh học); tài liệu trường học dùng thông điệp đóng khung lợi ích về thể hình/ngoại hình thay vì chỉ dùng hình ảnh gây sợ hãi (nhận thức); và chương trình "đại sứ đồng trang lứa" để học sinh có uy tín làm gương không hút thuốc (xã hội–văn hoá) – không thành phần nào riêng lẻ hiệu quả bằng khi kết hợp cả ba.

6.10 Problem Bank

Bài tập luyện tập

Which statement best distinguishes Engel's (1977) biopsychosocial model from the traditional biomedical model?

(A) The biopsychosocial model treats illness as purely a matter of pathogens and biochemistry

(B) The biopsychosocial model integrates biological, psychological, and social factors, whereas the biomedical model explains illness in purely physical terms

(C) The biomedical model was proposed after the biopsychosocial model, replacing it entirely

(D) The biopsychosocial model only applies to mental illness, never physical illness

Lời giải chi tiết

Engel's **biopsychosocial model** explicitly integrates biological, psychological/cognitive, and social/cultural factors as jointly causal in health and illness, in contrast to the older **biomedical model**, which explained illness in purely physical/biological terms and treated psychological/-social factors as secondary at best. **(B)**.

Bài tập luyện tập

A person has been under chronic workplace stress for several months. Outwardly they appear to be coping well and functioning normally, but their cortisol levels remain persistently elevated. According to Selye's (1936) General Adaptation Syndrome, which stage does this best describe?

(A) Alarm reaction
(B) Resistance
(C) Exhaustion
(D) Homeostasis

Lời giải chi tiết

The defining feature of the **resistance** stage is that outward functioning appears normal while cortisol remains chronically elevated, masking ongoing physiological strain – unlike the alarm reaction (acute, visible fight-or-flight symptoms) or exhaustion (visible decline in functioning and immunity). **(B)**.

Bài tập luyện tập

According to Holmes and Rahe's (1967) Social Readjustment Rating Scale, why might getting married contribute to a person's stress-related illness risk, despite being a generally positive event?

(A) Marriage is not included anywhere on the scale
(B) The scale assigns Life Change Units based on the amount of psychological readjustment an event requires, regardless of whether the event is positive or negative
(C) Marriage always ranks higher on the scale than death of a spouse
(D) Only negative events are ever scored on the SRRS

Lời giải chi tiết

The SRRS assigns **Life Change Units (LCUs)** based on the amount of *readjustment* an event demands, not on whether the event feels good or bad – marriage (50 LCUs) requires substantial readjustment even though it is usually welcomed, which is why it appears on the scale alongside clearly negative events such as divorce. **(B)**.

Bài tập luyện tập

Why does Cohen, Tyrrell, and Smith's (1991) common cold study provide stronger evidence for a causal link between stress and illness than a purely correlational survey linking self-reported stress to self-reported colds?

(A) It used a far larger sample than any survey could recruit

(B) Stress was measured before a standardized, controlled viral exposure, and illness was verified rather than only self-reported, strengthening the causal inference

(C) It only examined participants who were already healthy volunteers

(D) It was conducted over a period of exactly 50 years

Lời giải chi tiết

Because stress was measured *before* a fixed, researcher-controlled dose of virus was administered, and the resulting illness was verified using objective signs of infection rather than relying purely on self-report, this design rules out many confounds and reverse-causality explanations that a purely correlational survey could not, supporting a much stronger causal inference. **(B)**.

Bài tập luyện tập

A student appraises an upcoming exam as "very threatening" (primary appraisal) but then appraises herself as "well-prepared, with strong revision resources" (secondary appraisal). According to Lazarus and Folkman's (1984) transactional model, what is the most likely outcome?

(A) She will experience high stress regardless, because the exam is a threat

(B) Her secondary appraisal of adequate coping resources will substantially reduce the subjective stress created by the primary threat appraisal

(C) Primary appraisal has no real influence on subjective stress

(D) Coping strategy choice is unrelated to appraisal in this model

Lời giải chi tiết

In the transactional model, stress results from the *combination* of a threatening primary appraisal *and* an insufficient secondary appraisal of coping resources – when secondary appraisal concludes that resources are adequate (as here), the overall subjective stress experienced is substantially reduced even though the primary appraisal identified a threat. **(B)**.

Bài tập luyện tập

A man learns he has a chronic illness that currently cannot be cured or changed by any direct action he could take. According to coping research, which type of coping strategy is generally considered more adaptive in this specific situation?

(A) Problem-focused coping, since it directly targets the source of the stressor

(B) Emotion-focused coping (e.g., reappraisal, seeking emotional support), since the stressor itself is uncontrollable

(C) Avoidance is always the single most adaptive strategy in any situation

(D) Coping strategies make no measurable difference to wellbeing

Lời giải chi tiết

Because the illness cannot be directly changed by action (it is **uncontrollable**), emotion-focused strategies such as reappraisal or seeking emotional support are generally considered more adaptive than problem-focused coping, which is better suited to genuinely controllable

stressors. **(B)**.

Bài tập luyện tập

According to Ozbay et al.'s (2007) review, through which combination of mechanisms does strong social support most plausibly buffer the effects of stress?

(A) Only by providing money to pay for medical treatment

(B) Through practical help, emotional comfort, and a dampened physiological (e.g., cortisol) stress response

(C) Social support has no measurable effect on physiological stress reactivity

(D) Only by preventing stressful events from ever occurring in the first place

Lời giải chi tiết

Ozbay et al. (2007) describe social support as buffering stress through multiple converging pathways: practical assistance with the stressor itself, emotional comfort that reduces perceived threat, and blunted physiological stress reactivity (e.g., cortisol, cardiovascular responses) – not merely one isolated mechanism. **(B)**.

Bài tập luyện tập

A community offers a free, effective flu vaccination, and residents agree the flu can be serious, yet uptake remains low because the vaccination site is only open during work hours and is far from public transit. According to the Health Belief Model, which component is most directly responsible for the low uptake?

(A) Perceived susceptibility

(B) Perceived barriers

(C) Perceived severity

(D) Cues to action

Lời giải chi tiết

The scenario states residents already recognize the flu is serious (severity) and the vaccine is effective (benefits), so the limiting factor is the practical, logistical cost of accessing the vaccine – exactly what the Health Belief Model calls **perceived barriers**. **(B)**.

Bài tập luyện tập

Weinstein (1980) found that college students rated themselves as less likely than their peers to experience most negative future events. This bias was found to be strongest for which type of event?

(A) Events perceived as completely uncontrollable and totally random

(B) Events perceived as controllable, or associated with a stereotyped "typical victim" the participant did not identify with

(C) Events that had already happened to the participant

(D) Events unrelated to health in any way

Lời giải chi tiết

Weinstein (1980) found **unrealistic optimism** was strongest for events participants believed were **controllable** by their own behaviour, and for events linked to a stereotyped "typical victim" that participants did not see themselves resembling – not for uncontrollable or random events. **(B)**.

Bài tập luyện tập

A public health message aims to increase uptake of a mammogram screening programme, an activity with an uncertain outcome (it might reveal a serious finding). According to Rothman and Salovey (1997), which message framing would be predicted to be more effective?

(A) A gain-framed message emphasizing the benefits of screening

(B) A loss-framed message emphasizing the costs of not being screened

(C) Framing has no predicted effect on detection/screening behaviours

(D) Only a high-fear appeal with no framing at all

Lời giải chi tiết

Because mammogram screening is a **detection** behaviour with an uncertain outcome (it could reveal an undesirable finding), Rothman and Salovey (1997) predict a **loss-framed** message – emphasizing the costs of not being screened – would be more effective than a gain-framed message, which better suits certain, low-risk prevention behaviours. **(B)**.

Bài tập luyện tập

In Janis and Feshbach's (1953) classic dental hygiene study, the low-fear version of the message produced better subsequent dental hygiene behaviour than the high-fear version. What concept did the researchers use to explain why the high-fear message was less effective?

(A) Unrealistic optimism

(B) Defensive avoidance, in which overwhelming fear leads recipients to psychologically tune out or deny the message's relevance

(C) Homophily

(D) The primacy effect

Lời giải chi tiết

Janis and Feshbach (1953) proposed that very high fear arousal can trigger **defensive avoidance** – recipients psychologically disengage from, deny the personal relevance of, or avoid thinking about an overwhelmingly frightening message – which undermines rather than strengthens the intended behaviour change. **(B)**.

Bài tập luyện tập

DiMatteo's (2004) meta-analysis of roughly 50 years of adherence research found an average non-adherence rate of close to 24.8%, and also found that adherence was significantly higher when:

(A) Patients were given the shortest possible consultation

(B) Patient–practitioner communication was of higher quality

(C) Patients received no information about their diagnosis

(D) Treatment regimens were left unexplained

Lời giải chi tiết

DiMatteo (2004) found that better **patient–practitioner communication** was significantly and consistently associated with higher adherence across the pooled studies – not shorter consultations or less information, which would be expected to worsen understanding and adherence. **(B)**.

Bài tập luyện tập

A doctor explains a complicated new medication regimen at the very end of a 20-minute consultation, after first spending most of the appointment discussing the patient's diagnosis and prognosis in detail. According to Ley's (1988) cognitive model of adherence, what is the most likely consequence?

(A) The patient will perfectly remember the medication instructions regardless of timing

(B) The patient is likely to forget or misunderstand the medication instructions, because they were given later in the consultation

(C) Adherence is entirely unaffected by when information is delivered

(D) The patient will adhere better because the diagnosis was discussed first

Lời giải chi tiết

Ley's (1988) model highlights a **primacy effect**: information given *early* in a consultation is remembered significantly better than information given later. Because the medication instructions were delivered last – after an emotionally significant discussion of diagnosis and prognosis – they are especially likely to be forgotten or misunderstood. **(B)**.

Bài tập luyện tập

Stunkard et al.'s (1990) Swedish Twin Registry study found that BMI correlations between monozygotic (MZ) twins reared apart were nearly as high as those reared together, and much higher than for dizygotic (DZ) twins. What does this pattern suggest?

(A) BMI is determined entirely by the shared childhood rearing environment

(B) A substantial genetic contribution (approximately 70%) to variation in BMI, largely independent of shared rearing environment

(C) Twin studies cannot be used to study body weight

(D) DZ twins share more DNA than MZ twins

Lời giải chi tiết

Because MZ twins reared *apart* were still nearly as similar in BMI as MZ twins reared together, and both were far more similar than DZ twins, the pattern strongly implicates **genetic** factors (estimated at around 70%) rather than shared rearing environment as the main driver of BMI

similarity. **(B)**.

Bài tập luyện tập

What is the main methodological limitation of Christakis and Fowler's (2007) conclusion that obesity risk increased by 57% when a close friend became obese?

(A) The sample size (over 12,000 people) was far too small

(B) Because the study is correlational, homophily (people befriending others already similar to them) cannot be ruled out as an alternative to genuine social influence

(C) The Framingham Heart Study only lasted a single year

(D) Friends cannot possibly influence each other's health behaviour

Lời giải chi tiết

Because Christakis and Fowler's design is a **correlational** social-network study with no experimental manipulation of friendship or weight, **homophily** – people tending to befriend others who already share similar habits or predispositions – remains a plausible alternative explanation that the design cannot rule out. **(B)**.

Bài tập luyện tập

In a study using a "balanced placebo" style design, participants who believe they have consumed alcohol (but were actually given a disguised non-alcoholic drink) report increased confidence and reduced social anxiety similar to genuine alcohol consumption. This finding best illustrates:

(A) Tolerance

(B) Withdrawal

(C) Expectancy theory: a belief about a substance's effects can shape the subjective experience of using it

(D) Homophily

Lời giải chi tiết

Because the subjective effect occurred based purely on the **belief** that alcohol had been consumed, independent of any actual pharmacological effect, this illustrates **expectancy theory**: expectations about a substance can shape both the decision to use it and the subjective experience of using it. **(C)**.

Bài tập luyện tập

Research on adolescent substance use consistently finds that an individual's own likelihood of using a substance is strongly predicted by:

(A) Their perceived level of peer substance use and prevailing peer norms

(B) Their performance on unrelated visuospatial reasoning tasks

(C) Their birth order alone, independent of any social context

(D) The particular season in which they happen to be surveyed

Lời giải chi tiết

A consistent sociocultural finding in substance-use research is that **perceived peer substance use and peer norms**, along with direct social modelling within a peer group, are strongly associated with an individual's own likelihood of substance use, particularly during adolescence. **(A)**.

Bài tập luyện tập

A national anti-smoking campaign combines nicotine replacement therapy, carefully chosen gain-framed messaging about the certain benefits of quitting, and a peer-support programme leveraging positive social norms. This design most directly illustrates:

(A) A purely biomedical approach to health promotion

(B) The biopsychosocial model applied to health promotion, combining biological, cognitive, and sociocultural components

(C) Homophily

(D) Unrealistic optimism

Lời giải chi tiết

Combining a biological intervention (nicotine replacement), a cognitive/message-framing choice (gain-framed messaging), and a sociocultural strategy (peer support/social norms) in a single campaign is a direct, practical application of the **biopsychosocial model** to health promotion, rather than reliance on any single level of explanation. **(B)**.

Bài tập luyện tập

SAQ-style: Outline Engel's (1977) biopsychosocial model of health and illness.

Lời giải chi tiết

Engel (1977) proposed that health and illness result from the dynamic interaction of three levels of explanation, rather than any single cause. **Biological** factors include genetic predisposition, physiological processes, and immune function. **Psychological/cognitive** factors include a person's health-related beliefs, coping style, and emotional state. **Social/cultural** factors include socioeconomic status, the quality of a person's social support, and cultural norms around illness and help-seeking. This model was proposed as a direct alternative to the older **biomedical model**, which explained illness in purely physical/biological terms (a pathogen, a lesion, a biochemical imbalance) and treated psychological and social influences as secondary at best. Engel argued the biomedical model could not explain why two patients with an identical physical diagnosis often show very different illness experiences, treatment adherence, and recovery – differences the biopsychosocial model attributes to variation in psychological and social factors operating alongside biology. A concrete illustration is Cohen, Tyrrell, and Smith's (1991) finding that a psychological stress index measured before viral exposure predicted a subsequent biological outcome (a clinical cold), directly demonstrating cross-level interaction. Full credit accurately names and explains all three levels and clearly contrasts the model with the biomedical model.

Bài tập luyện tập

SAQ-style: Describe Selye's (1936) General Adaptation Syndrome, including its three stages.

Lời giải chi tiết

Selye's (1936) **General Adaptation Syndrome (GAS)** describes a three-stage physiological response to prolonged stress. In the **alarm reaction**, the sympathetic nervous system and adrenal medulla trigger an immediate fight-or-flight response, releasing adrenaline and rapidly raising heart rate, blood pressure, and blood glucose. If the stressor persists, the body enters **resistance**: acute symptoms subside and the person appears to function normally, but cortisol (released via the HPA axis) remains chronically elevated, causing ongoing hidden physiological strain. If the stressor continues long enough, the body enters **exhaustion**: its adaptive resources become depleted, immune function and other regulatory systems decline substantially, and the organism becomes markedly more vulnerable to illness. The model is significant because it proposes a largely universal, non-specific physiological pathway linking prolonged psychological stress to physical illness, providing a biological mechanism for the stress–illness link later demonstrated experimentally by studies such as Cohen, Tyrrell, and Smith (1991). Full credit names and accurately describes all three stages in the correct order.

Bài tập luyện tập

SAQ-style: Distinguish between problem-focused and emotion-focused coping, using an example of each.

Lời giải chi tiết

According to **Lazarus and Folkman's (1984)** transactional model, **problem-focused coping** directly targets the source of a stressor – for example, a student overwhelmed by an upcoming exam might make a detailed revision schedule or ask a teacher for extra help, directly addressing the cause of their stress. This strategy tends to be most effective when the stressor is **controllable**, i.e., some direct action could plausibly change the situation. **Emotion-focused coping** instead targets the person's emotional response to a stressor without necessarily changing the stressor itself – for example, someone grieving a loss they cannot undo might seek emotional support from friends or reframe their situation more positively (cognitive reappraisal). This strategy can be more adaptive than problem-focused coping specifically when a stressor is **uncontrollable**, though strategies like avoidance or denial can become maladaptive if overused, since they may prevent someone from taking action that is, in fact, possible and needed. Full credit accurately defines both strategies and gives a distinct, plausible example of each, ideally noting the role of controllability.

Bài tập luyện tập

SAQ-style: Explain how message framing can influence the effectiveness of health promotion campaigns, with reference to Rothman and Salovey (1997).

Lời giải chi tiết

Rothman and Salovey (1997) found that the effectiveness of a health message's **framing** depends on the type of behaviour it targets. **Gain-framed messages**, which emphasize the benefits of taking an action (e.g., "sunscreen protects your skin"), tend to be more effective for promoting **prevention** behaviours, which carry a certain, low-risk outcome. **Loss-framed messages**, which emphasize the costs of failing to act (e.g., "not checking for cancer risks your health"), tend to be more effective for promoting **detection/screening** behaviours, which involve genuine uncertainty and the risk of an undesirable finding. The proposed explanation is that gain-framing suits situations where the outcome is already reassuring and certain, rein-

forcing a positive expectation, while loss-framing better matches the risk and uncertainty already present in detection behaviours. A practical implication is that health campaigns should not assume one framing style is universally "more persuasive" – a campaign promoting sunscreen use should likely use gain-framed messaging, while a campaign promoting a cancer screening should likely use loss-framed messaging. Full credit explains both types of framing accurately and links each correctly to prevention versus detection behaviours.

Bài tập luyện tập

SAQ-style: Outline the findings of DiMatteo's (2004) meta-analysis on adherence to medical advice.

Lời giải chi tiết

DiMatteo (2004) conducted a large meta-analysis pooling data from roughly **50 years** of research on patient adherence to medical recommendations. Across this very large combined evidence base, the average rate of **non-adherence** was found to be close to **one in four patients (about 24.8%)**, indicating that non-adherence is a widespread and persistent problem across many different treatments, conditions, and time periods rather than an occasional exception. A central finding of the meta-analysis was that the quality of **patient–practitioner communication** was significantly and consistently associated with higher adherence: patients who felt listened to, who received a clear explanation of the treatment rationale, and who experienced a collaborative rather than purely directive relationship with their practitioner were significantly more likely to adhere to medical advice. This finding, replicated consistently across such a large combined body of research, suggests that adherence is not simply a matter of the objective correctness of medical advice, but is substantially shaped by modifiable relational and communicative factors between practitioner and patient. Full credit accurately reports the approximate non-adherence rate and the communication finding.

Bài tập luyện tập

SAQ-style: Explain one biological and one sociocultural factor contributing to the etiology of obesity, referring to relevant research.

Lời giải chi tiết

At the **biological** level, **Stunkard et al. (1990)** analysed the Swedish Twin Registry and found that BMI correlations between monozygotic (MZ) twins reared apart were nearly as high as those reared together, and substantially higher than for dizygotic (DZ) twins, estimating a strong genetic contribution to BMI variation (approximately 70%) that is largely independent of shared childhood environment. At the **sociocultural** level, **Christakis and Fowler (2007)** analysed three decades of Framingham Heart Study social-network data from over 12,000 people and found that a person's obesity risk increased by 57% if a close friend became obese during the same period, with weaker effects for siblings and neighbours, suggesting obesity-related norms and behaviours can spread through social ties. Because Christakis and Fowler's study is correlational, however, it cannot rule out **homophily** (people befriending others who are already similar to them) as an alternative explanation to genuine social influence. Full credit names and accurately describes one biological and one sociocultural study/finding, ideally noting the limitation of the sociocultural evidence.

Bài tập luyện tập

ERQ-style: Discuss factors influencing coping with stress, using relevant research.

Lời giải chi tiết

Coping with stress is shaped by both how a stressor is cognitively appraised and by the social resources available to the individual facing it. **Lazarus and Folkman's (1984) transactional model** proposes that stress arises not from an event itself but from the interaction between **primary appraisal** (is this a threat?) and **secondary appraisal** (do I have adequate resources to cope?) – meaning the same objective stressor can be experienced very differently by different people, depending on their appraisal. Once a situation is appraised as stressful, individuals draw on **problem-focused coping** (directly addressing the source of stress, e.g., making a plan or seeking practical help), which tends to be more effective when a stressor is genuinely **controllable**, or **emotion-focused coping** (managing the emotional response, e.g., reappraisal, seeking emotional support, or avoidance/denial), which can be more adaptive when a stressor is **uncontrollable**, though it risks becoming maladaptive if overused (e.g., avoidance preventing action that is actually needed and possible). Beyond an individual's own appraisal and strategy choice, **social support** plays a substantial buffering role: **Ozbay et al. (2007)**, reviewing decades of research, found that individuals with stronger social support networks show greater resilience to stress and better health outcomes, through mechanisms including direct practical help (supporting problem-focused coping), emotional comfort (softening primary appraisal of threat), and even a dampened physiological stress response (e.g., reduced cortisol reactivity) when support is present during a stressful task. Taken together, this research suggests that effective coping is not about using a single "correct" strategy in all situations, but about flexibly matching problem-focused or emotion-focused strategies to a stressor's actual controllability, while social support provides a further layer of buffering that operates across psychological and physiological levels simultaneously – a clear illustration of the biopsychosocial model applied to coping specifically. A full-credit answer names and accurately explains at least two named factors/studies (e.g., appraisal, coping type, social support) and links each to how it plausibly influences the coping process.

Bài tập luyện tập

ERQ-style: Evaluate research into health promotion strategies, including the role of message framing and fear appeals.

Lời giải chi tiết

Health promotion research shows that the persuasiveness of a health message depends heavily on *how* it is framed and how much fear it arouses, not simply on how much objective risk information it contains. **Rothman and Salovey (1997)**, reviewing message framing research, concluded that **gain-framed messages** (emphasizing the benefits of an action, e.g., "sunscreen protects your skin") are generally more effective for promoting **prevention** behaviours, which carry a certain, low-risk outcome, while **loss-framed messages** (emphasizing the costs of inaction, e.g., "not checking for cancer risks your health") are generally more effective for promoting **detection/screening** behaviours, which involve genuine uncertainty and the risk of an undesirable finding. This is a genuinely useful, evidence-based, and practically actionable finding for campaign designers, but it also means there is no single "best" framing strategy across all health messages – a campaign must correctly classify its target behaviour as prevention-type or detection-type before choosing a frame, or it risks using the less effective frame for that

context. Fear appeals present a related but distinct issue. **Janis and Feshbach's (1953)** classic dental hygiene study found that a **low-fear** message produced significantly better subsequent dental hygiene behaviour than a **high-fear** message, because very high fear arousal can trigger **defensive avoidance** – recipients psychologically disengage from or deny the personal relevance of an overwhelmingly frightening message, undermining the intended behaviour change. This directly challenges the common assumption that "scarier equals more persuasive." However, a fully balanced evaluation must note that later research has qualified this finding: fear appeals can still be effective when combined with a clear, credible sense of **self-efficacy** – i.e., when the frightening message also shows the audience a specific, achievable action they can take to address the threat – suggesting the real lesson is not "avoid fear entirely" but "never use fear without a credible path to action." A full-credit answer accurately describes at least two named studies/findings (framing and fear appeals), explains the underlying psychological mechanism for each, and offers a balanced evaluation noting that neither framing type nor fear-based messaging is universally more or less effective across all contexts.

Bài tập luyện tập

ERQ-style: Discuss the etiology of obesity, using relevant research at more than one level of analysis.

Lời giải chi tiết

Obesity is best understood through the interaction of biological and sociocultural factors, each supported by distinct research designs with complementary strengths and limitations. At the **biological** level, **Stunkard et al. (1990)** analysed data from the Swedish Twin Registry and found that body-mass index (BMI) correlations between monozygotic (MZ) twins reared *apart* were nearly as high as those between MZ twins reared *together*, and substantially higher than correlations for dizygotic (DZ) twins – using the standard twin-study logic, this suggests a strong genetic contribution to BMI variation, estimated at approximately 70%, that is largely independent of shared childhood rearing environment. This is compelling evidence that body weight is not purely a matter of individual willpower, but is substantially shaped by inherited biological factors such as metabolic rate and appetite regulation. At the **sociocultural** level, **Christakis and Fowler (2007)** analysed three decades of social-network data from the Framingham Heart Study, covering more than 12,000 participants, and found that a person's risk of becoming obese increased by 57% if a close friend became obese during the same period, with much weaker effects for siblings and neighbours – suggesting that obesity-related behaviours and norms can spread through social ties. However, this study is fundamentally **correlational**: because friendship and weight change were not experimentally manipulated, the researchers could not rule out **homophily** (the tendency of people to befriend others who are already similar to them in relevant habits or predispositions) as an alternative explanation for the pattern, rather than genuine social influence spreading between friends. Taken together, twin studies and social-network studies point to a nuanced picture: a substantial genetic predisposition to variation in body weight operates within a social and cultural environment that can independently shape weight-related behaviours and norms, consistent with the broader **biopsychosocial model** of health introduced at the start of this unit. A full-credit answer accurately describes at least one biological and one sociocultural study, explicitly evaluates a limitation of at least one (e.g., homophily), and reaches a reasoned conclusion about how the levels combine.

Bài tập luyện tập

ERQ-style: Discuss biological, cognitive, and sociocultural factors contributing to substance dependence.

Lời giải chi tiết

Substance dependence is best explained by integrating evidence from three distinct but interacting levels of analysis. At the **biological** level, addictive substances directly or indirectly increase **dopamine** transmission within the brain's mesolimbic **reward pathway** – the same reward circuitry demonstrated by **Olds and Milner's (1954)** classic rat self-stimulation study, in which rats implanted with electrodes near the septal area/lateral hypothalamus self-stimulated at extraordinarily high rates, even forgoing food when hungry, identifying this circuit as an exceptionally powerful reinforcer of behaviour. Applied to substance dependence, repeated activation of this pathway by a drug reinforces drug-seeking behaviour and, with continued use, typically produces **tolerance** (progressively larger doses needed for the same effect) and **withdrawal** (aversive symptoms upon stopping), both of which help explain why dependence can persist even when a person consciously wants to stop. At the **cognitive** level, **expectancy theory** proposes that a person's beliefs about a substance's effects – for example, expecting that alcohol will reduce social anxiety or increase confidence – can shape both the decision to use the substance and the subjective experience of its effects, sometimes independently of the drug's actual pharmacological action; this means two people consuming an identical dose of a substance may have meaningfully different subjective experiences depending on what they expect to feel. At the **sociocultural** level, **peer influence and social norms** – particularly perceived peer substance use and direct social modelling within a peer group – are consistently associated with an individual's own likelihood of substance use, an effect that is especially pronounced during **adolescence**, when sensitivity to peer approval and identity formation are heightened. No single level offers a complete explanation on its own: a purely biological account cannot explain why expectancies or peer norms so strongly predict who begins using a substance in the first place, while purely cognitive or sociocultural accounts cannot fully explain the powerful, often involuntary-feeling physiological pull of tolerance and withdrawal. A full-credit answer accurately explains all three levels, links each to a specific mechanism or study, and explicitly argues that the levels interact rather than operating independently – directly consistent with the biopsychosocial model introduced at the start of this unit.

Bài tập luyện tập

A man has recently started seriously thinking that his diet might be a problem and is weighing up whether to change it, but he has not yet set a date to start and has taken no concrete preparatory action. According to Prochaska and DiClemente's (1983) transtheoretical model, which stage does this best describe?

(A) Precontemplation
(B) Contemplation
(C) Preparation
(D) Maintenance

Lời giải chi tiết

The defining feature of **contemplation** is that a person has become aware that a problem exists and is seriously considering change, typically within about the next six months, but has not yet committed to a specific plan or timeframe for action – unlike preparation, which involves

intending to act soon and already taking small preparatory steps. **(B)**.

Bài tập luyện tập

According to Prochaska and DiClemente's (1983) transtheoretical model, how is relapse (a return to the old behaviour) best understood?

(A) As definitive proof that the model is invalid and that behaviour change is impossible

(B) As a common and expected part of the change process, after which a person typically cycles back to an earlier stage rather than restarting entirely from precontemplation

(C) As an event that can only occur immediately after the precontemplation stage

(D) As something that, once it occurs, permanently prevents any further progress through the stages

Lời giải chi tiết

The transtheoretical model explicitly treats **relapse** as a normal, common feature of behaviour change that can occur from any stage, not as a rare failure; following a relapse, a person typically cycles back to an earlier stage (often contemplation or preparation) rather than the process ending or restarting completely from scratch, which is why the model is usually depicted as a cycle rather than a single straight line. **(B)**.

Bài tập luyện tập

Why does Prochaska and DiClemente's (1983) transtheoretical model predict that a health intervention matched to a person's current stage of change will generally be more effective than a single generic intervention applied to everyone regardless of readiness?

(A) Because every person is always in the action stage, so all interventions should focus only on practical support

(B) Because different stages involve different psychological needs and barriers, so an intervention addressing the wrong need (e.g., offering practical support to someone not yet considering change) is unlikely to be effective

(C) Because relapse never occurs once an intervention has been correctly matched to a stage

(D) Because the model claims stage-matching has no measurable effect on outcomes

Lời giải chi tiết

Because each stage of the transtheoretical model involves distinct psychological needs and barriers – for example, someone in precontemplation may simply need increased awareness that a problem exists, while someone in action or maintenance needs concrete practical support and relapse-prevention planning – an intervention that does not match a person's actual stage of readiness is likely to address the wrong need, and is therefore less effective than one specifically tailored to that stage. **(B)**.

Bài tập luyện tập

SAQ-style: Outline the transtheoretical model of behaviour change.

Lời giải chi tiết

Prochaska and DiClemente's (1983) transtheoretical model (TTM), also called the "stages of change" model, proposes that intentional health behaviour change unfolds through a series of distinct stages rather than happening all at once. In **precontemplation**, a person is not yet considering change and often does not see the behaviour as a problem. In **contemplation**, the person recognises a problem and begins considering change, typically within the next six months, without yet committing to act. In **preparation**, the person intends to act soon (often within a month) and begins taking small preparatory steps. In **action**, the person actively and overtly modifies their behaviour, typically for the first six months. In **maintenance**, the new behaviour has been sustained for six months or longer, with effort shifting toward preventing relapse. Crucially, **relapse** – returning to the old behaviour – is treated as a common, expected part of the process rather than a rare failure, and can occur from any stage, after which a person typically cycles back to an earlier stage rather than the process being strictly linear. A key practical implication is that interventions matched to a person's current stage of readiness tend to be more effective than a single generic intervention applied regardless of readiness. Full credit names and accurately describes all five stages in order and explicitly mentions the role of relapse.

Ôn tập nhanh: Toàn bộ chương trình IB Psychology xoay quanh sáu mảng kiến thức liên kết chặt chẽ với nhau. (1) Nghiên cứu khoa học bắt đầu từ việc xác định rõ **biến độc lập (IV)** và **biến phụ thuộc (DV)**, và lựa chọn đúng thiết kế thực nghiệm (independent samples, repeated measures, matched pairs) hoặc thiết kế bán thực nghiệm/tự nhiên khi không thể phân nhóm ngẫu nhiên; (2) nghiên cứu tương quan chỉ cho biết hai biến **có liên hệ** với nhau, KHÔNG cho biết biến nào gây ra biến nào – luôn phải cân nhắc **biến thứ ba** và vấn đề **chiều hướng nhân quả**; (3) ở cấp độ sinh học, **Maguire và cộng sự (2000)** (tài xế taxi London có hồi hải mã sau lớn hơn) và **Draganski và cộng sự (2004)** (chất xám tăng rồi giảm khi học rồi ngừng tập tung hứng) là hai bằng chứng kinh điển cho **định khu chức năng não (localization)** và **tính mềm dẻo thần kinh (neuroplasticity)**; (4) ở cấp độ nhận thức, cần phân biệt rõ **mô hình đa kho lưu trữ (multi-store model, Atkinson–Shiffrin 1968)** với **mô hình trí nhớ làm việc (working memory model, Baddeley–Hitch 1974)** – hai mô hình khác nhau về cách trí nhớ ngắn hạn vận hành; (5) **Loftus and Palmer (1974)** cho thấy trí nhớ mang tính **tái cấu trúc (reconstructive)**: từ ngữ trong câu hỏi dẫn dắt (ví dụ "smashed" so với "hit") có thể làm thay đổi chính ước lượng và chi tiết được nhớ lại, chứ không đơn thuần là ghi lại chính xác những gì đã chứng kiến; (6) ở cấp độ xã hội–văn hoá, **Tajfel (1971)** với thiết kế nhóm tối thiểu (minimal group paradigm) chứng minh rằng chỉ cần phân loại thành viên vào các nhóm một cách gần như vô nghĩa cũng đủ tạo ra thiên vị nội nhóm (in-group bias), đặt nền móng cho **Lý thuyết Bản sắc Xã hội (Social Identity Theory)**; (7) trong tâm lý học bất thường, **Rosenhan (1973)** cho thấy **độ tin cậy (reliability)** và **độ giá trị (validity)** của một chẩn đoán tâm thần là hai vấn đề khác nhau: các bác sĩ có thể đồng thuận với nhau về một nhãn chẩn đoán (reliable) mà nhãn đó vẫn không phản ánh đúng thực trạng tâm lý của bệnh nhân (thiếu validity); và (8) cuối cùng, **mô hình sinh học–tâm lý–xã hội (biopsychosocial model, Engel 1977)** của chương Health Psychology tích hợp cả ba cấp độ giải thích này – sinh học, tâm lý/nhận thức, và xã hội/văn hoá – để lý giải đầy đủ hơn về sức khoẻ, bệnh tật, ứng phó với stress, niềm tin sức khoẻ, sự tuân thủ điều trị, béo phì, và sự lệ thuộc chất kích thích, thay vì quy giản mọi hiện tượng sức khoẻ về một nguyên nhân duy nhất.

Đồng hành cùng 8020 English

Cảm ơn bạn đã học cùng bộ giáo trình quốc tế 8020. **Điểm thật · Thầy thật · Kết quả thật** — nhiều học viên chỉ cần 1–2 khoá để đạt kết quả mong muốn.

Chương trình đào tạo tại 8020 English

IELTS Academic/General · **SAT** · PTE · Duolingo · TOEFL | **AP** (College Board) · **IB** Diploma · **Cambridge** IGCSE / A-Level | săn học bổng du học.

Vì sao chọn 8020 English?

- **100% giáo viên** đạt tối thiểu 8.0 IELTS hoặc 1500 SAT — đội ngũ Giáo sư · Tiến sĩ · Thạc sĩ tốt nghiệp trường top đầu thế giới (Carnegie Mellon — #1 Hoa Kỳ về Khoa học Máy tính).
- **Kèm 1–1** mọi độ tuổi; lớp sĩ số nhỏ 2–5 bạn (đa số dưới 10 bạn/lớp).
- Lộ trình cá nhân hoá, theo sát tiến độ từng học viên; lớp OFFLINE tại TP.HCM & ONLINE toàn quốc.

Bảng vàng học viên

AP 5/5 — Calculus AB/BC	**AP** 4–5 — Biology, Chemistry	**IB** 90/100 — Economics
SAT 1590 / 1570 / 1550	**IELTS** 8.0–9.0	**Duolingo** 110 · **PTE** 90

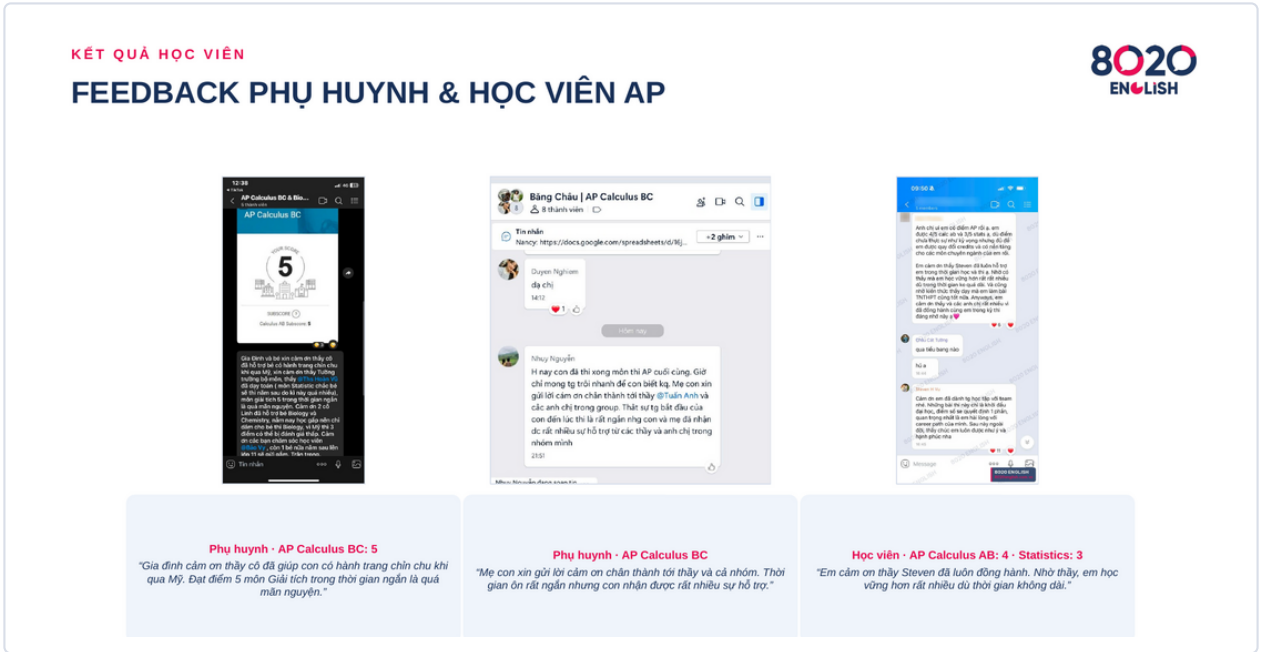
Cảm nhận học viên & phụ huynh

> *"Bạn đã cải thiện được tư duy Writing — kỹ năng từng là nỗi sợ lớn nhất — và cuối cùng đã đậu vào trường top như mong muốn. Thái độ học tập cực kỳ nghiêm túc; ngay cả khi nằm viện vẫn cố gắng học đều đặn."*
>
> — Phan Thị Thanh Hằng · IELTS Overall 8.5

> *"Cần tất cả kỹ năng trên 7.5 để xét vào trường top 1 Anh Quốc về Y học (chương trình UKFPO của NHS) — và đã đạt mục tiêu sau khi học Writing 1–1."*
>
> — Trần Hoàng Bảo Ngọc · IELTS Overall 8.0 (Writing 6.0 → 7.5)

> *"Gia đình và bé xin cảm ơn thầy cô đã giúp con có hành trang chỉn chu khi qua Mỹ. Đạt điểm 5 môn Giải tích trong thời gian ngắn là quá mãn nguyện."*
>
> — Phụ huynh · AP Calculus BC 5/5

> *"Em cảm ơn thầy đã luôn đồng hành. Nhờ thầy, em học vững hơn rất nhiều dù thời gian ôn không dài."*
>
> — Học viên · AP Calculus AB 4

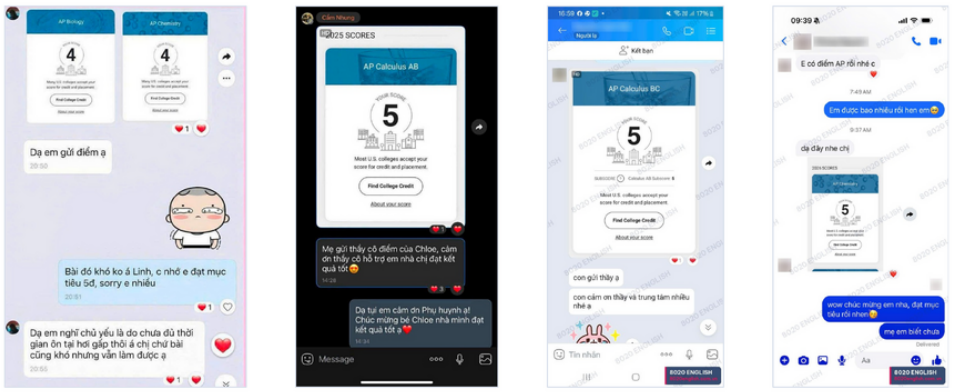


Feedback phụ huynh & học viên AP — nhiều môn đạt điểm 4 & 5

Điểm thi thật của học viên

KẾT QUẢ HỌC VIÊN

ĐIỂM SỐ AP



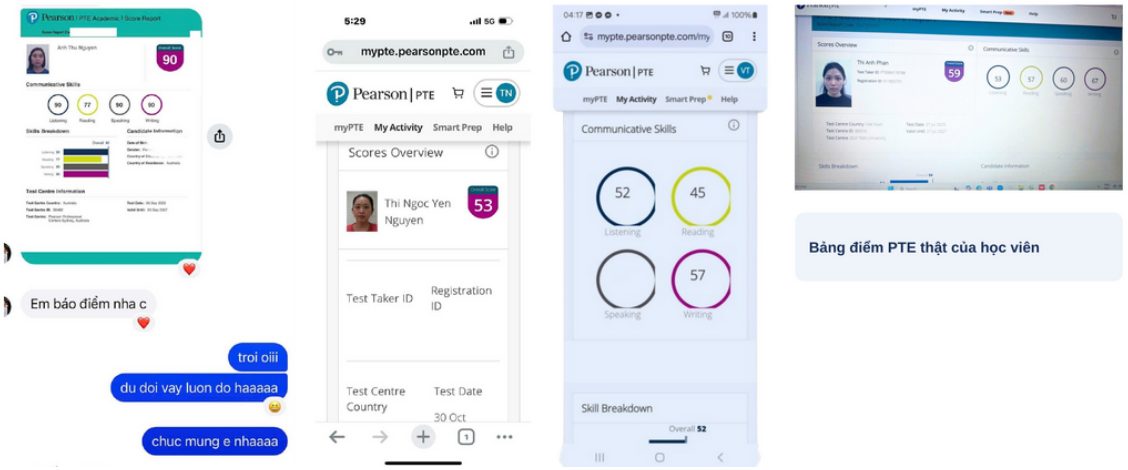
AP Biology: 4 · AP Chemistry: 4 | AP Calculus AB: 5 | AP Calculus BC: 5 | AP Chemistry: 5

Bảng điểm AP thật của học viên – nhiều môn đạt điểm 4 & 5

Bảng điểm AP thật — Calculus AB/BC 5/5 · Biology & Chemistry 4–5 (College Board)

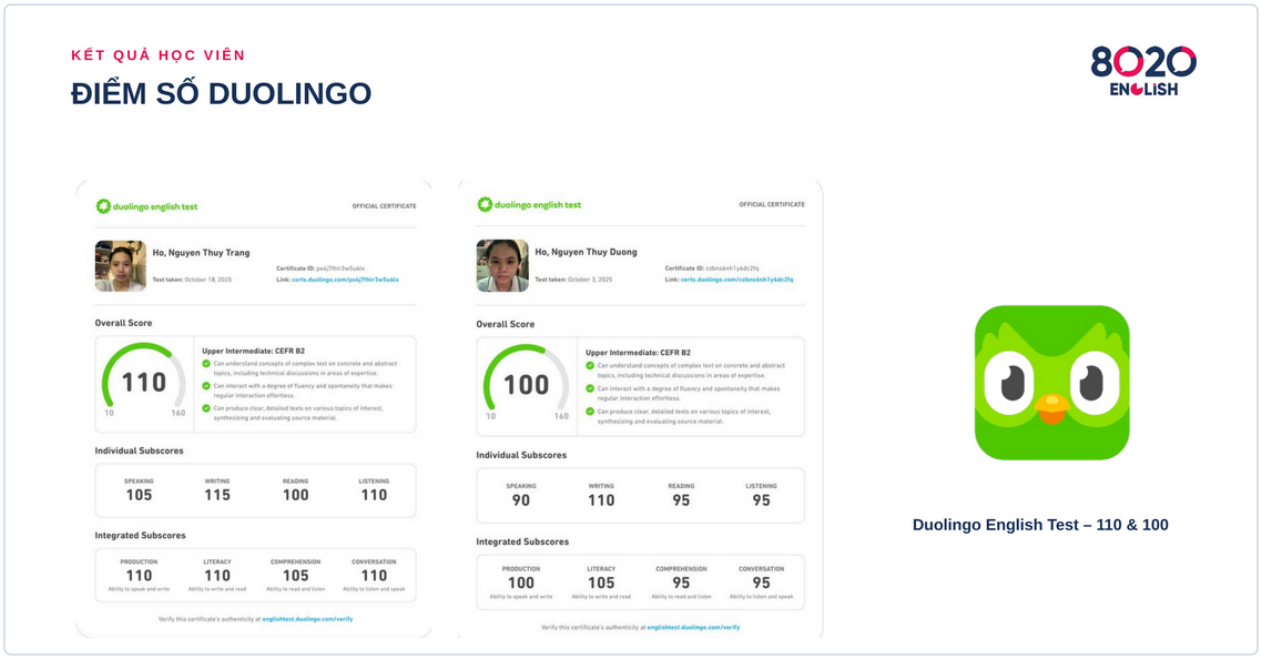
KẾT QUẢ HỌC VIÊN

ĐIỂM SỐ PTE

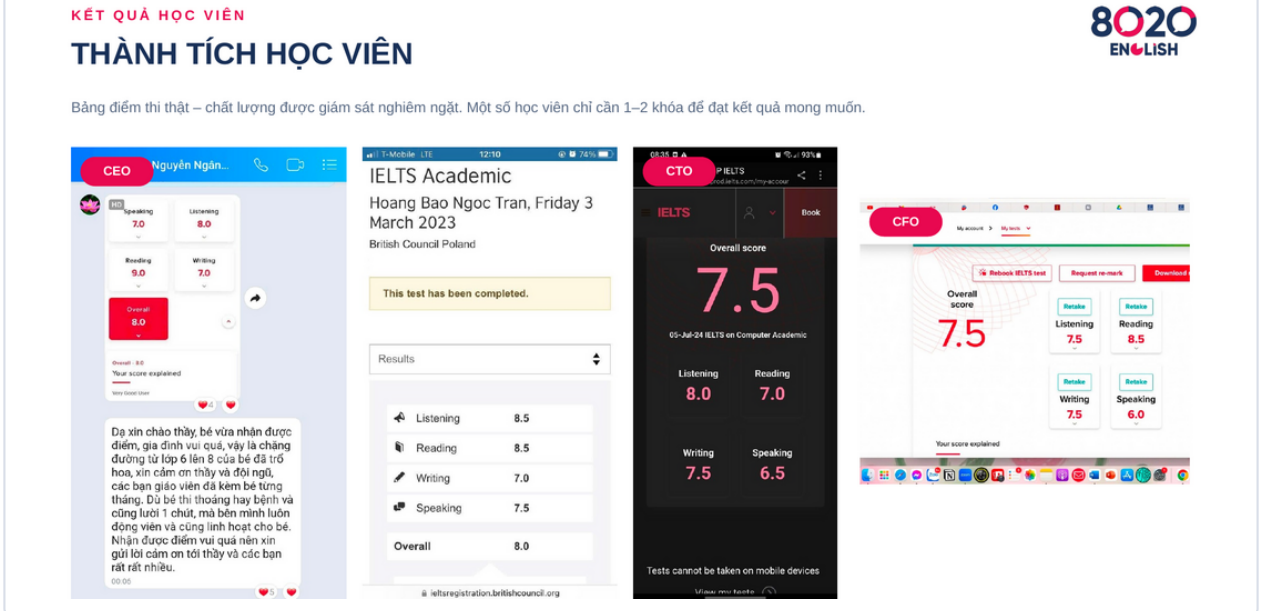


Bảng điểm PTE thật của học viên

Học viên 8020 — PTE Academic 90



Học viên 8020 — Duolingo English Test 110 & 100



Học viên 8020 — IELTS 8.0 / 7.5 / 8.5 (báo điểm thật)