



AP Psychology

Giáo trình luyện thi chuyên sâu
Song ngữ Anh-Việt

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 sẵn 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 họa và hệ thống bài tập có lời giải chi tiết.

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ĐỘI NGŨ GIÁO VIÊN TẬN TÂM

***Tối thiểu 8.0 IELTS Overall**



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IELTS 8.5 Overall



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IELTS 8.0 Overall



Gv. Nguyễn Đan Vy
IELTS 8.0 Overall







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

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THÀNH TÍCH HỌC VIÊN

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

ĐỘI NGŨ

ĐỘI NGŨ GIÁO VIÊN TẬN TÂM

*Tối thiểu 1500 SAT Overall

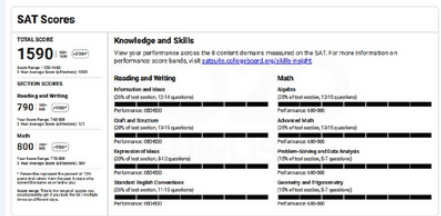
Thầy Quang Minh

Đại học Bách Khoa Hà Nội



SAT 1590

IELTS 8.0



THỂ MẠNH & KINH NGHIỆM

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- Day nhanh band 1400–1550+
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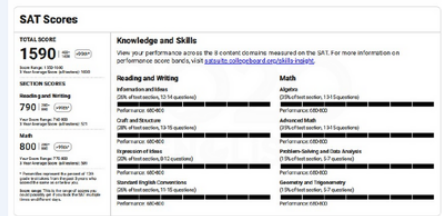
Cô Phương Vy

Đại học Ngoại thương



SAT 1590

IELTS 8.0



THỂ MẠNH & KINH NGHIỆM

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Giảng viên 8020 – SAT 1590 (ĐH Bách Khoa Hà Nội & ĐH Ngoại thương)

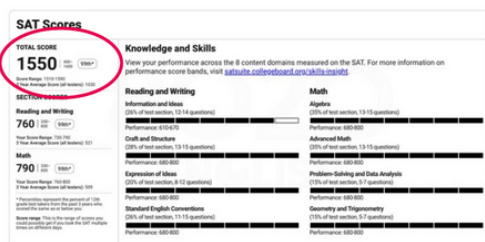
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TUTOR 1-1 – ĐIỂM SỐ ẤN TƯỢNG



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Name: Tam T Nguyen
Grade: 12
Test administration: SAT May 3, 2025
Tested on: May 3, 2025
Record Locator: 410244771



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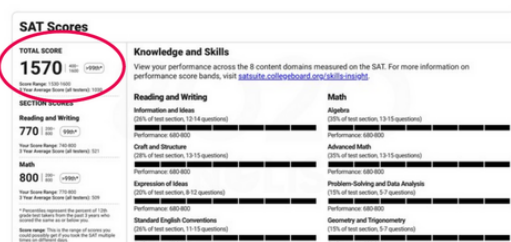


satsuite.org/whatsnext



Your Scores

Name: Linh Pham
Grade: 12
Test administration: SAT December 7, 2024
Tested on: Dec 7, 2024
Record Locator: 409986376



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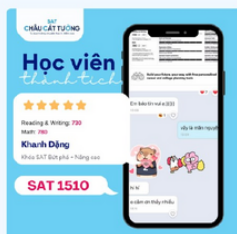
Học viên 8020 – SAT 1550 & 1570 (College Board)

KẾT QUẢ HỌC VIÊN

BẢNG VÀNG HỌC VIÊN

SAT
CHAU CÁT TƯỜNG
Tư vấn hướng nghiệp học & điểm số8020
ENGLISH

Bảng vàng học viên



Bé Khanh Đăng

SAT Bứt phá + Nâng cao Cam kết 140++ => Kết quả 1510



Bé Phan Nguyễn Thảo Nguyễn

SAT Nâng cao



Bé Lê Tâm Anh

SAT Bứt phá + Nâng cao Cam kết 140++ => Bứt phá kết quả 1530

KHÁNH ĐĂNG – SAT 1510

“SAT Bứt phá + Nâng cao cam kết 140++ → 1510”

THẢO NGUYỄN – SAT 1520

“SAT Nâng cao → 1520”

TÂM ANH – SAT 1530

“SAT Bứt phá + Nâng cao cam kết 140++ → 1530”

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

KẾT QUẢ HỌC VIÊN

ĐIỂM SỐ AP

8020
ENGLISH

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

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

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Biological Bases of Behavior

Mục tiêu Unit: Lịch sử hình thành tâm lý học và các trường phái tư tưởng lớn (cấu trúc luận, chức năng luận, phân tâm học, hành vi luận, nhân văn, nhận thức, sinh học, tiến hoá, văn hoá-xã hội) cùng mô hình sinh học-tâm lý-xã hội hiện đại; các phương pháp nghiên cứu (thực nghiệm, mô tả, tương quan) và các khái niệm biến độc lập-biến phụ thuộc, nhóm chứng, phân bố ngẫu nhiên, biến gây nhiễu; thống kê mô tả (trung bình, trung vị, mode, độ lệch chuẩn) và thống kê suy luận (ý nghĩa thống kê, giá trị p); đạo đức nghiên cứu tâm lý học (Hội đồng đạo đức IRB, sự đồng thuận, giải thích sau nghiên cứu); di truyền, môi trường và góc nhìn tiến hoá (nghiên cứu song sinh, khả năng di truyền, biểu sinh học); cấu trúc và chức năng của neuron, quá trình dẫn truyền xung thần kinh và các chất dẫn truyền thần kinh chính; hệ nội tiết và trục hạ đồi-tuyến yên-tuyến thượng thận; tổ chức hệ thần kinh trung ương và ngoại biên; cấu trúc và chức năng các vùng não; các công cụ nghiên cứu não bộ; và các nguyên lý cảm giác-trí giác.

1.1 Foundations of Psychological Science

1.1.1 The Birth of a Science: Structuralism and Functionalism

Psychology is formally defined as the scientific study of behavior and mental processes. Although philosophers speculated about the mind for millennia, psychology did not become an independent, empirical science until **Wilhelm Wundt** opened the first formal psychology laboratory at the University of Leipzig, Germany, in **1879**. Wundt trained assistants to perform **introspection**: a systematic, structured self-report of one's own immediate sensations, feelings, and images in response to a controlled stimulus. His goal was to break conscious experience down into its most basic elements, much as a chemist breaks a compound down into elements.

Wundt's American student **Edward Titchener** carried this program to the United States and named it **structuralism** — the attempt to analyze the mind's structure by identifying its basic building blocks (sensations, images, feelings) through introspection. Structuralism faded quickly because introspection proved unreliable: two trained observers reporting on the same stimulus often gave inconsistent descriptions, and the method could not be used to study animals, children, or complex mental processes like reasoning.

William James, an American influenced by Darwin's theory of evolution, proposed an alternative: **functionalism**, which asked not "what are the mind's elements?" but "why do the mind and behavior work as they do — what adaptive functions do they serve?" James argued that consciousness is a continuous, ever-changing "stream" rather than a fixed set of static elements, and that mental processes exist because they helped our ancestors survive and reproduce. Functionalism's emphasis on the purpose of behavior helped open the door to comparative (animal) research and to applied psychology.

GIẢI THÍCH TIẾNG VIỆT

VN

Wilhelm Wundt mở phòng thí nghiệm tâm lý học đầu tiên tại Đại học Leipzig (Đức) năm **1879**, đánh dấu sự ra đời của tâm lý học như một khoa học thực nghiệm độc lập, tách khỏi triết học. Ông và học trò **Edward Titchener** phát triển **cấu trúc luận (structuralism)** — dùng phương pháp **nội quan (introspection)** để phân tích ý thức thành các thành phần cơ bản nhất. Phương pháp này nhanh chóng bị chỉ trích vì thiếu độ tin cậy (hai người quan sát cùng một kích thích thường báo cáo khác nhau) và không áp dụng được cho động vật hay trẻ nhỏ. **William James** đề xuất

chức năng luận (functionalism), chịu ảnh hưởng từ thuyết tiến hoá của Darwin, tập trung vào *chức năng thích nghi* của tư duy và hành vi thay vì cấu trúc tĩnh của chúng.

1.1.2 The Psychodynamic Perspective

Working in Vienna in the late nineteenth and early twentieth centuries, **Sigmund Freud** proposed that much of human behavior is driven by **unconscious** conflicts, desires, and memories that lie outside conscious awareness – the basis of the **psychodynamic perspective**. Freud famously compared the mind to an iceberg: the small visible tip is conscious awareness, while the much larger submerged mass is the unconscious, containing repressed wishes (many of them sexual or aggressive in nature) that nonetheless shape dreams, slips of the tongue, and psychological symptoms. Freud's method, **psychoanalysis**, used techniques such as free association and dream analysis to bring unconscious material into awareness. While later researchers rejected many of Freud's specific claims for lacking rigorous empirical support, his broader insight – that behavior can be influenced by processes we are not consciously aware of – remains influential and is echoed in modern cognitive research on automatic and implicit processing.

GIẢI THÍCH TIẾNG VIỆT

VN

Sigmund Freud cho rằng phần lớn hành vi con người bị chi phối bởi **vô thức (unconscious)** – những xung đột, ham muốn, và ký ức bị dồn nén nằm ngoài ý thức. Ông ví tâm trí như một tảng băng: phần nổi nhỏ là ý thức, phần chìm lớn hơn nhiều là vô thức. Phương pháp **phân tâm học (psychoanalysis)** dùng liên tưởng tự do và phân tích giấc mơ để khai thác nội dung vô thức. Dù nhiều luận điểm cụ thể của Freud thiếu bằng chứng thực nghiệm vững chắc, ý tưởng cốt lõi rằng hành vi có thể bị chi phối bởi các quá trình ta không ý thức được vẫn còn ảnh hưởng đến tâm lý học hiện đại.

1.1.3 Behaviorism

In direct reaction against the introspective methods of structuralism and the unobservable constructs of psychoanalysis, **John B. Watson** argued in 1913 that psychology should restrict itself entirely to **observable, measurable behavior** and abandon the study of unobservable "mental" events altogether. This school, **behaviorism**, held that behavior is learned through interactions with the environment – Watson's famous (and ethically troubling) "Little Albert" study attempted to demonstrate that even fears could be conditioned in an infant through learned association. **B.F. Skinner** extended behaviorism by demonstrating how consequences – reinforcement and punishment – shape the future frequency of voluntary behavior (operant conditioning, covered in depth in the learning unit). Skinner insisted that internal mental states were unnecessary, and often unknowable, for a scientific account of behavior; what mattered was the observable relationship between stimulus, response, and consequence.

GIẢI THÍCH TIẾNG VIỆT

VN

Chủ nghĩa hành vi (behaviorism), khởi xướng bởi **John B. Watson**, chủ trương tâm lý học chỉ nên nghiên cứu **hành vi quan sát được** và bác bỏ việc nghiên cứu các trạng thái tinh thần không thể đo lường trực tiếp. Watson tin rằng hành vi được hình thành qua học tập từ môi trường. **B.F. Skinner** phát triển thêm khái niệm **điều kiện hoá tạo tác (operant conditioning)** – hành vi tự nguyện được định hình bởi hậu quả của nó (**củng cố** và **trừng phạt**). Trường phái này thống trị tâm lý học Mỹ trong nhiều thập kỷ giữa thế kỷ 20.

1.1.4 Humanistic Psychology

By the mid-twentieth century, many psychologists felt that both psychoanalysis (with its focus on unconscious conflict and pathology) and behaviorism (with its focus on external conditioning) painted

an incomplete, overly mechanistic picture of human nature. **Humanistic psychology**, associated chiefly with **Carl Rogers** and **Abraham Maslow**, emphasized the inherent potential for growth in every person. Rogers proposed that psychological health requires a supportive environment offering genuineness, acceptance, and **unconditional positive regard** — that is, acceptance of a person regardless of what they say or do. Maslow proposed a **hierarchy of needs**, a pyramid running from basic physiological needs (food, water, sleep) up through safety, love/belonging, and esteem, to **self-actualization** — the ongoing fulfillment of one's full potential — arguing that lower needs generally must be reasonably satisfied before higher ones become motivating.

GIẢI THÍCH TIẾNG VIỆT

VN

Tâm lý học nhân văn (humanistic psychology), với đại diện là **Carl Rogers** và **Abraham Maslow**, nhấn mạnh tiềm năng phát triển tích cực vốn có trong mỗi con người, đối lập với cái nhìn "máy móc" của phân tâm học và hành vi luận. Rogers đề xuất khái niệm **sự chấp nhận vô điều kiện (unconditional positive regard)** để phát triển tâm lý lành mạnh. Maslow xây dựng **tháp nhu cầu (hierarchy of needs)**, từ nhu cầu sinh lý cơ bản đến **tự hiện thực hoá (self-actualization)** — trạng thái phát huy tối đa tiềm năng bản thân.

1.1.5 The Cognitive Revolution and the Biological Perspective

Beginning in the 1950s and 1960s, dissatisfaction with behaviorism's refusal to study internal mental events — combined with new metaphors from computer science and information theory — sparked the **cognitive revolution**. Cognitive psychologists study mental processes directly: how people perceive, remember, reason, solve problems, and use language, often modeling the mind as an information-processing system. Around the same time, the **biological (neuroscience) perspective** matured alongside advances in brain-imaging technology (covered later in this unit), linking thoughts, emotions, and behaviors to underlying processes in the nervous system and endocrine system — genes, neurotransmitters, brain structures, and hormones.

GIẢI THÍCH TIẾNG VIỆT

VN

Cuộc cách mạng nhận thức (cognitive revolution) vào giữa thế kỷ 20 đưa các quá trình tinh thần (trí nhớ, tư duy, ngôn ngữ, giải quyết vấn đề) trở lại thành đối tượng nghiên cứu chính thức, thường mô hình hoá tâm trí như một hệ thống **xử lý thông tin** tương tự máy tính. Song song đó, **góc nhìn sinh học (biological perspective)** phát triển nhờ tiến bộ công nghệ chụp ảnh não, liên kết suy nghĩ và cảm xúc với hoạt động của **hệ thần kinh** và **hệ nội tiết**.

1.1.6 Evolutionary and Sociocultural Perspectives

The **evolutionary perspective** applies Darwin's principle of natural selection to psychology, proposing that many universal patterns of human behavior and cognition (such as fear of snakes and heights, or patterns of mate preference) evolved because they enhanced the survival and reproductive success of our ancestors. The **sociocultural perspective** instead emphasizes how behavior, values, and even basic cognitive processes vary systematically across cultures and social contexts — for example, the degree to which a culture emphasizes individual achievement (individualism) versus group harmony (collectivism) shapes everything from self-concept to moral reasoning.

GIẢI THÍCH TIẾNG VIỆT

VN

Góc nhìn tiến hoá (evolutionary perspective) áp dụng nguyên lý **chọn lọc tự nhiên** của Darwin để giải thích các khuôn mẫu hành vi phổ quát ở loài người (ví dụ nỗi sợ rắn, sợ độ cao) là kết quả của quá trình thích nghi tiến hoá. **Góc nhìn văn hoá-xã hội (sociocultural perspective)** nhấn mạnh sự khác biệt hành vi và nhận thức giữa các nền văn hoá, ví dụ sự khác biệt giữa văn hoá **cá nhân chủ nghĩa** (đề cao thành tựu cá nhân) và văn hoá **tập thể chủ nghĩa** (đề cao sự hài hoà nhóm).

1.1.7 The Biopsychosocial Model

Contemporary psychology rarely relies on a single perspective to fully explain any behavior. The **biopsychosocial model** integrates three broad levels of analysis — **biological** influences (genes, brain chemistry, hormones), **psychological** influences (learned associations, thought patterns, emotions, motivation), and **social-cultural** influences (family, community, cultural norms, situational context) — treating them as interacting contributors to any given behavior or mental process rather than competing, mutually exclusive explanations.

Seven perspectives at a glance

- **Psychodynamic** — unconscious conflicts and early experience (Freud)
- **Behavioral** — learned associations between stimuli, responses, and consequences (Watson, Skinner)
- **Humanistic** — inherent growth potential, self-actualization (Rogers, Maslow)
- **Cognitive** — mental information processing (perception, memory, reasoning)
- **Biological/neuroscience** — brain, genes, neurotransmitters, hormones
- **Evolutionary** — adaptive value shaped by natural selection
- **Sociocultural** — influence of culture, community, and social context

Ví dụ mẫu · Explaining one behavior through multiple perspectives

A teenager becomes extremely anxious before public speaking. Explain this single behavior through (a) the biological, (b) the behavioral, and (c) the sociocultural perspective.

(a) Biological: an overactive amygdala and elevated cortisol/epinephrine release (the body's stress response, covered later in this unit) may produce the physical sensations of anxiety before and during the speech. **(b) Behavioral:** the student may have learned this anxiety through a past negative experience (e.g., being laughed at during a class presentation), which became associated with public speaking through classical conditioning. **(c) Sociocultural:** a culture or family that places high value on public performance and social evaluation may amplify the perceived stakes of the speech, increasing anxiety. None of these explanations is complete alone — together, consistent with the **biopsychosocial model**, they give a fuller account than any single perspective.

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Mô hình sinh học-tâm lý-xã hội (biopsychosocial model) là khung lý thuyết hiện đại, tích hợp ba nhóm yếu tố: **sinh học** (gene, hoá chất não, hormone), **tâm lý** (liên tưởng đã học, kiểu tư duy, cảm xúc), và **xã hội-văn hoá** (gia đình, cộng đồng, chuẩn mực văn hoá) để giải thích một hành vi. Đây không phải là việc chọn "trường phái nào đúng nhất" mà là nhìn nhận các góc nhìn như những lát cắt *bổ sung* cho nhau.



A brief timeline of major milestones in the history of psychology, from the founding of the first laboratory to the maturation of the modern neuroscience perspective.

(!) **Lỗi thường gặp:** Học sinh thường nghĩ các trường phái tâm lý học (hành vi luận, phân tâm học, nhận thức...) *loại trừ lẫn nhau* — chỉ có một trường phái là "đúng". Trên thực tế, đề thi AP Psychology thường yêu cầu học sinh áp dụng *nhiều* góc nhìn cùng lúc để giải thích một hành vi (xem mô hình sinh học–tâm lý–xã hội ở trên). Ngoài ra, đừng nhầm **cấu trúc luận** (structuralism — nghiên cứu *thành phần* của ý thức bằng nội quan) với **chức năng luận** (functionalism — nghiên cứu *chức năng thích nghi* của ý thức và hành vi).

1.2 Research Methods

1.2.1 The Experimental Method

Only a true **experiment** can establish a cause-and-effect relationship, because it is the only method in which a researcher actively manipulates one variable while holding others constant. The **independent variable (IV)** is the factor the experimenter deliberately manipulates; the **dependent variable (DV)** is the outcome measured to see whether it was affected by the IV. To make a study replicable and its results interpretable, researchers give every variable an **operational definition** — a precise statement of exactly how the variable will be manipulated or measured (e.g., not just "sleep deprivation" but "restricted to 4 hours of sleep, verified by actigraphy watch, for one night").

Participants are typically divided into an **experimental group**, which receives the treatment or manipulation of interest, and a **control group**, which does not (or receives a neutral/comparison treatment) — the control group provides the baseline against which the experimental group's outcome is compared. The single most important safeguard in experimental design is **random assignment**: using a chance procedure to place participants into groups so that, on average, the groups are equivalent on every characteristic (age, motivation, prior experience, etc.) except for the manipulation itself. Without random assignment, groups might differ systematically for reasons unrelated to the IV — a **confounding variable**, any factor other than the IV that could plausibly explain the difference in the DV, threatening the validity of the causal conclusion.

Several additional safeguards address expectation effects. The **placebo effect** occurs when participants' expectations about a treatment alone produce a real change in the DV, even though they did not receive the actual treatment (e.g., an inert sugar pill that reduces reported pain because the participant believes they took a painkiller). A **single-blind** procedure keeps participants unaware of which condition they are in (experimental vs. placebo/control), controlling for placebo effects; a **double-blind** procedure keeps *both* the participants *and* the researchers who interact with them unaware of group assignment, which additionally controls for **experimenter bias** — the unconscious tendency of a researcher who knows the hypothesis to treat groups differently or to interpret ambiguous results in the expected direction.

Random assignment (into groups, within a study) equalizes groups and supports **internal validity** (confidence in cause-and-effect). **Random sampling** (selecting participants from a population, before a study begins) supports **external validity** (generalizability of results to the broader population). The two procedures serve different purposes and a study can have one without the other.

Ví dụ mẫu · Writing a strong operational definition

A researcher wants to study whether "stress" affects "aggression" in adolescents. Explain why these terms, as written, are not yet usable in an experiment, and propose one specific operational definition for each.

As written, "stress" and "aggression" are vague, abstract concepts that could be measured or manipulated in many different, non-equivalent ways — without a precise operational definition, another researcher could not replicate the study, and it would be unclear exactly what

was tested. A workable **operational definition of stress (IV)** might be: "exposure to a standardized, unsolvable anagram puzzle task for 5 minutes under a strict time limit, versus a solvable control puzzle with no time pressure." A workable **operational definition of aggression (DV)** might be: "the number of points allocated to a supposed opponent on a punishment-intensity dial in a lab-based competitive reaction-time game, immediately after the stress manipulation." Both definitions specify *exactly* how the variable will be created or measured, which is what makes the study replicable and its results interpretable.

Ví dụ mẫu · Identifying IV, DV, and a confound

A researcher wants to test whether listening to music while studying improves test performance. Two groups of students study the same material for 30 minutes: Group A studies in silence; Group B studies while listening to music through headphones. Group B is tested in a quieter room than Group A, and afterward Group B scores higher on a test of the material.

Independent variable: whether music is played while studying (present vs. absent). **Dependent variable:** test score on the studied material. **Confounding variable:** testing room quietness — because Group B was also tested in a quieter room, the researcher cannot tell whether the higher score is due to the music, the quieter testing room, or both. To fix this, both groups should be tested under identical room conditions, with only the music manipulation differing, and participants should be **randomly assigned** to Group A or Group B rather than self-selecting.

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Trong một **thí nghiệm (experiment)**, nhà nghiên cứu chủ động thao túng **biến độc lập (independent variable — IV)** để đo lường ảnh hưởng lên **biến phụ thuộc (dependent variable — DV)**. **Nhóm thực nghiệm** nhận tác động cần nghiên cứu, **nhóm chứng (control group)** không nhận, làm cơ sở so sánh. **Phân bổ ngẫu nhiên (random assignment)** đảm bảo hai nhóm tương đương nhau ở mọi mặt trừ biến độc lập, loại trừ **biến gây nhiễu (confounding variable)** — bất kỳ yếu tố nào khác ngoài IV có thể giải thích sự khác biệt ở DV. **Hiệu ứng giả dược (placebo effect)** xảy ra khi niềm tin của người tham gia (chứ không phải bản thân phương pháp điều trị) tạo ra thay đổi thực sự; thiết kế **mù đơn** che giấu thông tin nhóm với người tham gia, **mù đôi** che giấu với cả người tham gia lẫn người thực hiện thí nghiệm, nhằm loại trừ cả hiệu ứng giả dược lẫn **thiên kiến của người thực nghiệm (experimenter bias)**.

(!) Lỗi thường gặp: Học sinh thường viết "biến độc lập là điều nhà nghiên cứu *đo*" — sai. Biến độc lập là điều nhà nghiên cứu **thao túng/thay đổi** (nguyên nhân giả định); biến phụ thuộc mới là điều được **đo lường** (kết quả/hiệu ứng). Mẹo ghi nhớ: DV "phụ thuộc" (depends) vào IV, nên DV luôn nằm ở vị trí **kết quả** trong câu hỏi nghiên cứu.

1.2.2 Descriptive Research Methods

When manipulating a variable is unethical or impractical, researchers turn to **descriptive methods**, which observe and record behavior without manipulating any variable — useful for generating hypotheses and describing phenomena, but incapable of establishing causation.

Descriptive methods

- **Case study** — an in-depth investigation of one individual or small group (e.g., a rare brain-damage patient). Rich in detail but not generalizable and prone to researcher subjectivity.

- **Naturalistic observation** — observing and recording behavior in its natural setting without interference. High in ecological validity (behavior is authentic) but the researcher cannot control extraneous variables, and the presence of an observer can itself alter behavior (observer effect).
- **Survey method** — asking a sample of people to self-report attitudes or behaviors, usually through questionnaires or interviews. Efficient for gathering data from many people, but vulnerable to **social desirability bias** (respondents answer in ways that make them look favorable rather than truthfully) and to **wording effects** (subtle changes in question phrasing can substantially shift responses).

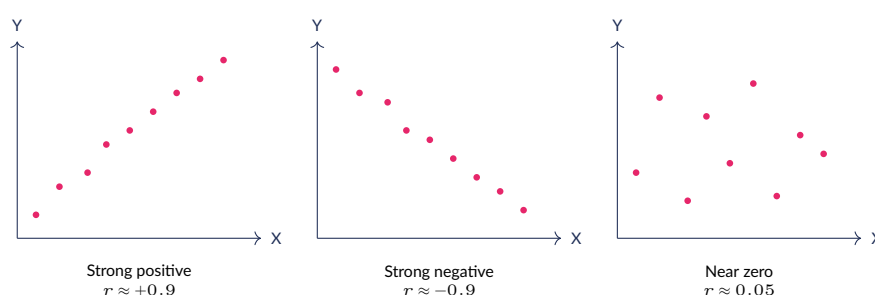
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Ba phương pháp mô tả (descriptive) chính: **nghiên cứu trường hợp (case study)** — phân tích sâu một cá nhân/nhóm nhỏ, giàu chi tiết nhưng khó khái quát hoá; **quan sát tự nhiên (naturalistic observation)** — quan sát hành vi trong môi trường thật, không can thiệp, nhưng không kiểm soát được các yếu tố gây nhiễu và sự hiện diện của người quan sát có thể làm thay đổi hành vi; **phương pháp khảo sát (survey)** — thu thập báo cáo tự thuật từ một mẫu lớn, dễ bị ảnh hưởng bởi **thiên kiến mong muốn xã hội (social desirability bias)** (người trả lời có xu hướng trả lời sao cho "đẹp mặt") và **hiệu ứng cách diễn đạt câu hỏi (wording effects)**.

1.2.3 Correlational Research

Correlational research measures the relationship between two naturally occurring variables without manipulating either one. The strength and direction of this relationship is summarized by the **correlation coefficient** (r), which ranges from -1.00 to $+1.00$. A **positive correlation** ($r > 0$) means the two variables tend to rise and fall together; a **negative correlation** ($r < 0$) means one variable tends to rise as the other falls. The closer $|r|$ is to 1.00 , the stronger (more consistent) the relationship; an r near 0 indicates little to no linear relationship. Correlations are typically visualized with a **scatterplot**, where each point represents one participant's score on both variables.



Scatterplots illustrating a strong positive correlation, a strong negative correlation, and a near-zero correlation. The tighter the points cluster around a line, the larger $|r|$.

Correlational research can never, by itself, establish that one variable causes another — a principle summarized as **"correlation does not imply causation."** This is because of the **third-variable problem**: some unmeasured factor may independently influence both variables, creating a correlation between them without either causing the other.

Ví dụ mẫu · The third-variable problem

Across cities, ice cream sales and rates of drowning are positively correlated. Does eating ice cream cause drowning? Identify a plausible third variable.

No — this is a classic illustration of the third-variable problem. A plausible third variable is **out-**

door temperature/season: hot weather independently increases both ice cream sales (people buy more ice cream when it's hot) and swimming activity (more people swim when it's hot, which increases drowning risk). Temperature is a **confound** for any causal claim linking ice cream directly to drowning; the correlation is real, but neither variable causes the other.

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Hệ số tương quan (correlation coefficient, r) nằm trong khoảng -1.00 đến $+1.00$, thể hiện độ mạnh và chiều hướng của mối liên hệ giữa hai biến (không thao túng biến nào). r dương: hai biến cùng tăng/giảm; r âm: biến này tăng thì biến kia giảm; $|r|$ càng gần 1 thì mối liên hệ càng chặt chẽ. Nguyên tắc quan trọng nhất: **"tương quan không đồng nghĩa với nhân quả"** — luôn có khả năng tồn tại **biến thứ ba (third variable)** tác động độc lập lên cả hai biến được đo, tạo ra tương quan giả mà không có quan hệ nhân quả trực tiếp nào.

(!) Lỗi thường gặp: Nhiều học sinh nghĩ hệ số tương quan $r = -0.85$ là "yếu" vì có dấu âm. Sai — **dấu** của r chỉ cho biết *chiều* của mối quan hệ (âm hay dương), còn **độ mạnh** của mối quan hệ chỉ phụ thuộc vào *giá trị tuyệt đối* $|r|$. Do đó $r = -0.85$ là một tương quan *mạnh* (âm), mạnh hơn $r = +0.40$ dù dấu khác nhau.

1.2.4 Sampling and Research Design

A **population** is the entire group a researcher wants to draw conclusions about; a **sample** is the subset of that population actually studied. Because studying an entire population is rarely feasible, researchers rely on samples — but a sample is only useful for drawing conclusions about the population if it is representative. **Random sampling**, in which every member of the population has an equal chance of being selected, is the best safeguard for **generalizability** (external validity): the extent to which findings from the sample can be extended to the broader population. A refinement, **stratified random sampling**, first divides the population into meaningful subgroups (strata) — such as age groups or genders — and then randomly samples within each subgroup in proportion to its size in the population, helping ensure that important subgroups are not over- or under-represented purely by chance, which plain random sampling can occasionally produce with smaller samples. Non-random (convenience) samples risk **sampling bias**, in which the sample systematically differs from the population in ways that distort the results.

Two common forms of **sampling bias** illustrate why a sample can fail to represent its population even when it is large: a **convenience sample** draws only from whoever is easiest to reach (e.g., surveying only students in one introductory psychology class about a topic meant to generalize to "all adults"), and a **voluntary response sample** draws only from people who choose to opt in (e.g., an online poll), who often differ systematically in motivation or opinion strength from those who do not bother to respond. Neither problem is fixed simply by collecting more data from the same biased source.

(!) Lỗi thường gặp: Một ngộ nhận phổ biến: "mẫu nghiên cứu lớn thì luôn đáng tin cậy hơn mẫu nhỏ." Kích thước mẫu lớn chỉ giúp giảm *sai số ngẫu nhiên (random error)*, nhưng **không sửa được thiên kiến hệ thống** nếu cách chọn mẫu ban đầu không ngẫu nhiên — ví dụ khảo sát 1 triệu người nhưng chỉ từ một nhóm tự nguyện tham gia trực tuyến (**voluntary response sample**) vẫn có thể cho kết quả sai lệch nghiêm trọng so với toàn bộ quần thể, vì đặc điểm của người *tự chọn* tham gia khảo sát thường khác biệt hệ thống so với người không tham gia — cỡ mẫu càng lớn chỉ khiến người đọc *tin tưởng sai* vào một kết luận vẫn bị thiên kiến.

Researchers studying change over time choose between two designs. A **longitudinal design** follows the same group of individuals repeatedly over an extended period, directly tracking how indi-

viduals change with age or time — but it is time-consuming, expensive, and vulnerable to participant dropout (attrition). A **cross-sectional design** compares different groups of individuals (e.g., different age groups) all at one point in time — faster and cheaper, but any differences found between groups could reflect generational (cohort) differences rather than true developmental change.

Method	Strength	Limitation
Experiment	Only method that establishes cause and effect	Artificial lab settings may lack real-world (ecological) validity
Case study	Rich, detailed data on rare phenomena	Not generalizable; researcher subjectivity
Naturalistic observation	High ecological validity; authentic behavior	No control over variables; observer effect
Survey	Efficient data from large samples	Social desirability bias; wording effects
Correlational study	Can study variables that cannot be manipulated ethically	Cannot establish causation; third-variable problem
Longitudinal design	Tracks true individual change over time	Costly, slow, attrition
Cross-sectional design	Fast, inexpensive	Cohort effects may be mistaken for developmental change

Ví dụ mẫu · Choosing between longitudinal and cross-sectional design

A researcher wants to study whether working memory capacity declines with age. Design A tests the same 100 participants at ages 30, 50, and 70. Design B simultaneously tests three different groups of 100 participants who are currently 30, 50, and 70 years old. Identify each design and one limitation of each.

Design A is a **longitudinal design**: it follows the same individuals across time, so any change observed reflects true individual aging rather than group differences — but it takes 40 years to complete and risks losing participants to attrition (death, relocation, dropout), which can also bias the remaining sample toward healthier individuals. Design B is a **cross-sectional design**: it is completed quickly, but any difference found between the 30-, 50-, and 70-year-old groups could reflect **cohort effects** (e.g., generational differences in education or technology exposure) rather than true age-related decline.

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Quần thể (population) là toàn bộ nhóm nghiên cứu muốn khái quát hoá kết luận; **mẫu (sample)** là nhóm nhỏ hơn thực sự được nghiên cứu. **Lấy mẫu ngẫu nhiên (random sampling)** — mỗi thành viên trong quần thể có cơ hội được chọn như nhau — giúp đảm bảo **khả năng khái quát hoá (generalizability)**. **Thiết kế dọc (longitudinal)** theo dõi cùng một nhóm người theo thời gian (chính xác hơn nhưng tốn kém, dễ mất người tham gia); **thiết kế ngang (cross-sectional)** so sánh các nhóm tuổi khác nhau tại cùng một thời điểm (nhanh hơn nhưng dễ nhầm lẫn giữa khác biệt thế hệ và sự phát triển thực sự theo tuổi).

1.3 Statistical Analysis

1.3.1 Descriptive Statistics

Descriptive statistics summarize and organize a data set without drawing conclusions beyond that data. **Measures of central tendency** identify a single value representative of the whole distribution: the **mean** is the arithmetic average (sum of scores divided by the number of scores); the **median** is the middle score when values are ordered from lowest to highest (or the average of the two middle

scores for an even-numbered data set); the **mode** is the most frequently occurring score. The mean is sensitive to extreme scores (outliers); the median is not, which is why the median is often reported for skewed data such as income.

Measures of variability describe how spread out scores are: the **range** is the difference between the highest and lowest scores (simple but sensitive to a single outlier); the **standard deviation** is a more informative measure of the typical distance of scores from the mean.

For a data set of n scores with mean $\bar{x}$, the standard deviation is

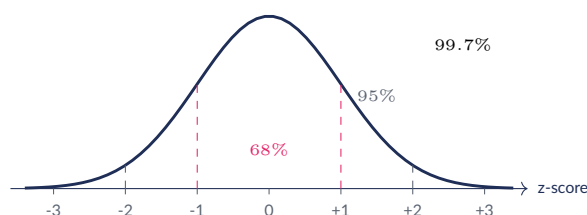
$$s = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}$$

Steps: (1) find the mean; (2) find each score's deviation from the mean; (3) square each deviation; (4) average the squared deviations; (5) take the square root. A small s means scores cluster tightly around the mean; a large s means scores are widely spread.

In a **normal distribution** (bell curve), scores are distributed symmetrically around the mean, with the mean, median, and mode all equal and located at the center. Many psychological traits (e.g., IQ scores) approximate a normal distribution. A **skewed distribution** is asymmetrical: in a **positively skewed** distribution, a few unusually high scores pull the mean above the median (tail points toward higher values); in a **negatively skewed** distribution, a few unusually low scores pull the mean below the median (tail points toward lower values).

A **z-score** expresses how many standard deviations a particular score lies above or below the mean ($z = \frac{x - \bar{x}}{s}$), allowing scores from different distributions to be compared on a common scale. In a normal distribution specifically, z-scores correspond to predictable, fixed percentages of scores – summarized by the **empirical rule (68–95–99.7 rule)**: approximately 68% of scores fall within 1 standard deviation of the mean, approximately 95% fall within 2 standard deviations, and approximately 99.7% fall within 3 standard deviations.

Empirical rule for a normal distribution: about 68% of scores lie within $z = \pm 1$; about 95% lie within $z = \pm 2$; about 99.7% lie within $z = \pm 3$. A score with $|z| > 2$ is therefore relatively unusual (roughly in the most extreme 5% combined across both tails).



The empirical (68–95–99.7) rule: the percentage of scores falling within 1, 2, and 3 standard deviations of the mean in a normal distribution.

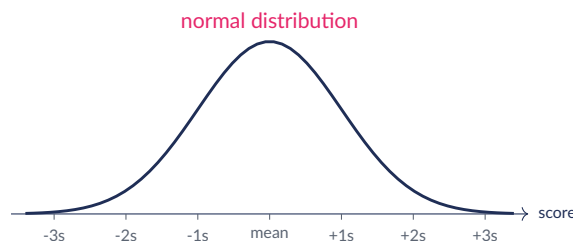
Ví dụ mẫu · Interpreting a z-score

A standardized test has a mean of 500 and a standard deviation of 100, and scores are approximately normally distributed. A student scores 680. Calculate the student's z-score and interpret it using the empirical rule.

$$z = \frac{x - \bar{x}}{s} = \frac{680 - 500}{100} = \frac{180}{100} = 1.8.$$

A z-score of 1.8 means the student scored 1.8 standard deviations above the mean. Because 95% of scores fall within $z = \pm 2$ in a normal distribution, and 1.8 is just inside that range, this

student's score is quite high — within roughly the top few percent of test-takers — but not so extreme as to fall in the rarest tail beyond $z = \pm 2$.



A normal (bell-shaped) distribution: symmetrical around the mean, with mean = median = mode at the center.

Ví dụ mẫu · Computing the mean and standard deviation

Seven students' quiz scores (out of 10) are: 6, 7, 7, 8, 8, 9, 9. Compute the mean and the standard deviation.

Mean: $\bar{x} = \frac{6 + 7 + 7 + 8 + 8 + 9 + 9}{7} = \frac{54}{7} \approx 7.71$.

Deviations and squared deviations (rounded): $(6 - 7.71)^2 \approx 2.93$; $(7 - 7.71)^2 \approx 0.51$ (twice); $(8 - 7.71)^2 \approx 0.08$ (twice); $(9 - 7.71)^2 \approx 1.66$ (twice).

Sum of squared deviations $\approx 2.93 + 0.51 + 0.51 + 0.08 + 0.08 + 1.66 + 1.66 = 7.43$.

$$s = \sqrt{\frac{7.43}{7}} \approx \sqrt{1.06} \approx 1.03.$$

The typical quiz score deviates from the mean (7.71) by about 1.03 points — a fairly tight cluster, consistent with the small range (6 to 9) in this data set.

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Trung bình (mean): tổng các giá trị chia cho số lượng; **trung vị (median):** giá trị nằm giữa khi sắp xếp thứ tự; **mode:** giá trị xuất hiện nhiều nhất. Trung bình nhạy cảm với giá trị ngoại lai (outlier), trung vị thì không — vì vậy dữ liệu bị **lệch (skewed)** thường được báo cáo bằng trung vị. **Độ lệch chuẩn (standard deviation)** đo mức độ phân tán trung bình của các điểm dữ liệu quanh trung bình: độ lệch chuẩn nhỏ nghĩa là dữ liệu tập trung sát trung bình, độ lệch chuẩn lớn nghĩa là dữ liệu phân tán rộng. **Điểm z (z-score)** cho biết một giá trị cách trung bình bao nhiêu độ lệch chuẩn, giúp so sánh điểm số từ các thang đo khác nhau.

(!) Lỗi thường gặp: Đừng nhầm giữa phân bố **lệch dương (positively skewed)** và **lệch âm (negatively skewed)**. Tên gọi dựa vào hướng của *đuôi* phân bố, không phải nơi tập trung đa số dữ liệu: lệch dương có đuôi dài về phía *giá trị cao* (ví dụ phân bố thu nhập — đa số thu nhập thấp/trung bình, một số ít cực cao kéo đuôi sang phải), khiến trung bình > trung vị; lệch âm có đuôi dài về phía *giá trị thấp*, khiến trung bình < trung vị.

1.3.2 Inferential Statistics

While descriptive statistics summarize a sample, **inferential statistics** allow researchers to draw conclusions about whether a pattern observed in a sample likely reflects a real effect in the population, or could plausibly have occurred by chance alone. A result is described as **statistically significant**

when it is unlikely to have occurred simply due to random variation. By strong convention in psychology, a result is treated as statistically significant when the **p-value** is less than .05 (written $p < .05$) — meaning there is less than a 5% probability of observing a difference this large (or larger) if there were truly no effect in the population. A smaller p-value provides stronger evidence against chance as the explanation for the finding — but statistical significance alone does not indicate how large or practically meaningful an effect is.

Effect size addresses that gap by quantifying the actual magnitude of a difference or relationship, independent of sample size. A study with a very large sample can detect a statistically significant ($p < .05$) effect that is nevertheless tiny and of little practical importance, while a small study might fail to reach significance despite a meaningful effect size, simply because it lacks the statistical power to detect it reliably. Reporting effect size alongside significance gives a fuller picture of how much a manipulation or relationship actually matters in practice.

Ví dụ mẫu · Interpreting significance and effect size together

Study 1 ($n = 10,000$) finds that a new studying app improves test scores by 0.5 points on a 100-point test, $p < .01$. Study 2 ($n = 40$) finds that a different studying technique improves test scores by 12 points on the same test, $p = .07$. Which study provides stronger practical evidence that its intervention is worth adopting?

Study 1 is statistically significant, but with such a massive sample size, even a trivially small, practically meaningless difference (0.5 points) can reach $p < .01$ — the **effect size** here is negligible. Study 2 did not reach the conventional $p < .05$ threshold, likely because its small sample size ($n = 40$) gave it limited statistical power to detect an effect reliably — but the observed **effect size** (a 12-point gain) is much larger and would be practically meaningful if replicated with a larger, adequately powered sample. Neither study alone is conclusive; this illustrates why psychologists examine effect size and consider replication, not p-values in isolation.

Because inferential conclusions are based on probability rather than certainty, two types of mistaken conclusions are possible. A **Type I error** occurs when a researcher concludes there is a real effect when, in truth, there is none (a "false positive") — the conventional $p < .05$ threshold means researchers accept up to a 5% risk of this happening by chance. A **Type II error** occurs when a researcher concludes there is no real effect when, in truth, there actually is one (a "false negative") — often because the study lacked sufficient statistical power (e.g., too small a sample) to detect a real but modest-sized effect.

GIẢI THÍCH TIẾNG VIỆT

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Sai lầm loại I (Type I error): kết luận có hiệu ứng thật khi thực ra không có (dương tính giả) — quy ước $p < .05$ nghĩa là chấp nhận tối đa 5% rủi ro mắc sai lầm này do ngẫu nhiên. **Sai lầm loại II (Type II error):** kết luận không có hiệu ứng khi thực ra có (âm tính giả) — thường do mẫu nghiên cứu quá nhỏ, thiếu năng lực thống kê (statistical power) để phát hiện một hiệu ứng thật nhưng không quá lớn.

GIẢI THÍCH TIẾNG VIỆT

VN

Ý nghĩa thống kê (statistical significance) cho biết một kết quả có khả năng do ngẫu nhiên tạo ra hay không; theo quy ước, kết quả được coi là có ý nghĩa thống kê khi giá trị p (p-value) nhỏ hơn .05 ($p < .05$) — nghĩa là dưới 5% khả năng kết quả này xảy ra do ngẫu nhiên nếu thực sự không có hiệu ứng nào. Tuy nhiên, ý nghĩa thống kê không đồng nghĩa với việc hiệu ứng đó lớn hay quan trọng trong thực tế — độ lớn hiệu ứng (effect size) mới đo lường mức độ ảnh hưởng thực sự, độc lập với kích thước mẫu. Mẫu càng lớn thì càng dễ đạt ý nghĩa thống kê dù hiệu ứng rất nhỏ.

1.4 Ethics in Psychological Research

1.4.1 Guidelines for Research with Human Participants

Because psychological research sometimes involves sensitive topics, deception, or the possibility of psychological discomfort, the **American Psychological Association (APA)** publishes ethical guidelines that govern how research must be designed and conducted. Before any study involving human participants begins at an accredited institution, it must be reviewed and approved by an **Institutional Review Board (IRB)** — a committee that evaluates whether the anticipated benefits of the research justify its risks, and whether adequate protections for participants are in place.

The APA's broader ethics code also articulates five aspirational general principles guiding all psychological practice and research: **beneficence and non-maleficence** (maximize benefit, minimize harm), **fidelity and responsibility** (maintain trust and professional responsibility toward participants and society), **integrity** (accuracy and honesty in research and reporting), **justice** (fair and equitable treatment and access), and **respect for people's rights and dignity** (including privacy and self-determination). The specific procedural safeguards below translate these broad principles into concrete practice.

Core ethical protections for human participants

- **Informed consent** — before participating, individuals must be told enough about the study's general nature and any foreseeable risks to decide voluntarily whether to take part.
- **Right to withdraw** — participants may leave the study at any time without penalty, even after agreeing to take part.
- **Protection from harm** — researchers must minimize physical and psychological risk; any risk must be justified by the study's potential scientific or societal benefit.
- **Confidentiality** — individual participants' data and identities must be protected from unauthorized disclosure.
- **Debriefing** — after participation (especially after any deception), researchers must explain the study's true purpose, correct any misconceptions, and address any distress caused.

Deception — withholding the full truth about a study's purpose, or providing false information — is only permitted when three conditions are met: no reasonable alternative non-deceptive method could answer the research question, the deception does not involve concealing information that would affect a participant's willingness to take part in a way that increases risk, and thorough debriefing is provided immediately afterward. IRBs weigh the scientific value of a deceptive design against the risk of participant distress or mistrust before approving it.

Ví dụ mẫu · Evaluating an ethics scenario

A researcher tells participants they are completing a "memory test," but the true purpose is to measure how stress affects short-term memory. Halfway through, a loud alarm suddenly sounds (unannounced) to induce a stress response, and the researcher records participants' subsequent memory performance. No debriefing is provided afterward because the researcher worries it would "ruin" future participants' naivety if word spread. Identify the ethical violation(s).

The mild deception about the study's true purpose (measuring stress effects rather than "memory" alone) is a common and often justifiable research technique *if* paired with debriefing — but here, the researcher has **failed to debrief** participants, which is a clear ethical violation: participants were startled by an unannounced loud alarm (a potential source of psychological distress) and never informed of the study's real purpose or given a chance to ask questions

or have any distress addressed. Concern about "ruining" future participants' naivety does not override the ethical obligation to debrief; researchers can request participants keep study details confidential instead. A secondary concern worth flagging is whether the unannounced alarm constitutes more than minimal psychological **risk of harm**, which the IRB should have specifically evaluated before approving the design.

Ví dụ mẫu · IRB risk-benefit reasoning

A researcher proposes a study inducing brief, mild social embarrassment (via a rigged group task) to study how embarrassment affects subsequent decision-making, with full debriefing planned immediately afterward. A second researcher proposes a similar design but inducing intense, prolonged psychological distress with no debriefing, to study "genuine" long-term reactions without participants suspecting they were being studied. Explain how an IRB would likely evaluate each proposal differently.

The IRB evaluates research by weighing potential scientific/societal **benefit** against potential participant **risk of harm**, alongside whether adequate protections are in place. The first proposal involves only *mild, brief* distress, with a clear scientific rationale and, importantly, a plan for **debriefing** to address any lingering discomfort — a risk profile an IRB would likely judge as acceptable and justified by the research value. The second proposal involves *intense, prolonged* distress with **no debriefing planned at all** — violating both **protection from harm** (the severity and duration of distress appear disproportionate to the scientific justification given) and the ethical obligation to debrief, especially since deception was involved. An IRB would very likely reject the second proposal as designed, requiring the researcher to substantially reduce the intensity/duration of the induced distress and add a thorough debriefing procedure before any approval could be considered.

GIẢI THÍCH TIẾNG VIỆT

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Trước khi tiến hành nghiên cứu trên người, đề xuất phải được **Hội đồng đạo đức (Institutional Review Board – IRB)** xét duyệt. Các nguyên tắc đạo đức cốt lõi gồm: **sự đồng thuận có hiểu biết (informed consent)** — người tham gia được thông báo đầy đủ trước khi đồng ý; **quyền rút lui (right to withdraw)** bất cứ lúc nào; **bảo vệ khỏi tổn hại (protection from harm)**; **bảo mật thông tin (confidentiality)**; và **giải thích sau nghiên cứu (debriefing)** — đặc biệt bắt buộc nếu có sử dụng **lừa dối/che giấu thông tin (deception)**, vốn chỉ được phép khi không có cách nào khác để trả lời câu hỏi nghiên cứu.

1.4.2 Guidelines for Research with Animal Subjects

Animal research remains important in psychology, particularly for questions that cannot ethically be studied in humans (such as certain drug effects or invasive brain studies). Animal research is governed by its own oversight committee, the **Institutional Animal Care and Use Committee (IACUC)**, and by the principle of the **3 Rs: Replacement** (using non-animal methods whenever possible), **Reduction** (using the minimum number of animals necessary to answer the question), and **Refinement** (modifying procedures to minimize pain and distress).

GIẢI THÍCH TIẾNG VIỆT

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Nghiên cứu trên động vật được giám sát bởi **IACUC** và tuân theo nguyên tắc **3R: Replacement** (thay thế bằng phương pháp không dùng động vật khi có thể), **Reduction** (giảm thiểu số lượng động vật sử dụng), **Refinement** (cải tiến quy trình để giảm đau đớn/căng thẳng cho động vật). Nghiên cứu động vật vẫn quan trọng vì cho phép trả lời những câu hỏi không thể thực hiện

đạo đức trên người.

(!) Lỗi thường gặp: Học sinh thường nghĩ **sự đồng thuận có hiểu biết (informed consent)** và **giải thích sau nghiên cứu (debriefing)** là cùng một bước — sai. Informed consent diễn ra *trước* khi nghiên cứu bắt đầu (người tham gia đồng ý dựa trên thông tin tổng quát); debriefing diễn ra *sau* khi nghiên cứu kết thúc (giải thích đầy đủ mục đích thật, đặc biệt quan trọng nếu có sử dụng lừa dối). Một nghiên cứu có lừa dối vẫn có thể đạo đức nếu debriefing được thực hiện đầy đủ và kịp thời.

1.5 Heredity, Environment, and the Evolutionary Perspective

1.5.1 Genes, Chromosomes, and DNA

The instructions for building and operating the body — including the nervous system — are encoded in **deoxyribonucleic acid (DNA)**, a molecule organized into structures called **chromosomes**. Humans typically carry 23 pairs of chromosomes in the nucleus of nearly every cell — one member of each pair inherited from each biological parent. Segments of DNA that code for specific proteins are called **genes**; genes influence behavior indirectly, by guiding the development and functioning of the nervous system and endocrine system, rather than by directly “causing” any complex behavior on their own. Virtually every psychological trait studied — intelligence, personality, temperament, vulnerability to psychological disorders — reflects the combined, interacting influence of **many** genes together with environmental experience; almost none is determined by a single gene.

GIẢI THÍCH TIẾNG VIỆT

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DNA chứa mật mã di truyền, được tổ chức thành các **nhễm sắc thể (chromosomes)** — con người có 23 cặp, mỗi cặp gồm một nhiễm sắc thể từ mỗi bên bố mẹ. **Gene** là đoạn DNA mã hoá protein, ảnh hưởng đến hành vi một cách *gián tiếp* thông qua việc định hình hệ thần kinh và hệ nội tiết. Hầu hết đặc điểm tâm lý (trí thông minh, tính cách, nguy cơ mắc rối loạn tâm lý) đều là kết quả của **nhều gene** tương tác với **môi trường**, chứ không phải do một gene đơn lẻ quyết định.

1.5.2 Twin Studies and Adoption Studies

Behavioral geneticists disentangle the relative contributions of heredity and environment using two classic designs. **Identical (monozygotic, MZ) twins** develop from a single fertilized egg that splits in two, so they share 100% of their DNA. **Fraternal (dizygotic, DZ) twins** develop from two separately fertilized eggs, so they share on average only about 50% of their DNA — genetically no more similar than typical siblings, though (unlike most siblings) they share the same age and, usually, the same prenatal and childhood environment. A **twin study** compares how similar (concordant) MZ twin pairs are on a trait compared to DZ twin pairs; if MZ twins are consistently *more* similar than DZ twins on a given trait, that pattern suggests a genetic contribution to the trait, since both types of twin pairs typically share a similarly comparable rearing environment while differing sharply in genetic relatedness.

Adoption studies offer a complementary design: comparing an adopted child's traits to those of their biological parents (who contributed genes but, typically, not the rearing environment) versus their adoptive parents (who contributed the rearing environment but not genes) helps separate genetic from environmental influence. Similarity to biological parents (despite growing up apart from them) points toward a genetic influence; similarity to adoptive parents points toward an environmental influence.

Ví dụ mẫu · Interpreting twin-study data

A study finds that for a personality trait, the concordance rate (the probability that if one twin has the trait, the co-twin does too) is 60% for identical (MZ) twins and 35% for fraternal (DZ) twins. What does this pattern suggest, and what would it mean if both rates were roughly equal instead?

Because MZ twins (60%) show a substantially higher concordance rate than DZ twins (35%) — despite both twin types typically sharing a similarly comparable environment — the gap suggests a meaningful **genetic** contribution to the trait. Note that 60% concordance in MZ twins, who share 100% of their DNA, also demonstrates that the trait is *not* purely genetic (if it were, MZ concordance would approach 100%); environmental factors and gene–environment interaction clearly still matter. If the two rates were roughly equal instead, that would suggest the trait is influenced primarily by shared environment rather than genetics, since the extra genetic similarity of MZ twins would not be producing any extra behavioral similarity.

GIẢI THÍCH TIẾNG VIỆT

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Song sinh cùng trứng (monozygotic — MZ) chia sẻ 100% DNA; **song sinh khác trứng (dizygotic — DZ)** chia sẻ trung bình 50% DNA (giống anh chị em ruột thông thường). **Nghiên cứu song sinh** so sánh mức độ giống nhau (tỷ lệ trùng hợp — concordance rate) giữa cặp MZ và cặp DZ: nếu MZ giống nhau *nhiều hơn* DZ trên một đặc điểm, đó là bằng chứng cho ảnh hưởng **di truyền**. **Nghiên cứu con nuôi (adoption studies)** so sánh trẻ được nhận nuôi với cha mẹ ruột (chia sẻ gene) và cha mẹ nuôi (chia sẻ môi trường nuôi dưỡng) để tách bạch ảnh hưởng di truyền và môi trường.

1.5.3 Heritability and Epigenetics

Heritability is a precise statistical concept that is frequently misunderstood: it refers to the proportion of *variation in a trait, within a specific population*, that can be attributed to genetic differences among individuals in that population. Heritability estimates typically range from 0 (no genetic contribution to the variation observed) to 1.00 (all of the variation observed is attributable to genetic differences).

(!) Lỗi thường gặp: Sai lầm phổ biến nhất về **khả năng di truyền (heritability)**: cho rằng một chỉ số như “heritability = 0.50” nghĩa là “50% trí thông minh của *một cá nhân* đến từ gene, 50% từ môi trường.” Đây là hiểu sai hoàn toàn. Heritability chỉ áp dụng cho **sự biến thiên (variation) trong một QUẦN THỂ**, không áp dụng cho một cá nhân — nói “gene của một người quyết định 50% trí thông minh của người đó” là vô nghĩa về mặt thống kê. Ngoài ra, heritability không cố định: nó thay đổi tùy quần thể và tùy mức độ đa dạng của môi trường trong quần thể đó — nếu môi trường trở nên đồng nhất hơn (mọi người có cùng điều kiện sống), phần biến thiên còn lại sẽ do gene giải thích *nhiều hơn*, khiến heritability đo được *tăng lên*, dù bản thân gene không hề thay đổi.

Beyond heritability, the field of **epigenetics** studies how environmental factors (stress, nutrition, toxins, and other experiences) can switch genes on or off — altering whether and how strongly a gene is expressed — without changing the underlying DNA sequence itself. Some epigenetic changes can even be passed on to offspring, offering one mechanism by which environmental experience and heredity interact rather than operating as fully separate influences.

A closely related applied model, the **diathesis-stress model**, describes how genetic or biological predisposition (**diathesis**) and environmental stressors interact to produce a psychological disorder — neither factor alone is typically sufficient. Under this model, an individual may carry a genetic predisposition toward, say, depression or anxiety, yet never develop the disorder if they never encounter a

sufficient environmental trigger (significant stress, trauma, or adversity); conversely, someone with little genetic predisposition may be more resilient even under substantial stress. This model exemplifies why nature and nurture are best understood as *interacting*, not competing, explanations.

GIẢI THÍCH TIẾNG VIỆT

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Mô hình **diathesis-stress (diathesis-stress model)** cho rằng rối loạn tâm lý xuất hiện từ sự tương tác giữa yếu tố dễ mắc bệnh sinh học/di truyền (**diathesis**) và yếu tố stress từ môi trường — thường cần cả hai cùng xuất hiện thì rối loạn mới bộc phát; chỉ có khuynh hướng di truyền mà không gặp stress đủ lớn thì rối loạn có thể không bao giờ xuất hiện. Đây là ví dụ điển hình cho việc gene và môi trường **tương tác** với nhau chứ không tách biệt.

GIẢI THÍCH TIẾNG VIỆT

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Khả năng di truyền (**heritability**) chỉ đo tỷ lệ *biến thiên* của một đặc điểm trong một quần thể là do khác biệt gene gây ra — **không** áp dụng cho một cá nhân đơn lẻ. **Biểu sinh học (epigenetics)** nghiên cứu cách các yếu tố môi trường (stress, dinh dưỡng, độc tố...) có thể "bật/tắt" hoạt động của gene mà **không làm thay đổi trình tự DNA**, và một số thay đổi này thậm chí có thể di truyền cho thế hệ sau — cho thấy gene và môi trường tương tác chặt chẽ chứ không tách biệt.

1.5.4 The Evolutionary Perspective on Behavior

Evolutionary psychology applies Charles Darwin's principle of **natural selection** — the process by which heritable traits that increase an organism's chances of survival and reproduction become more common in a population over successive generations — to explain universal patterns of human behavior and mental processes. From this perspective, psychological tendencies that reliably helped ancestral humans survive and reproduce (such as a preference for calorie-dense foods, wariness around unfamiliar animals and heights, or attachment between infants and caregivers) became more widespread over evolutionary time because individuals with those tendencies left more descendants. Evolutionary psychologists caution that a trait being evolutionarily influenced does not make it unchangeable, morally justified, or immune to cultural and individual variation — evolved predispositions interact extensively with learning and environment.

Ví dụ mẫu · Applying the evolutionary perspective

Explain, from an evolutionary perspective, why humans across virtually all cultures show a strong innate wariness of snakes and spiders, often more so than of statistically more dangerous modern hazards like electrical outlets or automobiles.

Snakes and venomous spiders posed a lethal, recurring threat throughout the long span of human evolutionary history, so ancestors who were innately fast to detect and fearfully avoid these specific stimuli were more likely to survive and pass on that predisposition. Electrical outlets and automobiles are extremely recent inventions (a tiny fraction of evolutionary time), so natural selection has not had time to build in a comparable innate fear response to them — any caution around modern hazards must instead be entirely *learned*. This illustrates a general evolutionary psychology principle: our evolved psychological "toolkit" was shaped by ancestral, not modern, environments.

A frequently cited line of supporting evidence comes from cross-cultural research by **David Buss** and colleagues (late 1980s), who surveyed tens of thousands of participants across dozens of countries on mate preferences and found some strikingly consistent patterns across highly diverse cultures — for example, a broad tendency for men to place relatively more value on a partner's youth and physical appearance (cues evolutionarily associated with fertility), and for women to place relatively more value on a partner's resources and status (cues evolutionarily associated with ability to provide for offspring). Evolutionary psychologists interpret such cross-cultural consistency as evi-

dence that some mate-preference patterns reflect evolved predispositions rather than being purely local, culturally arbitrary norms — though critics note that consistent patterns across cultures could also partly reflect widely shared economic and social structures rather than evolved psychology alone, illustrating why evolutionary claims about behavior are typically evaluated alongside, not as a replacement for, sociocultural explanations.

GIẢI THÍCH TIẾNG VIỆT

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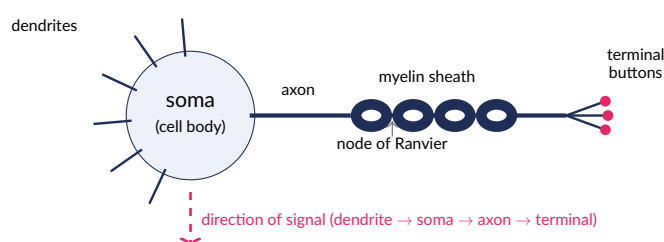
Tâm lý học tiến hoá (evolutionary psychology) áp dụng nguyên lý **chọn lọc tự nhiên** của Darwin — đặc điểm di truyền giúp tăng khả năng sống sót và sinh sản sẽ trở nên phổ biến hơn qua các thế hệ — để giải thích các khuôn mẫu hành vi phổ quát ở loài người (ví dụ nỗi sợ rắn, gắn bó giữa trẻ sơ sinh và người chăm sóc). Lưu ý: một đặc điểm có nguồn gốc tiến hoá không có nghĩa là nó *không thể thay đổi* hay *không chịu ảnh hưởng của học tập và văn hoá* — gene và môi trường luôn tương tác với nhau.

1.6 The Neuron and Neural Communication

1.6.1 Neuron Structure

The **neuron** is the basic building block of the nervous system: a specialized cell designed to receive, integrate, and transmit information. A typical neuron has four key structures. **Dendrites** are short, branching extensions that receive signals from neighboring neurons and conduct them toward the cell body. The **cell body (soma)** contains the nucleus and other organelles that keep the neuron alive and integrates incoming signals. The **axon** is a single long fiber that carries the neuron's outgoing electrical signal away from the cell body toward other neurons, muscles, or glands; many axons are wrapped in a **myelin sheath**, a fatty insulating layer (formed by glial cells) broken at regular intervals by small gaps called **nodes of Ranvier**. Myelin dramatically speeds up neural transmission because the electrical signal can effectively "jump" from node to node (saltatory conduction) instead of traveling continuously down the entire membrane. At the end of the axon, it branches into **terminal buttons** (axon terminals), which store and release chemical messengers to communicate with the next cell.

Glial cells (from the Greek for "glue") are non-neuronal support cells that vastly outnumber neurons; they provide structural support, supply neurons with nutrients, form the myelin sheath, remove waste and dead cells, and — as more recent research has shown — actively participate in communication and the formation of new synaptic connections.



Schematic neuron: dendrites receive signals and conduct them to the soma; the axon (insulated by the myelin sheath, interrupted by nodes of Ranvier) carries the signal to the terminal buttons.

Neurons are also classified functionally by the direction and role of the information they carry. **Sensory (afferent) neurons** carry incoming information from sensory receptors toward the central nervous system. **Motor (efferent) neurons** carry outgoing commands from the central nervous system out to muscles and glands. **Interneurons**, located entirely within the central nervous system, connect sensory and motor neurons (and other interneurons) and vastly outnumber the other two types, forming the complex circuitry underlying reflexes (Section 1.8) and higher-order processing.

GIẢI THÍCH TIẾNG VIỆT

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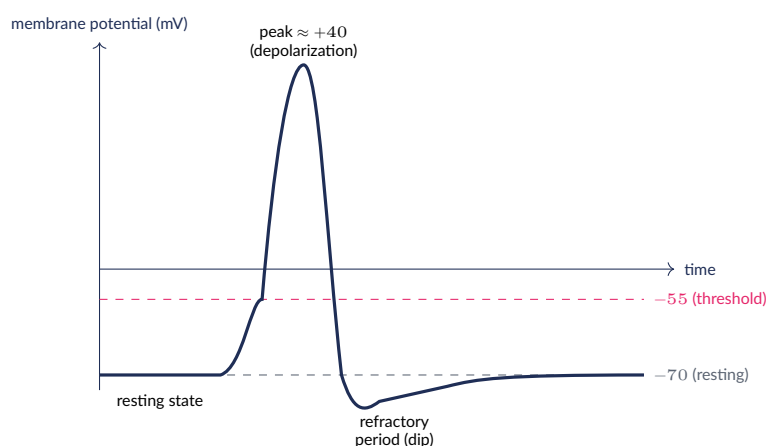
Neuron gồm **đuôi gai (dendrites)** — nhận tín hiệu; **thân tế bào (soma/cell body)** — chứa nhân,

tích hợp tín hiệu; **sợi trục (axon)** — dẫn truyền tín hiệu đi xa, thường được bọc bởi **bao myelin** (do tế bào thần kinh đệm tạo ra), ngắt quãng tại các **eo Ranvier (nodes of Ranvier)** giúp tín hiệu "nhảy cóc" (dẫn truyền nhảy cóc — saltatory conduction), tăng tốc độ dẫn truyền đáng kể; và **cúc tận cùng (terminal buttons)** ở đầu sợi trục, nơi giải phóng chất dẫn truyền thần kinh. **Tế bào thần kinh đệm (glial cells)** hỗ trợ neuron về cấu trúc, dinh dưỡng, tạo bao myelin, và loại bỏ chất thải. Phân loại theo chức năng: **neuron cảm giác/hướng tâm (sensory/afferent)** truyền tín hiệu vào hệ thần kinh trung ương; **neuron vận động/li tâm (motor/efferent)** truyền tín hiệu ra cơ và tuyến; **neuron liên hợp (interneuron)** nằm hoàn toàn trong hệ thần kinh trung ương, kết nối hai loại trên và chiếm số lượng đông nhất.

1.6.2 The Neural Impulse: Resting Potential to Action Potential

A neuron at rest maintains a slight electrical charge imbalance across its cell membrane, called the **resting potential** — typically about -70 millivolts (mV) relative to the outside of the cell, with the inside more negative due to the uneven distribution of ions (notably more sodium, Na^+ , outside and more potassium, K^+ , inside, maintained by active ion pumps). When a neuron receives enough excitatory input from other neurons to push this charge past a critical level called the **threshold** (typically around -55 mV), an **action potential** fires: channels in the membrane open, allowing Na^+ ions to rush into the cell, rapidly reversing the charge (**depolarization**, peaking around $+40$ mV). The membrane then rapidly restores its negative charge as K^+ ions flow out (**repolarization**), briefly overshooting the original resting level before settling back. Immediately afterward, during the **refractory period**, the neuron cannot fire another action potential (or can only do so with a much stronger stimulus), which enforces one-directional signal travel down the axon and limits maximum firing rate.

Critically, the action potential follows the **all-or-none law**: once the threshold is reached, the neuron fires a full-strength action potential every time, of the same size and speed regardless of how much the triggering stimulus exceeded threshold — a neuron cannot produce a "weak" or "partial" action potential. Below threshold, no action potential fires at all. Stimulus intensity is instead communicated by **how frequently** a neuron fires (its firing rate) and by how many neurons fire, not by the size of any individual action potential.



Action potential over time: resting potential (≈ -70 mV) → threshold reached (≈ -55 mV) → rapid depolarization (peak $\approx +40$ mV) → repolarization → brief refractory undershoot → return to resting potential.

Ví dụ mẫu · Applying the all-or-none law

Neuron X receives a stimulus that depolarizes it to -60 mV (below its -55 mV threshold), and a second, stronger stimulus that depolarizes it to -50 mV (above threshold). A third, even stronger stimulus depolarizes it to -30 mV. Which stimuli trigger an action potential, and how

(if at all) do the resulting action potentials differ in size?

The first stimulus (-60 mV) does not reach the -55 mV threshold, so **no action potential fires** – nothing is transmitted down the axon from this input alone. The second (-50 mV) and third (-30 mV) stimuli both exceed threshold, so **both trigger a full action potential** – by the **all-or-none law**, these two action potentials are identical in size and speed; the much stronger third stimulus does *not* produce a "bigger" spike. The only way the nervous system can represent the third stimulus as more intense is by increasing the **rate** at which the neuron fires successive action potentials, not the size of any single one.

GIẢI THÍCH TIẾNG VIỆT

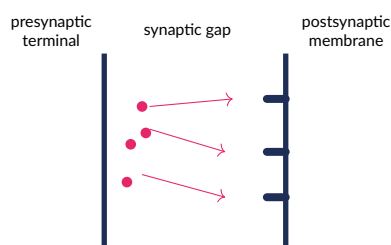
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Ở trạng thái nghỉ, neuron duy trì **điện thế nghỉ (resting potential)** khoảng -70 mV (bên trong âm hơn bên ngoài). Khi kích thích đủ mạnh để vượt **ngưỡng (threshold)** (≈ -55 mV), **điện thế hoạt động (action potential)** được kích hoạt: ion Na^+ tràn vào gây **khử cực (depolarization)**, sau đó ion K^+ thoát ra gây **tái cực (repolarization)**, tiếp theo là **thời kỳ trơ (refractory period)** – neuron tạm thời không thể phát xung tiếp. Theo **định luật tất cả hoặc không (all-or-none law)**, một khi đã vượt ngưỡng, điện thế hoạt động luôn có cùng độ lớn – cường độ kích thích chỉ được mã hoá qua **tần suất phát xung**, không phải độ lớn của từng xung.

(!) Lỗi thường gặp: Lỗi rất phổ biến: nghĩ rằng kích thích càng mạnh thì điện thế hoạt động càng "lớn" (biên độ cao hơn). Sai – theo **định luật tất cả hoặc không**, một khi vượt ngưỡng, mọi điện thế hoạt động của cùng một neuron đều có *biên độ giống hệt nhau*. Não bộ phân biệt kích thích mạnh/yếu bằng **tần suất** neuron phát xung (nhiều xung/giây hơn) và **số lượng neuron** được huy động, chứ không phải bằng độ lớn từng xung riêng lẻ.

1.6.3 The Synapse and Neurotransmission

Neurons do not physically touch; they communicate across a microscopic gap called the **synapse** (or synaptic gap/cleft). When an action potential reaches the terminal buttons, it triggers the release of chemical messengers called **neurotransmitters**, stored in small sacs (vesicles), into the synaptic gap. These neurotransmitter molecules diffuse across the gap and bind to specialized **receptor sites** on the receiving (postsynaptic) neuron's membrane, like a key fitting a lock – this binding can either excite the receiving neuron (making an action potential more likely) or inhibit it (making an action potential less likely). After delivering their message, neurotransmitter molecules are cleared from the synapse primarily through **reuptake**: the sending (presynaptic) neuron reabsorbs unused neurotransmitter molecules for later reuse, ending the signal and recycling the chemical.



receptor sites (postsynaptic) bind neurotransmitter → excite or inhibit

Synapse close-up: neurotransmitter molecules (pink dots) released from the presynaptic terminal cross the synaptic gap and bind to receptor sites on the postsynaptic membrane.

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Neuron giao tiếp qua **khớp thần kinh (synapse)** – khe hở nhỏ giữa neuron gửi và neuron nhận. **Chất dẫn truyền thần kinh (neurotransmitters)** được giải phóng từ cực tận cùng, khuếch tán qua khe synapse, và gắn vào **thụ thể (receptor sites)** trên neuron nhận, có thể gây **hưng phấn** (dễ phát xung hơn) hoặc **ức chế** (khó phát xung hơn). **Tái hấp thu (reuptake)** là quá trình neuron gửi hút lại chất dẫn truyền thần kinh chưa sử dụng để tái sử dụng, kết thúc tín hiệu.

1.6.4 Major Neurotransmitters

Different neurotransmitters are associated with different functions and, when disrupted, different disorders.

Neurotransmitter	Primary function(s)	Associated disorder / imbalance
Acetylcholine (ACh)	Muscle movement (activates skeletal muscle at neuromuscular junction); learning and memory	Undersupply linked to Alzheimer's disease; ACh-blocking toxins cause paralysis
Dopamine	Reward, motivation, motor control, learning	Undersupply linked to Parkinson's disease (motor symptoms); oversupply/oversensitivity linked to schizophrenia symptoms
Serotonin	Mood regulation, sleep, appetite, arousal	Undersupply linked to depression
Norepinephrine	Alertness and arousal; fight-or-flight activation	Undersupply linked to low energy/depressed mood; oversupply linked to anxiety/agitation
GABA (gamma-aminobutyric acid)	Major inhibitory neurotransmitter; slows neural activity	Undersupply linked to seizures, tremors, insomnia, anxiety
Glutamate	Major excitatory neurotransmitter; learning and memory	Oversupply can overstimulate the brain (linked to migraines, seizures)
Endorphins	Natural pain relief; pleasure	Involved in pain modulation and the "runner's high"; opiate drugs mimic their action

A chemical that binds to a receptor and mimics or increases a neurotransmitter's normal effect is called an **agonist**; a chemical that binds to a receptor (or otherwise interferes) and blocks or reduces a neurotransmitter's normal effect is called an **antagonist**. Many psychiatric medications work by altering neurotransmitter levels at the synapse – for example, **selective serotonin reuptake inhibitors (SSRIs)**, a common class of antidepressant, block the reuptake of serotonin by the presynaptic neuron, leaving more serotonin available in the synaptic gap for longer to continue stimulating postsynaptic receptors.

Ví dụ mẫu · How an SSRI changes synaptic transmission

Explain, step by step, how a selective serotonin reuptake inhibitor (SSRI) is expected to relieve symptoms of depression, using the concepts of reuptake, agonist/antagonist, and neurotransmitter availability.

Depression is associated with **undersupply** of serotonin activity at the synapse. Normally, after serotonin is released and binds briefly to postsynaptic receptors, the presynaptic neuron clears it from the synaptic gap through **reuptake**, ending its effect. An SSRI binds to and **blocks the reuptake transporter** on the presynaptic neuron, without directly activating the postsynaptic receptor itself – this makes it functionally an indirect **agonist** for serotonin's effects: because reuptake is blocked, serotonin molecules remain in the synaptic gap longer and can continue

binding to postsynaptic receptors repeatedly, increasing overall serotonin signaling. Over time, this increased serotonin activity is associated with improvement in mood symptoms for many patients with depression.

Ví dụ mẫu · Real-world agonists and antagonists at the ACh synapse

Nicotine (found in tobacco) binds to and activates the same receptors that acetylcholine normally activates, producing effects such as increased alertness. Curare, a paralytic poison historically used on blow-dart tips, binds to those same receptors but blocks them, preventing acetylcholine from activating muscle contraction and causing paralysis. Classify each substance as an agonist or antagonist, and explain the very different real-world consequences that follow from their opposite mechanisms.

Nicotine is an **agonist**: it binds to ACh receptors and activates them just as ACh itself would, amplifying cholinergic signaling (contributing to the alertness and other physiological effects of nicotine use). **Curare** is an **antagonist**: it binds to the same receptors but blocks them without activating them, and — critically — also physically prevents ACh itself from binding and activating those receptors. Because ACh is required to trigger skeletal muscle contraction at the neuromuscular junction, curare's blockade prevents muscles (including, at high enough doses, the muscles required for breathing) from contracting at all, producing paralysis — illustrating how the same basic mechanism (binding to a receptor) can produce opposite functional outcomes depending on whether the substance activates or blocks that receptor.

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Các chất dẫn truyền thần kinh chính: **acetylcholine (ACh)** — vận động cơ và trí nhớ, thiếu hụt liên quan bệnh Alzheimer; **dopamine** — phần thưởng và vận động, thiếu hụt liên quan Parkinson, dư/tăng nhạy cảm liên quan tâm thần phân liệt; **serotonin** — điều hoà tâm trạng và giấc ngủ, thiếu hụt liên quan trầm cảm; **norepinephrine** — sự tỉnh táo/cảnh giác; **GABA** — chất ức chế chính; **glutamate** — chất kích thích chính; **endorphin** — giảm đau tự nhiên. **Chất chủ vận (agonist)** bắt chước/tăng cường tác dụng của chất dẫn truyền thần kinh; **chất đối kháng (antagonist)** ngăn chặn tác dụng đó. Thuốc **SSRI** ức chế tái hấp thu serotonin, giữ serotonin ở khe synapse lâu hơn để điều trị trầm cảm.

(!) **Lỗi thường gặp**: Đừng nhầm **chất chủ vận (agonist)** với **chất đối kháng (antagonist)** chỉ dựa vào việc chất đó có "gắn vào thụ thể" hay không — cả hai đều gắn vào thụ thể. Điểm khác biệt là *kết quả*: agonist gắn vào và *kích hoạt/tăng cường* tác dụng bình thường của thụ thể (giống chìa khoá vừa khớp và mở được khoá); antagonist gắn vào nhưng *chặn* tác dụng đó (giống chìa khoá vừa vào ổ khoá nhưng không xoay được, đồng thời chặn chìa khoá thật không vào được).

1.7 The Endocrine System

1.7.1 Hormones versus Neurotransmitters

Alongside the nervous system, the body has a second communication network: the **endocrine system**, a collection of glands that release chemical messengers called **hormones** directly into the bloodstream. Hormones and neurotransmitters are chemical cousins — some molecules (like norepinephrine) even function as both, depending on where they are released — but the two systems differ sharply in speed and duration. Neural transmission across a synapse takes only milliseconds and its effects are brief and highly localized to the specific receiving cell. Hormones, by contrast, travel through the bloodstream to reach distant target organs throughout the body, which takes

much longer (seconds to minutes) but produces effects that are typically more diffuse and longer-lasting, sometimes persisting for minutes, hours, or (during development) even longer.

Nervous system: electrochemical signal, synapse-to-synapse, milliseconds, brief and localized effects. **Endocrine system:** hormones carried through the bloodstream, seconds to minutes to arrive, effects that are slower to start but longer-lasting and more widespread throughout the body.

GIẢI THÍCH TIẾNG VIỆT

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Hệ nội tiết (endocrine system) là hệ thống giao tiếp thứ hai của cơ thể, dùng **hormone** được tiết trực tiếp vào máu thay vì qua khớp thần kinh. So với hệ thần kinh (tín hiệu điện hoá, chỉ mất mili giây, tác dụng ngắn và cục bộ), hệ nội tiết chậm hơn (giây đến phút để hormone di chuyển theo máu) nhưng tác dụng **lan toả và kéo dài hơn** nhiều.

1.7.2 The Major Glands

The **pituitary gland**, located at the base of the brain, is often called the “**master gland**” because it releases hormones that regulate the activity of most other endocrine glands — yet the pituitary itself is directed by the **hypothalamus**, the brain structure that links the nervous system to the endocrine system. Among other hormones, the pituitary releases growth hormone (regulating physical development) and oxytocin (involved in bonding, labor contractions, and milk release).

The paired **adrenal glands**, sitting atop the kidneys, are central to the body’s stress response. Their inner core (adrenal medulla) releases **epinephrine (adrenaline)** and norepinephrine, triggering the rapid physiological arousal of the fight-or-flight response (increased heart rate, blood pressure, and blood sugar availability); their outer layer (adrenal cortex) releases **cortisol**, a slower-acting stress hormone that mobilizes energy stores and, when chronically elevated, can impair memory and immune function.

The **thyroid gland**, in the neck, releases thyroxine, which regulates the body’s overall **metabolic rate** — the speed at which the body converts food into usable energy; both an underactive and an overactive thyroid produce noticeable psychological effects (e.g., fatigue and depression-like symptoms versus anxiety and irritability, respectively). The **gonads** — testes in males, ovaries in females — release sex hormones (chiefly testosterone and estrogen, respectively) that direct sexual development and influence behaviors related to reproduction and, to a degree, mood and aggression. The **pancreas** regulates blood sugar by releasing insulin (which lowers blood glucose) and glucagon (which raises it); severe imbalance in this system (diabetes) can also affect energy, mood, and cognitive functioning.

Ví dụ mẫu · Tracing the fight-or-flight hormonal response

A hiker unexpectedly encounters a bear on a trail. Trace the endocrine sequence of events, from perception of the threat to the physical sensations the hiker experiences (racing heart, rapid breathing, surge of energy).

The hiker’s brain (via the amygdala and hypothalamus, covered later in this unit) appraises the bear as an immediate threat. The **hypothalamus** signals the **adrenal medulla** (part of the adrenal glands) via the sympathetic nervous system to rapidly release **epinephrine (adrenaline)** and norepinephrine into the bloodstream. These hormones act quickly on target organs throughout the body: the heart beats faster and harder, breathing quickens to bring in more oxygen, blood is redirected from digestion toward the large muscles, and stored glucose is released into the blood for fast energy — together producing the acute, fast-onset physical sensations of fight-or-flight. If the stressful situation persists (e.g., the hiker must navigate a long, anxious hike back to safety), the slower-acting **HPA axis** (below) sustains elevated cortisol

to keep the body mobilized over a longer period.

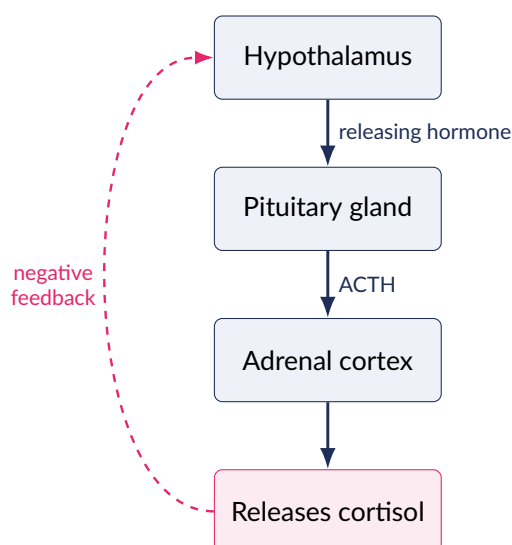
GIẢI THÍCH TIẾNG VIỆT

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Tuyến yên (pituitary gland) được gọi là "tuyến chủ" vì điều khiển hầu hết các tuyến nội tiết khác, nhưng bản thân nó lại chịu sự chỉ đạo của **vùng dưới đồi (hypothalamus)**. **Tuyến thượng thận (adrenal glands)** tiết **epinephrine/adrenaline** (phản ứng nhanh, "chiến hay chạy") và **cortisol** (phản ứng chậm hơn, kéo dài, liên quan stress mãn tính). **Tuyến giáp (thyroid gland)** điều hoà **tốc độ trao đổi chất**. **Tuyến sinh dục (gonads)** tiết hormone sinh dục (testosterone, estrogen). **Tuyến tụy (pancreas)** điều hoà đường huyết qua insulin và glucagon.

1.7.3 The HPA Axis

The **HPA axis** (hypothalamus–pituitary–adrenal axis) describes the cascading hormonal pathway that sustains the body's response to ongoing stress. When the brain appraises a stressor, the **hypothalamus** releases a signaling hormone that stimulates the **pituitary gland**, which in turn releases a hormone (ACTH) into the bloodstream that stimulates the **adrenal cortex** to release **cortisol**. Cortisol mobilizes stored energy, temporarily suppresses non-essential functions such as digestion and immune activity, and (through a negative feedback loop back to the hypothalamus and pituitary) helps regulate the duration and intensity of the overall stress response. Because this pathway relies on hormones traveling through the bloodstream at each step, it is considerably slower to activate than the direct neural fight-or-flight response, but its effects last much longer – which is why chronic, prolonged stress (repeated or sustained HPA axis activation) is linked to health consequences including impaired memory, weakened immune function, and increased risk for anxiety and depression.



The HPA axis: the hypothalamus signals the pituitary, which signals the adrenal cortex to release cortisol; rising cortisol feeds back to reduce further activation of the hypothalamus and pituitary.

Ví dụ mẫu · Chronic stress and the hippocampus

Research finds that individuals under prolonged, chronic stress (with persistently elevated cortisol) often show measurable shrinkage of the hippocampus and associated memory difficulties over time. Using concepts from this unit, explain a plausible mechanism linking chronic HPA axis activation to impaired memory.

Under normal, brief stress, cortisol released via the HPA axis is adaptive – mobilizing energy

and sharpening short-term focus. But the hippocampus (Section 1.9) is particularly dense with cortisol receptors, making it especially sensitive to prolonged cortisol exposure. When the HPA axis is activated repeatedly or continuously (chronic stress) rather than briefly, sustained high cortisol levels are believed to impair the hippocampus's ability to support the formation of new explicit memories, and over time may contribute to measurable structural changes. This illustrates why chronic stress is specifically linked to *memory* problems rather than just general fatigue — the mechanism runs through a specific endocrine pathway acting on a specific, cortisol-sensitive brain structure.

GIẢI THÍCH TIẾNG VIỆT

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Trục HPA (**hypothalamus–pituitary–adrenal axis**) là chuỗi phản ứng nội tiết duy trì phản ứng stress kéo dài: **vùng dưới đồi** → **tuyến yên** (tiết ACTH) → **vỏ tuyến thượng thận** (tiết cortisol). Cortisol vừa huy động năng lượng dự trữ, vừa tạo vòng phản hồi âm (negative feedback) làm giảm hoạt động của vùng dưới đồi và tuyến yên. Vì phải qua nhiều bước hormone, trục HPA chậm hơn phản ứng thần kinh trực tiếp nhưng tác dụng kéo dài hơn nhiều — stress mãn tính (trục HPA bị kích hoạt liên tục) gây hại cho trí nhớ và hệ miễn dịch.

(!) **Lỗi thường gặp:** Học sinh hay lẫn lộn vai trò của **epinephrine (adrenaline)** và **cortisol**. Cả hai đều là hormone stress do tuyến thượng thận tiết ra, nhưng epinephrine (từ *tuỷ* thượng thận — adrenal medulla) tạo phản ứng *tức thời*, dạng "chiến hay chạy" (tim đập nhanh, thở gấp) và được kích hoạt trực tiếp bởi hệ thần kinh giao cảm; cortisol (từ *vỏ* thượng thận — adrenal cortex) là một phần của trục HPA, phản ứng *chậm hơn* nhưng *kéo dài hơn*, phù hợp với stress mãn tính chứ không phải nguy hiểm tức thời.

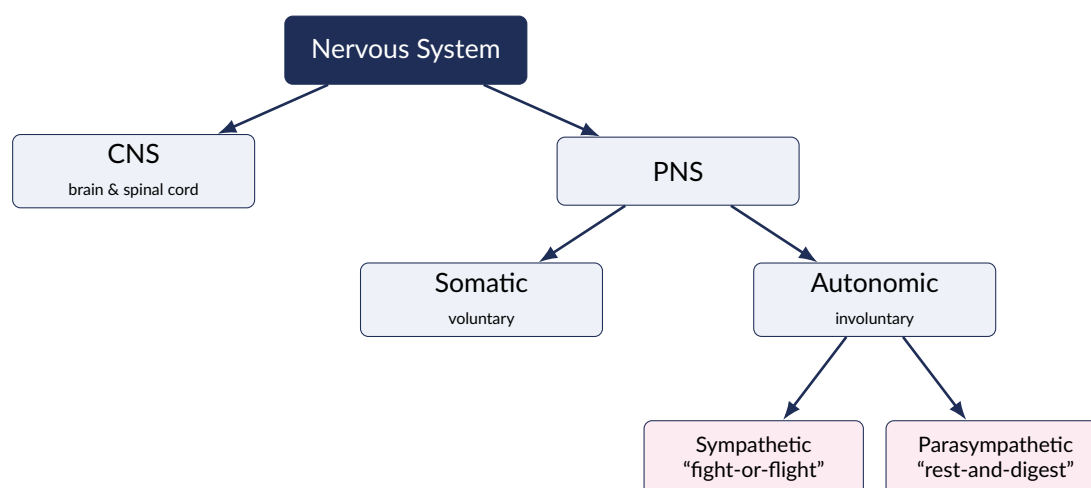
1.8 Organization of the Nervous System

1.8.1 Central and Peripheral Nervous Systems

The nervous system as a whole divides into two major subsystems. The **central nervous system (CNS)** consists of the **brain** and **spinal cord** — the body's primary information-processing and decision-making center. The **peripheral nervous system (PNS)** consists of all the nerves outside the CNS, connecting the brain and spinal cord to the rest of the body; its job is to carry sensory information inward to the CNS and carry commands outward from the CNS to muscles and glands.

The PNS itself divides into two subdivisions. The **somatic nervous system** controls voluntary movements of skeletal muscles (e.g., reaching for a cup) and carries sensory information from the skin, muscles, and joints to the CNS. The **autonomic nervous system (ANS)** controls involuntary, largely automatic functions of internal organs and glands (heart rate, digestion, breathing rate, pupil dilation) — operating largely outside conscious control.

The autonomic nervous system further divides into two complementary branches that typically work in opposition to maintain internal balance. The **sympathetic nervous system** mobilizes the body for action under conditions of stress, threat, or exertion — the "**fight-or-flight**" response: it accelerates heart rate, dilates pupils, redirects blood flow to skeletal muscles, and inhibits digestion. The **parasympathetic nervous system** does the opposite, calming the body and conserving energy once a threat has passed — the "**rest-and-digest**" response: it slows heart rate, constricts pupils, and promotes digestion.



Organization of the nervous system: CNS vs. PNS; PNS divides into somatic and autonomic; autonomic divides into sympathetic and parasympathetic branches.

GIẢI THÍCH TIẾNG VIỆT

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Hệ thần kinh trung ương (CNS) gồm não và tủy sống; **hệ thần kinh ngoại biên (PNS)** gồm mọi dây thần kinh còn lại, chia thành **hệ thần kinh thân thể (somatic)** – điều khiển vận động tự nguyện – và **hệ thần kinh tự chủ (autonomic)** – điều khiển chức năng không tự nguyện của nội tạng. Hệ tự chủ lại chia thành **hệ thần kinh giao cảm (sympathetic)** – kích hoạt phản ứng "chiến hay chạy" – và **hệ thần kinh đối giao cảm (parasympathetic)** – thúc đẩy trạng thái "ngủ ngơi và tiêu hoá", giúp cơ thể thư giãn và phục hồi sau stress.

Most internal organs receive **dual innervation** – separate connections from both the sympathetic and parasympathetic branches – allowing the two systems to function like an accelerator and a brake on the same organ, continuously fine-tuning its activity level rather than simply switching it on or off.

(!) Lỗi thường gặp: Học sinh dễ nhầm **hệ thần kinh thân thể (somatic)** với **hệ thần kinh tự chủ (autonomic)** khi phân loại một hành vi cụ thể. Ghi nhớ: nếu hành vi liên quan đến *cơ xương và có thể kiểm soát ý thức* (vẫy tay, viết chữ), đó là hệ thân thể; nếu liên quan đến *cơ quan nội tạng và diễn ra tự động* (nhịp tim, tiêu hoá, đổ mồ hôi), đó là hệ tự chủ – dù đôi khi ta có thể tạm thời "cố ý" ảnh hưởng một phần (ví dụ nhịn thở), phần lớn hoạt động của hệ tự chủ vẫn diễn ra ngoài kiểm soát ý thức trực tiếp.

1.8.2 The Spinal Cord and the Reflex Arc

The spinal cord relays information between the brain and the rest of the body, but it can also independently control simple, automatic **reflexes** – rapid, involuntary responses to a stimulus – without waiting for the brain to process the information first. A **reflex arc** typically involves a sensory neuron carrying information from a receptor to the spinal cord, an interneuron within the spinal cord that relays the signal directly to a motor neuron, and the motor neuron carrying a command back out to a muscle – all without the signal needing to first travel up to the brain. This shortcut allows reflexes such as pulling a hand away from a hot stove to occur faster than would be possible if the brain had to consciously process the sensation and formulate a response first; the sensory information about the event does continue traveling up to the brain, but only *after* the reflex response has already begun.

Ví dụ mẫu · Tracing a reflex arc

A person touches a hot stove and immediately withdraws their hand before consciously feeling pain. Trace the neural pathway responsible for the rapid withdrawal, and explain why conscious awareness of the pain lags slightly behind the physical withdrawal.

Heat/pain receptors in the skin trigger a **sensory neuron**, which carries the signal into the **spinal cord**. Inside the spinal cord, an **interneuron** immediately relays the signal to a **motor neuron**, which carries a command back out to the arm/hand muscles, triggering withdrawal — this entire loop occurs at the level of the spinal cord, without needing to route through the brain first, which is what makes it so fast. Separately, the original sensory signal *also* continues traveling up the spinal cord to the brain for full conscious processing, but because this pathway is longer and involves more neural relays, the conscious experience of "ouch, that hurts" is registered a fraction of a second *after* the hand has already withdrawn.

GIẢI THÍCH TIẾNG VIỆT

VN

Cung phản xạ (reflex arc) cho phép tủy sống xử lý một số phản ứng khẩn cấp (ví dụ rút tay khi chạm vật nóng) mà **không cần** tín hiệu đi lên não trước — đường truyền gồm neuron cảm giác → neuron liên hợp (interneuron) trong tủy sống → neuron vận động → cơ. Tín hiệu cảm giác vẫn tiếp tục đi lên não để xử lý ý thức, nhưng *sau* khi phản xạ đã xảy ra — đây là lý do ta rút tay lại *trước* khi thực sự "cảm thấy" đau.

1.9 The Brain**1.9.1 The Hindbrain and Midbrain**

At the base of the brain, where it connects to the spinal cord, lies the **brainstem**, containing the oldest and most basic structures for survival. The **medulla** controls essential automatic, life-sustaining functions — heartbeat and breathing rate — and damage to it is frequently fatal. Just above the medulla, the **pons** helps relay information between different brain regions and plays a role in regulating sleep and arousal. Attached at the back of the brainstem, the **cerebellum** ("little brain") coordinates fine motor movement, balance, and posture, and is also increasingly understood to support **procedural learning** — the gradual, largely unconscious learning of motor skills and habits (e.g., learning to ride a bicycle) — and some forms of nonverbal learning and cognition.

Sitting above the hindbrain, the **midbrain** contains the **reticular formation**, a diffuse network of neurons extending from the spinal cord up through the brainstem into the thalamus. The reticular formation filters incoming sensory information and controls overall **arousal and alertness** — it is what allows a sleeping parent to wake instantly at a baby's cry while sleeping through louder, less meaningful background noise, by filtering which stimuli are significant enough to require conscious attention.

Hindbrain (medulla, pons, cerebellum) — basic survival functions and motor coordination. **Mid-brain** (reticular formation) — arousal and alertness. **Forebrain** (thalamus, hypothalamus, limbic system, cerebral cortex) — sensory relay, homeostasis, emotion, memory, and higher cognition. In general, structures lower and further back in the brain support more basic, automatic functions, while structures higher and further forward support increasingly complex, flexible behavior — though every region works in constant interaction with the others.

GIẢI THÍCH TIẾNG VIỆT

VN

Não sau (hindbrain): hành tủy (**medulla**) điều khiển nhịp tim và hô hấp — tổn thương thường gây tử vong; cầu não (**pons**) tham gia điều hoà giấc ngủ và chuyển tiếp thông tin giữa các vùng

não; **tiểu não (cerebellum)** phối hợp vận động tinh vi, thăng bằng, và **học tập thủ tục (procedural learning)** (kỹ năng vận động, thói quen). **Não giữa (midbrain)** chứa **thể lưới (reticular formation)**, mạng lưới neuron điều hoà mức độ **tỉnh táo và cảnh giác**, lọc bớt thông tin cảm giác không quan trọng.

1.9.2 The Forebrain: Thalamus, Hypothalamus, and Limbic System

The **thalamus**, situated near the center of the brain, acts as the brain's principal sensory relay station: nearly all incoming sensory information (except smell) passes through the thalamus, which routes it to the appropriate area of the cerebral cortex for further processing. The **hypothalamus**, just below the thalamus, is a small but critical structure that maintains **homeostasis** — the body's internal stability — by regulating hunger, thirst, body temperature, and sexual behavior; it also directs the endocrine system by controlling the pituitary gland (Section 1.7), linking the nervous and endocrine systems together.

The **limbic system** is a set of interconnected forebrain structures, bordering the thalamus, central to emotion, motivation, and memory. The **amygdala**, a small almond-shaped structure, plays a central role in processing **fear and aggression** and in attaching emotional significance to experiences and memories. The **hippocampus** is essential for forming new **explicit (declarative) memories** — conscious memories of facts and events; the famous case of patient H.M. (whose hippocampus was surgically removed to treat severe epilepsy) demonstrated that damage to the hippocampus prevents the formation of *new* long-term explicit memories, even though the ability to form new procedural memories (linked instead to the cerebellum and basal ganglia) and to recall memories formed before the surgery remained largely intact.

Ví dụ mẫu · Distinguishing hypothalamus, amygdala, and hippocampus

A researcher studies three patients with damage to different brain structures. Patient A cannot regulate body temperature or feels no hunger cues. Patient B shows unusually blunted fear responses and is not appropriately wary of dangerous situations. Patient C can hold a conversation normally but cannot remember it ever happened once a few minutes have passed, though they still clearly remember events from years before the injury. Identify the likely damaged structure in each case.

Patient A: the **hypothalamus**, which regulates homeostatic drives including hunger and temperature regulation. Patient B: the **amygdala**, which processes fear and threat-related emotional responses. Patient C: the **hippocampus** — the inability to form *new* explicit memories while old memories remain intact is the classic signature of hippocampal damage (as in the case of patient H.M.), since the hippocampus is required to consolidate new experiences into long-term explicit memory but is not the storage site for memories already consolidated.

GIẢI THÍCH TIẾNG VIỆT

VN

Vùng đồi thị (thalamus): trạm chuyển tiếp cảm giác chính của não (trừ khứu giác). **Vùng dưới đồi (hypothalamus):** duy trì cân bằng nội môi (đói, khát, nhiệt độ, hành vi tình dục) và điều khiển tuyến yên. **Hệ viền (limbic system)** gồm **hạch hạnh nhân (amygdala)** — xử lý sợ hãi và hung hăng — và **hồi hải mã (hippocampus)** — hình thành **trí nhớ tường thuật/khai báo (explicit/declarative memory)** mới. Ca bệnh nhân H.M. (cắt bỏ hồi hải mã để điều trị động kinh) cho thấy tổn thương hồi hải mã khiến người bệnh không thể hình thành ký ức mới, dù ký ức cũ và khả năng học kỹ năng vận động (procedural) vẫn còn nguyên vẹn.

(!) **Lỗi thường gặp:** Học sinh thường lẫn lộn chức năng của **hạch hạnh nhân (amygdala)** và **hồi hải mã (hippocampus)** vì cả hai đều thuộc hệ viền và đều liên quan đến "cảm xúc/ký ức." Ghi nhớ: amygdala xử lý *cảm xúc sợ hãi/hung hăng* (phản ứng cảm xúc *trong lúc* xảy ra sự kiện); hippocampus *hình thành* ký ức tường thuật mới về sự kiện đó để có thể nhớ lại sau này — một bên là "cảm nhận," một bên là "ghi nhớ."

1.9.3 The Cerebral Cortex and Its Four Lobes

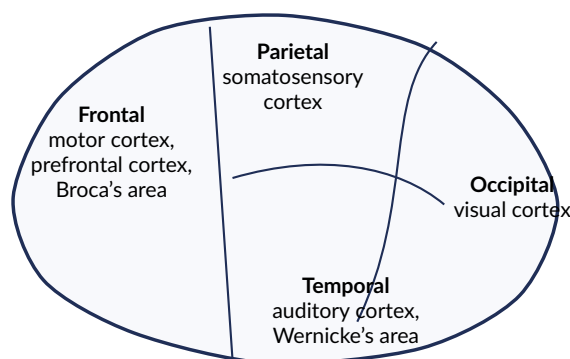
The **cerebral cortex** is the brain's thin, deeply wrinkled outer layer, responsible for the most complex mental functions — perception, language, reasoning, planning, and voluntary movement. It is divided into four paired lobes.

The four lobes of the cerebral cortex

- **Frontal lobe** (front of the brain) — contains the **motor cortex**, a strip that controls voluntary movement of specific body parts; the **prefrontal cortex**, responsible for executive functions such as planning, decision-making, impulse control, and personality (famously illustrated by the case of Phineas Gage, discussed in the next section); and, typically in the left frontal lobe, **Broca's area**, which controls the production of speech.
- **Parietal lobe** (top/back of the brain) — contains the **somatosensory cortex**, a strip that registers touch, temperature, and pain sensations from different body parts; also involved in spatial processing.
- **Temporal lobe** (sides of the brain, near the ears) — contains the **auditory cortex**, which processes sound, and, typically in the left temporal lobe, **Wernicke's area**, responsible for language comprehension.
- **Occipital lobe** (back of the brain) — contains the **visual cortex**, which processes visual information.

Both the motor cortex and somatosensory cortex are organized **somatotopically**: the amount of cortical space devoted to a body part corresponds to how much fine motor control or sensory sensitivity that part requires, not to its physical size — the hands, lips, and tongue receive disproportionately large representation compared to, say, the torso.

Beyond the primary sensory and motor areas, much of the cortex consists of **association areas** — regions not directly responsible for any single sensory or motor function, but instead responsible for integrating information across regions to support higher mental functions such as learning, memory, language, and thought. A larger proportion of association cortex, particularly in the prefrontal cortex, is one hallmark of human brain organization relative to other species. Damage to specific association areas can produce surprisingly selective deficits: damage to association areas near the visual cortex can produce **visual agnosia** — the inability to recognize or identify familiar objects visually, despite the primary visual cortex and basic vision remaining intact (the patient can accurately describe an object's edges, color, and shape, but cannot identify what the object is) — illustrating that even "seeing" and "recognizing what is seen" depend on at least partly separate neural processes.



(schematic lateral view — not anatomically precise)

Schematic lateral view of the cerebral cortex, labeling the approximate location and key functions of the four lobes.

Ví dụ mẫu · Localizing function from a case study

A stroke patient can no longer produce fluent, grammatical speech — their sentences come out slow, effortful, and fragmented — but they can understand everything said to them perfectly well and become visibly frustrated by their own errors. A second stroke patient speaks fluently and with normal grammar, but their sentences are full of nonsense words and they seem unaware that what they are saying makes no sense, and they cannot understand what others say to them. Identify the likely damaged area in each patient.

Patient 1's pattern — effortful, non-fluent speech *production* with intact *comprehension* — is the classic signature of damage to **Broca's area** (frontal lobe), which controls the motor programming of speech but is not needed to understand language. Patient 2's pattern — fluent but meaningless speech *and* impaired comprehension — is the classic signature of damage to **Wernicke's area** (temporal lobe), which is needed to comprehend and generate meaningful language, even though the physical ability to produce fluent-sounding speech remains intact.

GIẢI THÍCH TIẾNG VIỆT

VN

Vỏ não (**cerebral cortex**) chia thành 4 thùy: **thùy trán (frontal lobe)** — chứa vỏ vận động (motor cortex), vỏ trước trán (prefrontal cortex — chức năng điều hành, ra quyết định, tính cách), và **vùng Broca** (sản sinh lời nói); **thùy đỉnh (parietal lobe)** — chứa vỏ cảm giác thân thể (somatosensory cortex); **thùy thái dương (temporal lobe)** — chứa vỏ thính giác và **vùng Wernicke** (hiểu ngôn ngữ); **thùy chẩm (occipital lobe)** — chứa vỏ thị giác. Phần lớn diện tích vỏ não còn lại là **vùng liên hợp (association areas)**, tích hợp thông tin cho các chức năng nhận thức bậc cao — tổn thương vùng liên hợp gần vỏ thị giác có thể gây **mất nhận biết thị giác (visual agnosia)**: bệnh nhân vẫn "thấy" được các đường viền, màu sắc, hình dạng nhưng không thể nhận ra đó là vật gì.

(!) Lỗi thường gặp: Đừng nhầm **vùng Broca** (thùy trán, phụ trách sản sinh lời nói — tổn thương gây nói khó khăn, ngắt quãng nhưng vẫn hiểu được) với **vùng Wernicke** (thùy thái dương, phụ trách hiểu ngôn ngữ — tổn thương gây nói trôi chảy nhưng vô nghĩa và không hiểu được lời nói). Mẹo nhớ: "Broca → Broken speech" (nói khó khăn nhưng hiểu được); "Wernicke → Words without meaning" (nói trôi chảy nhưng không hiểu/vô nghĩa).

1.9.4 Hemispheric Lateralization and Split-Brain Research

The cerebral cortex is divided into left and right **hemispheres**, connected by a thick band of nerve fibers called the **corpus callosum**, which allows the two hemispheres to communicate and coordinate. Each hemisphere primarily receives sensory input from, and controls motor movement on, the

opposite side of the body (contralateral organization). While both hemispheres participate in nearly every task, research has revealed some **lateralization** — relative specialization — of function: in most right-handed individuals, the left hemisphere is relatively more specialized for language and logical/-analytical processing, while the right hemisphere is relatively more specialized for spatial processing, facial recognition, and certain aspects of creativity.

The clearest evidence for lateralization comes from **split-brain research** conducted by **Roger Sperry** and his student **Michael Gazzaniga**, beginning in the 1960s, studying patients whose corpus callosum had been surgically severed as a last-resort treatment for severe, otherwise-uncontrollable epilepsy (a procedure that prevents seizures from spreading between hemispheres). Because the corpus callosum was cut, information presented to one hemisphere could no longer be shared with the other. In a classic experimental design, researchers had split-brain patients stare at a fixed central point while an image or word was flashed briefly to only the **left visual field** (processed exclusively by the **right** hemisphere, due to the visual system's contralateral wiring) or only the **right visual field** (processed exclusively by the **left** hemisphere).

When a word (e.g., "spoon") was flashed only to the left visual field, patients could not verbally name the object, because in most people the left hemisphere alone controls language production, and the isolated right hemisphere (which received the word) had no way to communicate the information to the language-capable left hemisphere. However, when asked to select the matching object by feel using their left hand (also controlled by the right hemisphere), patients could correctly pick out the spoon — demonstrating that the right hemisphere had, in fact, perceived and processed the word, even though it could not verbally report doing so. This work demonstrated that the two hemispheres are each independently capable of learning, perceiving, and directing behavior, and helped map out relative hemispheric specialization; Sperry was awarded the Nobel Prize in Physiology or Medicine in 1981 for this research.

Ví dụ mẫu · Predicting a split-brain experiment outcome

In a split-brain experiment, the word "KEY" is flashed only to a patient's left visual field, while the word "RING" is simultaneously flashed only to the right visual field. The patient is asked to say aloud what word they saw, and separately, to use their left hand (hidden from view) to pick out the object that was shown from a set of objects. Predict what the patient will say and what they will pick, and explain why.

The right visual field routes to the **left hemisphere** (language-dominant in most people), so the patient will verbally report seeing "**RING**" — the word flashed to the right visual field — because only the left hemisphere received that word and only the left hemisphere can generate speech. The left visual field routes to the **right hemisphere**, which received "KEY"; the right hemisphere cannot produce speech, so the patient cannot say "key" aloud, but because the right hemisphere also controls the **left hand**, the patient's left hand will correctly select the **key** from the set of objects — even though the patient will typically express surprise or be unable to explain verbally why their hand chose that object.

GIẢI THÍCH TIẾNG VIỆT

VN

Hai bán cầu não nối với nhau qua **thể chai (corpus callosum)**. Mỗi bán cầu chủ yếu nhận cảm giác và điều khiển vận động ở *phía đối diện cơ thể*. **Nghiên cứu não chia đôi (split-brain research)** của **Roger Sperry** và **Michael Gazzaniga** trên bệnh nhân đã cắt thể chai (điều trị động kinh nặng) cho thấy: khi từ được chiếu vào **thị trường trái** (do bán cầu phải xử lý), bệnh nhân *không thể nói* ra từ đó (vì trung khu ngôn ngữ thường ở bán cầu trái) nhưng vẫn có thể *chọn đúng vật* bằng tay trái (do bán cầu phải điều khiển) — chứng minh mỗi bán cầu có thể xử lý thông tin độc lập.

(!) **Lỗi thường gặp:** "Người thiên não trái thì logic, người thiên não phải thì sáng tạo" — đây là một **ngộ nhận phổ biến**, không phải kết luận khoa học chính xác. Nghiên cứu chỉ cho thấy sự *chuyên biệt hoá tương đối* của mỗi bán cầu cho một số chức năng cụ thể (ví dụ ngôn ngữ thiên về bán cầu trái ở đa số người thuận tay phải) — chứ **không có bằng chứng** cho việc một người "chủ yếu dùng" một bên bán cầu để tạo nên kiểu tính cách "logic" hay "sáng tạo." Trong hầu hết nhiệm vụ hằng ngày, cả hai bán cầu đều phối hợp hoạt động cùng nhau qua thể chai.

1.9.5 Neuroplasticity and Neurogenesis

The brain is not a fixed, unchanging structure. **Neuroplasticity** refers to the brain's capacity to reorganize itself — strengthening, weakening, or rewiring synaptic connections — in response to experience, learning, or injury. Plasticity is most pronounced during childhood, when the developing brain is especially responsive to experience, but current research confirms the brain retains meaningful plasticity throughout the lifespan (for example, brain regions near an area damaged by stroke can sometimes take over some of the lost function through rehabilitation and practice). **Neurogenesis**, the production of entirely new neurons, was once thought to be impossible in the adult mammalian brain, but is now understood to occur in at least a few specific regions — most notably the hippocampus — throughout adulthood, and is influenced by factors such as exercise, learning, and stress.

GIẢI THÍCH TIẾNG VIỆT

VN

Tính mềm dẻo thần kinh (neuroplasticity) là khả năng não bộ tự tổ chức lại (tăng cường, làm yếu, hoặc tái định tuyến các kết nối synapse) để đáp ứng với trải nghiệm, học tập, hoặc tổn thương — mạnh nhất ở trẻ em nhưng vẫn tồn tại suốt đời. **Sinh thần kinh mới (neurogenesis)** — quá trình tạo ra neuron hoàn toàn mới — từng được cho là không thể xảy ra ở não người trưởng thành, nhưng hiện nay đã được xác nhận xảy ra ở một số vùng nhất định (đặc biệt là hồi hải mã) trong suốt cuộc đời.

1.10 Tools for Studying the Brain

1.10.1 Lesioning and Clinical Case Studies

Long before modern imaging technology existed, researchers learned about brain function by studying the effects of damage. In animal research, **lesioning** deliberately destroys a specific area of brain tissue so researchers can observe what abilities are lost, inferring that structure's normal function. In humans, comparable insight comes from **case studies** of individuals who suffered naturally occurring brain damage — most famously **Phineas Gage**, a railroad construction foreman who in 1848 survived a large iron rod being driven through his skull, destroying much of his left frontal lobe (notably the prefrontal cortex). Gage retained his memory, speech, and basic intellectual abilities, but his personality reportedly changed markedly — he became impulsive, irritable, and had difficulty planning and controlling his behavior — providing early, influential evidence linking the **prefrontal cortex** to personality and executive function. Case studies like Gage's provide rich, real-world insight into brain-behavior relationships, but a single case cannot be generalized with confidence, since the exact location and extent of naturally occurring damage varies unpredictably from patient to patient.

Neuropsychologists strengthen causal claims about brain-behavior relationships using the logic of **double dissociation**: if one patient with damage to Region X loses Ability 1 but retains Ability 2, while a second patient with damage to Region Y loses Ability 2 but retains Ability 1, this pattern provides much stronger evidence that Region X and Region Y support genuinely separate, independent functions than either case alone could show. (This is exactly the logic behind the classic Broca's-area/Wernicke's-area comparison in Section 1.9: damage to one impairs production but spares comprehension, while damage to the other impairs comprehension but spares production — a double dissociation confirming that speech production and language comprehension rely on at least partly separate neural systems.)

GIẢI THÍCH TIẾNG VIỆT

VN

Phân ly kép (double dissociation) là logic suy luận mạnh mẽ trong khoa học thần kinh: nếu tổn thương vùng X làm mất khả năng 1 nhưng vẫn giữ khả năng 2, còn tổn thương vùng Y làm mất khả năng 2 nhưng giữ khả năng 1, thì đây là bằng chứng thuyết phục rằng hai vùng đó đảm nhiệm hai chức năng **độc lập, tách biệt** nhau – mạnh hơn nhiều so với việc chỉ quan sát một trường hợp tổn thương đơn lẻ. Đây chính là logic đằng sau việc so sánh vùng Broca và vùng Wernicke.

GIẢI THÍCH TIẾNG VIỆT

VN

Phương pháp tổn thương (lesioning) chủ động phá huỷ một vùng não cụ thể (ở động vật nghiên cứu) để quan sát chức năng nào bị mất. Ở người, các **nguyên cứu trường hợp (case study)** về tổn thương não tự nhiên – nổi tiếng nhất là **Phineas Gage** (1848, một thanh sắt xuyên qua vỏ trước trán) – cho thấy vỏ trước trán liên quan đến tính cách và khả năng kiểm soát hành vi, vì sau tai nạn tính cách của Gage thay đổi rõ rệt dù trí nhớ và ngôn ngữ vẫn bình thường.

1.10.2 Modern Neuroimaging and Stimulation Techniques

Modern tools allow researchers to study the living brain directly, without waiting for natural damage to occur. These tools differ in whether they reveal brain **structure** (anatomy) or brain **function** (activity), and in their spatial resolution (how precisely they can localize an effect) and temporal resolution (how precisely they can track timing).

Brain research tools

- **EEG (electroencephalogram)** – electrodes on the scalp record ongoing general electrical activity across broad regions of the brain. Excellent temporal resolution (can track brain activity millisecond by millisecond, useful for studying sleep stages) but poor spatial resolution (cannot pinpoint the precise source of activity).
- **CT scan (computed tomography)** – combines multiple X-ray images to produce a detailed cross-sectional structural image. Fast and useful for detecting structural abnormalities (tumors, bleeding), but shows only **structure**, not activity, and involves exposure to ionizing radiation.
- **MRI (magnetic resonance imaging)** – uses magnetic fields and radio waves to produce highly detailed structural images of soft tissue. Much better resolution than CT and no radiation exposure, but shows only **structure** (a static picture), not ongoing activity, and requires the patient to remain very still inside a strong magnet (incompatible with certain metal implants).
- **fMRI (functional MRI)** – tracks changes in blood oxygen flow to active brain areas over time, revealing which regions are working during a specific task. Good spatial resolution and shows **function**, but the blood-flow signal lags a few seconds behind the actual neural activity (weaker temporal resolution than EEG).
- **PET scan (positron emission tomography)** – tracks a small amount of injected radioactive glucose to reveal which brain areas are metabolically most active. Shows **function**, but requires radioactive tracer injection and offers weaker spatial and temporal resolution than fMRI.
- **TMS (transcranial magnetic stimulation)** – magnetic pulses delivered through the scalp temporarily excite or disrupt activity in a targeted surface region of the cortex, allowing researchers to observe the effect of briefly "turning off" or stimulating that region. Non-invasive and allows researchers to test function causally (not just observe correlated activ-

ity), but can only reach surface cortical areas and effects are temporary.

Tool	Structure or function?	Key strength	Key limitation
EEG	Function	Excellent temporal resolution (millisecond-level)	Poor spatial resolution
CT scan	Structure	Fast; detects structural abnormalities	No functional info; radiation exposure
MRI	Structure	High-resolution detailed structural image; no radiation	No functional info; patient must stay still
fMRI	Function (+ structure)	Good spatial resolution of active regions	Weak temporal resolution (lag of a few seconds)
PET	Function	Shows metabolic activity directly	Invasive tracer injection; weaker resolution than fMRI
TMS	Function (causal manipulation)	Can test function by temporarily disrupting a region	Reaches only surface cortex; temporary effect

Ví dụ mẫu · Choosing the right tool for a research question

For each research question, identify the most appropriate tool: (a) A neurologist suspects a patient has a brain tumor and needs a detailed anatomical picture. (b) A cognitive psychologist wants to know which brain regions become active while a participant solves math problems, with good spatial precision. (c) A sleep researcher wants to track the brain's electrical activity, moment by moment, across a full night's sleep. (d) A researcher wants to test whether a specific region of the motor cortex is *necessary* for a particular hand movement, not just correlated with it.

(a) MRI (or CT) – a purely structural question, and MRI gives higher-resolution detail of soft tissue than CT without radiation exposure. **(b) fMRI** – a functional, spatially precise question about which regions activate during a task. **(c) EEG** – tracking rapidly changing activity over many hours requires excellent temporal resolution, which EEG (not fMRI or PET) provides. **(d) TMS** – only a technique that can *disrupt* a region and observe the causal behavioral consequence (not just observe correlated activity) can test necessity, which distinguishes TMS from the purely observational imaging tools.

GIẢI THÍCH TIẾNG VIỆT

VN

Các công cụ nghiên cứu não chia thành nhóm đo **cấu trúc** (CT, MRI – hình ảnh giải phẫu tĩnh, không cho biết vùng nào "đang hoạt động") và nhóm đo **chức năng** (EEG, fMRI, PET, TMS – cho biết hoạt động não theo thời gian thực hoặc theo nhiệm vụ). **EEG** có độ phân giải *thời gian* tốt nhất nhưng độ phân giải *không gian* kém; **fMRI** thì ngược lại. **TMS** đặc biệt vì có thể *can thiệp trực tiếp* (kích thích hoặc gây rối loạn tạm thời một vùng não) để kiểm tra quan hệ nhân quả, không chỉ quan sát tương quan.

(!) Lỗi thường gặp: Lỗi thường gặp: cho rằng "công cụ hiện đại hơn thì luôn tốt hơn." Trên thực tế, không có công cụ nào vượt trội ở *mọi mặt* – **EEG** vẫn được ưa chuộng hơn fMRI khi cần độ phân giải *thời gian* cực cao (ví dụ nghiên cứu giấc ngủ); **MRI** vẫn được ưu tiên hơn CT khi cần hình ảnh cấu trúc mô mềm chi tiết mà không muốn phơi nhiễm tia X. Khi trả lời câu hỏi "công cụ nào phù hợp nhất," luôn cần xét câu hỏi nghiên cứu cụ thể là về *cấu trúc hay chức năng*, và

cần độ phân giải không gian hay thời gian hơn.

1.11 Sensation and Perception

1.11.1 Sensation, Perception, and Transduction

Sensation is the raw process by which sensory receptors and the nervous system detect physical stimulus energy from the environment (light, sound waves, pressure, chemicals). **Perception** is the subsequent process of organizing and interpreting that raw sensory information so that it becomes meaningful. The two are closely linked but distinct: sensation is largely a bottom-up, biological process common across individuals with typical sensory organs, while perception is shaped by attention, expectation, prior knowledge, and context, and so can differ between individuals even when the raw sensory input is identical (an ambiguous figure, for instance, can be perceived in more than one way from the exact same sensory information).

The process by which sensory receptor cells convert physical stimulus energy (light waves, sound waves, chemical molecules, mechanical pressure) into neural impulses the nervous system can process is called **transduction**. Transduction occurs at the first stage of every sensory system – for example, receptor cells in the retina transduce light energy into neural signals, and hair cells in the cochlea transduce mechanical vibration into neural signals.

The senses do not operate in complete isolation; **sensory interaction** refers to the way one sense can influence how another sense is interpreted. A well-known demonstration is the **McGurk effect**: when a video of a person's mouth clearly forming one syllable (e.g., "ga") is dubbed with an audio recording of a different syllable (e.g., "ba"), viewers often perceive a third, blended syllable (e.g., "da") – the visual information about mouth movement is automatically integrated with the auditory information, changing what is actually "heard," which demonstrates that perception (even of something as basic as a spoken sound) is not determined by a single sense in isolation.

GIẢI THÍCH TIẾNG VIỆT

VN

Tương tác cảm giác (sensory interaction) là hiện tượng một giác quan ảnh hưởng đến cách một giác quan khác được diễn giải – ví dụ điển hình là **hiệu ứng McGurk (McGurk effect)**: khi hình ảnh miệng phát âm một âm tiết được lồng ghép với âm thanh của một âm tiết khác, người xem thường "nghe" ra một âm tiết thứ ba, pha trộn cả hai – cho thấy tri giác âm thanh chịu ảnh hưởng trực tiếp từ thông tin thị giác, không hoạt động hoàn toàn độc lập.

GIẢI THÍCH TIẾNG VIỆT

VN

Cảm giác (sensation) là quá trình cơ quan cảm giác phát hiện năng lượng kích thích vật lý từ môi trường; **tri giác (perception)** là quá trình *tổ chức và diễn giải* thông tin cảm giác đó để tạo ra ý nghĩa – chịu ảnh hưởng của sự chú ý, kỳ vọng, và kinh nghiệm trước đó, nên có thể khác nhau giữa các cá nhân dù nhận cùng một kích thích. **Chuyển đổi (transduction)** là quá trình chuyển năng lượng kích thích vật lý (ánh sáng, âm thanh, hoá chất, áp lực) thành xung thần kinh.

1.11.2 Thresholds and Sensory Adaptation

The **absolute threshold** is the minimum intensity of a stimulus required for a person to detect it 50% of the time. The **difference threshold** (or **just noticeable difference, JND**) is the minimum difference between two stimuli required for a person to detect that they are different 50% of the time. **Weber's Law** describes a consistent pattern in difference thresholds: the JND is not a fixed, constant *amount*, but rather a constant *proportion* (percentage) of the original stimulus's magnitude. This is why a small change is easy to detect against a weak background stimulus but the same-sized absolute change becomes undetectable against an already-intense background stimulus – what matters is the *ratio* of the change to the original intensity.

Weber's Law: $\frac{\Delta I}{I} = k$, where I is the original stimulus intensity, ΔI is the just noticeable difference, and k (the Weber fraction) is a constant specific to that type of sensory judgment.

Ví dụ mẫu · Applying Weber's Law

The Weber fraction for detecting a change in weight is about $k = 0.02$ (2%). (a) If a person is holding a 500 g object, how much weight must be added before they can just notice the object got heavier? (b) If instead they are holding a 2000 g object, how much weight must be added this time to reach the same just-noticeable difference?

Using $\Delta I = kI$: (a) $\Delta I = 0.02 \times 500 \text{ g} = 10 \text{ g}$ — only 10 g must be added to the 500 g object for the change to be just noticeable. (b) $\Delta I = 0.02 \times 2000 \text{ g} = 40 \text{ g}$ — a much larger 40 g must now be added to the heavier 2000 g object to produce an equally just-noticeable difference. This illustrates Weber's Law directly: the *absolute* amount needed to notice a difference scales up proportionally with the starting intensity, even though the *percentage* change required (2%) stays constant.

GIẢI THÍCH TIẾNG VIỆT

VN

Ngưỡng tuyệt đối (absolute threshold): cường độ kích thích tối thiểu để phát hiện được 50% số lần. **Ngưỡng phân biệt / JND (difference threshold / just noticeable difference):** mức khác biệt tối thiểu giữa hai kích thích để phân biệt được 50% số lần. **Định luật Weber (Weber's Law):** JND là một tỷ lệ phần trăm không đổi của cường độ kích thích ban đầu ($\Delta I/I = k$), không phải một lượng cố định — kích thích ban đầu càng lớn thì lượng thay đổi cần thiết để nhận ra sự khác biệt càng lớn.

Signal detection theory extends the idea of thresholds by recognizing that detecting a faint stimulus depends not only on its intensity but also on the observer's experience, expectations, motivation, and current alertness — there is no single fixed threshold that applies identically in every context. Signal detection experiments classify every trial into one of four outcomes: a **hit** (stimulus present, correctly detected), a **miss** (stimulus present, not detected), a **false alarm** (stimulus absent, incorrectly "detected"), or a **correct rejection** (stimulus absent, correctly not detected).

		Participant says "yes, detected"	Participant says "no, not detected"
Stimulus present	actually	Hit	Miss
Stimulus absent	actually ab-	False alarm	Correct rejection

Ví dụ mẫu · Classifying signal detection outcomes

A radiologist reviews 100 mammogram scans, 10 of which actually contain a tumor. The radiologist flags 12 scans as containing a tumor; of those, 8 are among the 10 scans that truly contain a tumor. Classify the number of hits, misses, false alarms, and correct rejections.

Hits (tumor present, correctly flagged): 8. **Misses** (tumor present, not flagged): $10 - 8 = 2$. **False alarms** (no tumor present, incorrectly flagged): $12 - 8 = 4$. **Correct rejections** (no tumor present, correctly not flagged): the $100 - 10 = 90$ scans without a tumor, minus the 4 false alarms = 86. Checking the total: $8 + 2 + 4 + 86 = 100$, matching all 100 scans.

Finally, **sensory adaptation** is the diminished sensitivity to an unchanging stimulus that results from constant, prolonged exposure to it — for instance, no longer noticing the hum of a running air conditioner a few minutes after entering a room, even though the sound has not changed at all. Adaptation is adaptive because it frees attention to notice *new or changing* stimuli, which are typically more informative than stimuli that have remained constant.

GIẢI THÍCH TIẾNG VIỆT

VN

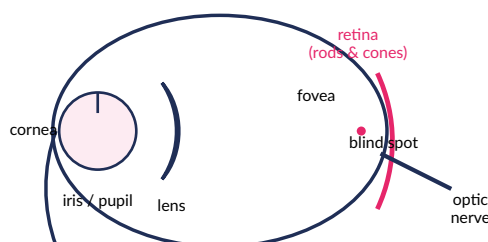
Lý thuyết phát hiện tín hiệu (signal detection theory) cho rằng việc phát hiện một kích thích yếu phụ thuộc không chỉ vào cường độ kích thích mà còn vào kinh nghiệm, kỳ vọng, động lực, và mức tỉnh táo của người quan sát; kết quả mỗi lượt thử được phân loại thành **hit** (phát hiện đúng), **miss** (bỏ lỡ), **false alarm** (báo động giả), hoặc **correct rejection** (loại bỏ đúng). **Thích nghi cảm giác (sensory adaptation)** là hiện tượng giảm nhạy cảm với kích thích không đổi sau khi tiếp xúc kéo dài, giúp giải phóng sự chú ý cho các kích thích mới.

1.11.3 Vision

Light enters the eye through the transparent **cornea**, which begins bending (refracting) the light, then passes through the **pupil**, an opening whose size is controlled by the surrounding colored muscle, the **iris** (constricting in bright light, dilating in dim light). Behind the pupil, the **lens** fine-tunes focus by changing shape (accommodation) to project a sharp image onto the **retina**, the light-sensitive inner surface at the back of the eye where transduction occurs.

The retina contains two types of photoreceptor cells. **Rods** are far more numerous, are highly sensitive in dim light, and detect only black-and-white/brightness information — critical for peripheral and night vision, but they cannot support fine detail or color. **Cones** require brighter light, detect fine detail and **color**, and are concentrated in the **fovea**, the small central point of the retina responsible for our sharpest vision (which is why looking directly at something in dim light is often *harder* than looking slightly to the side of it — the periphery is rod-dominated). Signals from the retina's photoreceptors are relayed through several intermediate layers of cells and gathered into the **optic nerve**, which carries visual information out of the eye toward the thalamus and visual cortex. The point where the optic nerve exits the eye contains no photoreceptors at all, creating a **blind spot** in each eye's visual field (normally unnoticed because the brain fills in the gap and the other eye compensates).

Two classic, complementary theories explain color vision. The **trichromatic theory** (Young-Helmholtz) proposes that the retina contains three distinct types of cones, each maximally sensitive to a different wavelength range roughly corresponding to red, green, or blue light; the brain determines perceived color from the specific combination and relative intensity of signals across these three cone types. This theory explains color mixing well but cannot, by itself, explain **negative after-images** — briefly seeing the complementary color (e.g., a green-and-black afterimage after staring at a red-and-white image) after staring at a colored image and then looking at a blank white surface. The **opponent-process theory** (Hering) explains this: further along the visual pathway, cells are organized into opposing color pairs (red-green, blue-yellow, black-white); staring at one color fatigues its "on" response, so when the eye shifts to a neutral surface, the opposing member of that pair fires in rebound, producing the complementary-colored afterimage. Modern research confirms that both theories are correct, but describe **different stages** of visual processing: trichromatic coding occurs first, at the level of the three cone types in the retina; opponent-process coding occurs afterward, at the level of ganglion cells and neurons further along the visual pathway (including the thalamus).



Schematic cross-section of the eye: light passes through the cornea, pupil (sized by the iris), and lens before striking the retina; the fovea is the point of sharpest vision, and the optic nerve exits at the blind spot.

Ví dụ mẫu · Explaining a negative afterimage

A student stares at a picture of a yellow banana printed on a blue background for 30 seconds, then looks away at a blank white wall. They briefly see an afterimage of a blue banana on a yellow background. Explain this using opponent-process theory.

According to **opponent-process theory**, color is coded (at a stage beyond the retina's cones) by opposing neuron pairs, including a blue–yellow pair. Staring steadily at the yellow banana fatigues the neurons responsible for the "yellow" response in that pair, and staring at the blue background fatigues the "blue" response over the surrounding area. When the student then looks at a neutral white surface, the fatigued "yellow" neurons fire weakly while their unfatigued opposing "blue" partners fire in a rebound response over the banana-shaped region — and vice versa over the background — producing a brief afterimage in which the colors are reversed: a **blue banana on a yellow background**.

GIẢI THÍCH TIẾNG VIỆT

VN

Ánh sáng đi qua **giác mạc (cornea)** → **con ngươi (pupil)** (kích thước do **mống mắt/iris** điều chỉnh) → **thủy tinh thể (lens)** (điều tiết để lấy nét) → **võng mạc (retina)**, nơi có hai loại tế bào thụ cảm: **tế bào hình que (rods)** — nhạy với ánh sáng yếu, chỉ thấy đen trắng, phụ trách tầm nhìn ngoại vi/ban đêm; **tế bào hình nón (cones)** — cần nhiều sáng hơn, thấy màu và chi tiết, tập trung ở **hố trung tâm (fovea)**. **Dây thần kinh thị giác (optic nerve)** truyền tín hiệu ra khỏi mắt; điểm nó thoát ra không có tế bào thụ cảm nên tạo **điểm mù (blind spot)**. **Thuyết ba màu (trichromatic — Young-Helmholtz)**: có 3 loại tế bào nón (đỏ, lục, lam). **Thuyết đối lập (opponent-process — Hering)**: các cặp đối lập (đỏ–lục, lam–vàng, đen–trắng) giải thích **ảo ảnh lưu (afterimage)**. Cả hai thuyết đều đúng, chỉ khác nhau ở *giai đoạn xử lý thị giác*.

Color blindness most often results from a genetic anomaly (linked to genes on the X chromosome, which is why it is substantially more common in men — consistent with Section 1.5's discussion of heredity) that causes one or more cone types to be missing or to respond abnormally; the most common form, red-green color blindness, results from red and green cones responding too similarly to distinguish those wavelengths well, rather than any problem with the eye's optics or the rods.

(!) Lỗi thường gặp: Học sinh thường nghĩ chỉ *một* thuyết màu sắc là đúng, còn thuyết kia bị "bác bỏ." Sai — **thuyết ba màu** và **thuyết đối lập** không loại trừ nhau, mà mô tả **hai giai đoạn khác nhau** của cùng một hệ thống: thuyết ba màu đúng ở tầng tế bào nón trên võng mạc; thuyết đối lập đúng ở tầng tế bào hạch (ganglion cells) và các neuron xử lý sau đó. AP Psychology thường hỏi câu "cả hai thuyết đều cần thiết để giải thích đầy đủ hiện tượng nào" — câu trả lời chuẩn là **ảo ảnh lưu màu (color afterimages)**.

1.11.4 Hearing

Sound waves are funneled by the outer ear (pinna) down the ear canal to the **eardrum (tympanic membrane)**, a taut membrane that vibrates in response. These vibrations pass to three tiny bones

of the **middle ear** — the hammer (malleus), anvil (incus), and stirrup (stapes) — which mechanically amplify the vibration and transmit it to the **cochlea**, a fluid-filled, coiled tube in the **inner ear**. Inside the cochlea, vibrations ripple through the fluid and bend tiny **hair cells** lining the basilar membrane; this bending is the point of **transduction**, converting mechanical vibration into neural impulses that travel via the auditory nerve to the brain.

Two theories explain how pitch (frequency) is coded. **Place theory** proposes that different frequencies of sound waves stimulate hair cells at different specific locations along the basilar membrane, and the brain determines pitch from *which* location is most active — this explains high-pitched sound perception well but fails for very low-pitched sounds, which stimulate the basilar membrane too broadly and diffusely to pinpoint a location. **Frequency theory** proposes instead that the basilar membrane vibrates, and hair cells fire, at the *same rate* as the sound wave's frequency, so the brain determines pitch from the *rate* of neural firing — this explains low-pitched sounds well, but individual neurons cannot physically fire faster than about 1,000 times per second, which is too slow to directly code the very high frequencies humans can still hear. The **volley principle** resolves this: for high frequencies, neighboring neurons take turns firing in a staggered, alternating ("volley") pattern, so that their *combined* firing rate can still keep pace with a frequency beyond what any single neuron alone could achieve. Modern understanding treats place theory as most relevant to higher frequencies and frequency theory (aided by the volley principle) as most relevant to lower-to-moderate frequencies.

Ví dụ mẫu · Choosing the right theory of pitch

A very low-pitched bass note (around 50 Hz) and a very high-pitched note (around 8,000 Hz) are both played. Explain which theory of pitch perception best explains how each is coded by the auditory system.

The very high-pitched 8,000 Hz note is best explained by **place theory**: at such a high frequency, the sound wave creates a sharply localized point of maximum vibration on the basilar membrane, and the brain reads pitch from *where* that peak activity occurs. The very low-pitched 50 Hz note is best explained by **frequency theory** (supported by the volley principle if needed): at such a low frequency, well within what neurons can track directly, hair cells and auditory neurons can fire at essentially the same rate as the sound wave itself, letting the brain read pitch directly from the *rate* of neural firing rather than from vibration location.

Hearing loss is broadly classified by which stage of this pathway is damaged. **Conductive hearing loss** results from damage to the mechanical conduction of sound in the outer or middle ear (e.g., a damaged eardrum or ossicles) — sound is not being transmitted efficiently to the cochlea, so hearing aids that amplify incoming sound are often effective, since the cochlea and auditory nerve themselves are intact. **Sensorineural hearing loss** results from damage to the cochlea's hair cells or to the auditory nerve itself — often from age or prolonged exposure to loud noise — and because the transduction system itself is damaged, simple amplification (hearing aids) is often less effective; a cochlear implant, which electronically stimulates the auditory nerve directly, bypassing the damaged hair cells, may be used in more severe cases.

GIẢI THÍCH TIẾNG VIỆT

VN

Mất thính lực dẫn truyền (conductive hearing loss): tổn thương ở tai ngoài/tai giữa (màng nhĩ, xương con) làm giảm hiệu quả truyền âm đến ốc tai — máy trợ thính khuếch đại âm thanh thường hiệu quả vì ốc tai và dây thần kinh thính giác vẫn còn nguyên vẹn. **Mất thính lực thần kinh cảm giác (sensorineural hearing loss):** tổn thương tế bào lông ở ốc tai hoặc dây thần kinh thính giác (thường do lão hoá hoặc tiếng ồn lớn kéo dài) — máy trợ thính đơn thuần kém hiệu quả hơn vì bản thân hệ thống chuyển đổi bị tổn thương; trường hợp nặng có thể cần **cấy điện cực ốc tai (cochlear implant)**.

GIẢI THÍCH TIẾNG VIỆT

VN

Sóng âm đi qua tai ngoài → **màng nhĩ (eardrum)** rung động → ba xương nhỏ ở tai giữa khuếch đại rung động → **ốc tai (cochlea)** ở tai trong, nơi **tế bào lông (hair cells)** thực hiện chuyển đổi (transduction). **Thuyết vị trí (place theory)**: âm cao kích thích một vị trí cụ thể trên màng đáy – giải thích tốt âm *cao*. **Thuyết tần số (frequency theory)**: tốc độ phát xung neuron khớp với tần số sóng âm – giải thích tốt âm *thấp*, nhưng neuron đơn lẻ không thể phát xung nhanh hơn ≈ 1000 lần/giây; **nguyên lý phát xung luân phiên (volley principle)** giải quyết vấn đề này bằng cách để các neuron lần lượt thay phiên nhau phát xung.

1.11.5 Touch, Taste, Smell, and Body Senses

The skin senses combine several distinct receptor types that detect pressure, warmth, cold, and pain, which combine to produce the full range of tactile experience. **Pain** perception is explained in part by the **gate-control theory** of Ronald **Melzack** and Patrick **Wall** (1965): the spinal cord contains a neurological "gate" that can either allow pain signals through to the brain or block them. Activity in large, fast-conducting nerve fibers (such as those activated by rubbing or pressure) can close this gate, which is why rubbing a stubbed toe or bumped elbow reduces the perceived pain; psychological factors such as attention, emotional state, and expectation can also open or close the gate, explaining why the same physical injury can feel more or less painful depending on context (e.g., a soldier who does not notice a wound during intense battle).

Taste (gustation) is detected by taste buds on the tongue sensitive to five basic taste qualities: sweet, sour, salty, bitter, and umami (savory). **Smell (olfaction)** is detected by receptor cells high in the nasal cavity that respond to airborne chemical molecules; uniquely among the senses, smell signals bypass the thalamus and connect directly to the limbic system (including structures involved in emotion and memory), which helps explain why smells are often powerfully linked to emotional memories.

The body also senses its own position and movement. **Kinesthesia** is the sense of the position and movement of individual body parts, relying on receptors in the muscles, tendons, and joints. The **vestibular sense** is the sense of balance and overall body orientation/motion, monitored by fluid-filled structures in the inner ear (the semicircular canals and vestibular sacs), which is why spinning in place and then stopping produces a temporary, disorienting sense of continued motion.

Ví dụ mẫu · Applying gate-control theory

After stubbing a toe hard on a table leg, a person immediately, reflexively grabs and rubs the toe. Explain, using gate-control theory, why rubbing tends to reduce the perceived intensity of the pain.

Stubbing the toe activates small, slow-conducting nerve fibers that carry pain signals toward a "gate" in the spinal cord; if the gate is open, these signals pass through to the brain and are experienced as pain. Rubbing the toe activates large, fast-conducting nerve fibers responsible for touch/pressure sensation, which travel to the same spinal gate. According to **gate-control theory**, activity in these large touch fibers can **close the gate**, partially blocking the slower pain signals from reaching the brain – reducing the perceived intensity of pain, even though the underlying tissue injury is unchanged.

Ví dụ mẫu · The vestibular sense and motion sickness

Passengers reading a book in the back seat of a moving car (with no view out the window) frequently develop nausea, while the driver – who can see the road ahead – typically does not. Explain this using the concept of the vestibular sense.

The **vestibular sense** (via the inner ear) continuously registers the car's actual acceleration, turns, and stops, while the passenger's eyes, fixed on a stationary book, signal to the visual system that the body is *not* moving. This mismatch between vestibular input ("we are moving") and visual input ("we are still") is widely believed to produce the disorientation and nausea of motion sickness. The driver, by contrast, sees the road and surroundings move in a way that matches the vestibular sense's signal of actual motion, so the two sources of sensory information agree, and motion sickness is much less likely.

GIẢI THÍCH TIẾNG VIỆT

VN

Thuyết cổng kiểm soát đau (gate-control theory) của Melzack và Wall cho rằng tuỷ sống có một "cổng" thần kinh có thể chặn hoặc cho tín hiệu đau đi qua đến não; hoạt động của các sợi thần kinh lớn (do chạm/xoa) có thể **đóng cổng** này, làm giảm cảm giác đau — giải thích vì sao xoa vào vùng bị đau lại giúp giảm đau. **Vị giác (taste)** có 5 vị cơ bản: ngọt, chua, mặn, đắng, umami. **Khứu giác (smell/olfaction)** là giác quan duy nhất kết nối trực tiếp với hệ viền mà không qua đồi thị, giải thích liên hệ mạnh giữa mùi và cảm xúc/ký ức. **Cảm giác vận động cơ thể (kinesthesia)** cảm nhận vị trí/chuyển động các bộ phận cơ thể; **cảm giác thăng bằng (vestibular sense)** theo dõi sự thăng bằng và định hướng cơ thể qua cấu trúc ở tai trong.

(!) Lỗi thường gặp: Nhiều học sinh nghĩ có đúng "5 giác quan" — sai, đây là ngộ nhận phổ biến. Ngoài thị giác, thính giác, vị giác, khứu giác, và xúc giác, tâm lý học còn công nhận thêm **cảm giác vận động cơ thể (kinesthesia)** và **cảm giác thăng bằng (vestibular sense)** là các giác quan riêng biệt, với cơ quan thụ cảm và cơ chế thần kinh chuyên biệt của chúng.

1.11.6 Gestalt Principles of Perceptual Organization

The early twentieth-century **Gestalt** psychologists argued that "the whole is different from the sum of its parts" — the mind does not simply register isolated sensory fragments but automatically organizes them into coherent, meaningful wholes. The most basic Gestalt principle is **figure-ground**: the tendency to organize any visual scene into a central object of focus (the figure) that stands out against everything else (the ground), as in the classic reversible face/vase illusion. Beyond figure-ground, several principles describe how we group individual elements together.

Gestalt principle	Description
Figure-ground	The visual field is organized into a focal figure and a background
Proximity	Elements located physically close together are perceived as a group
Similarity	Elements that look alike (color, shape, size) are perceived as a group
Closure	The mind fills in small gaps to perceive a complete, whole shape
Continuity	The mind perceives smooth, continuous patterns rather than abrupt, disjointed ones



Schematic illustrations of proximity (dots cluster into two groups by distance), similarity (dots group by color, not row), closure (incomplete arcs perceived as a circle), and continuity (a single smooth curve rather than disconnected segments).

Ví dụ mẫu · Identifying a Gestalt principle

A string of holiday lights is arranged so that every third bulb is red and the rest are white, evenly spaced along the string. Viewers spontaneously perceive the red bulbs as forming their own separate visual group, distinct from the white bulbs, even though every bulb is equally spaced from its neighbors. Which Gestalt principle explains this, and why is it *not* proximity?

This is best explained by the principle of **similarity**: because the bulbs are stated to be “evenly spaced,” proximity (physical distance) cannot be driving the grouping — every bulb is equidistant from its neighbors regardless of color. Instead, viewers group the red bulbs together and the white bulbs together purely on the basis of their shared visual feature (color), which is the defining signature of the similarity principle.

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Các nhà tâm lý học **Gestalt** cho rằng “toàn thể khác với tổng các phần riêng lẻ” — tâm trí tự động tổ chức thông tin cảm giác rời rạc thành các hình mẫu có ý nghĩa. **Nền-hình (figure-ground)**: tách một “hình” nổi bật khỏi “nền” xung quanh. **Tính gần nhau (proximity)**: các phần tử gần nhau được nhóm lại. **Tính tương đồng (similarity)**: các phần tử giống nhau (màu, hình dạng) được nhóm lại. **Tính khép kín (closure)**: tâm trí tự “lấp đầy” khoảng trống để thấy một hình hoàn chỉnh. **Tính liên tục (continuity)**: ta có xu hướng nhìn thấy các mẫu hình trơn tru, liên tục hơn là rời rạc, đứt đoạn.

1.11.7 Depth Perception

Depth perception is the ability to perceive the visual world in three dimensions, judging the relative distance of objects, despite the retina itself only registering two-dimensional patterns of light. **Binocular cues** require input from both eyes together: **retinal disparity** refers to the slightly different image each eye receives of the same scene (due to their different positions on the head) — the greater the disparity between the two retinal images, the closer the object; **convergence** refers to the inward turning of the eyes required to focus on a nearby object, which produces a muscular sensation the brain uses as a distance cue (greater convergence signals a closer object).

Monocular cues, by contrast, can be used with just one eye and include several drawn from the visual scene itself: **relative size** (if two objects are assumed to be the same actual size, the one that casts a smaller retinal image is perceived as farther away); **interposition** (an object that partially blocks another is perceived as closer); **linear perspective** (parallel lines, such as railroad tracks, appear to converge with increasing distance, and greater apparent convergence signals greater distance); and **texture gradient** (a surface’s texture appears progressively finer and less detailed with increasing distance, as in a field of grass or gravel receding toward the horizon).

Ví dụ mẫu · Identifying depth cues in a painting

A landscape painting shows two identical-looking houses of the same painted size, but one is positioned higher on the canvas and partially overlaps/blocks a fence in front of it, while train tracks running through the scene visibly narrow as they approach the horizon. List the monocular depth cues present and what each communicates about depth.

Interposition: the house that overlaps and blocks part of the fence is perceived as *closer* than the fence. **Linear perspective**: the train tracks narrowing toward the horizon communicate increasing distance — the point where they appear to converge signals the farthest visible distance in the scene. (Relative size is not clearly used here, since both houses are described as the same size; if one house instead appeared noticeably smaller while still assumed to be the same actual size, that would signal it is farther away.) None of these cues requires two

eyes, which is why they remain effective even in a flat, two-dimensional painting.

GIẢI THÍCH TIẾNG VIỆT

VN

Tri giác độ sâu (depth perception) dựa vào: **gợi ý hai mắt (binocular cues)** — sự khác biệt võng mạc (retinal disparity) (hai mắt nhận hình ảnh hơi khác nhau, khác biệt lớn hơn = vật gần hơn) và **sự hội tụ (convergence)** (mắt quay vào trong nhiều hơn khi nhìn vật gần); và **gợi ý một mắt (monocular cues)** — kích thước tương đối (relative size), sự che khuất (interposition), phối cảnh tuyến tính (linear perspective) (các đường thẳng song song hội tụ ở xa), và độ chi tiết bề mặt giảm dần theo khoảng cách (texture gradient).

1.11.8 Perceptual Constancy, Selective Attention, and Inattentional Blindness

Perceptual constancy is the tendency to perceive objects as stable and unchanging even as the raw sensory information they produce changes. **Size constancy** is perceiving an object as the same actual size regardless of its distance (and therefore its changing retinal image size) — a car does not seem to physically shrink as it drives away. **Shape constancy** is perceiving an object as having the same shape despite changes in the retinal image caused by viewing it from different angles — a door is still perceived as rectangular whether viewed head-on or ajar, even though the ajar door casts a trapezoidal retinal image. **Color constancy** (and the closely related brightness constancy) is perceiving an object's color as stable despite changes in lighting conditions that alter the actual wavelengths of light reflected from it.

Perception is also fundamentally selective. **Selective attention** is the focusing of conscious awareness on a particular stimulus while filtering out competing information, illustrated by the **cocktail party effect** — the ability to focus on and follow one conversation in a noisy room full of competing voices, while nonetheless remaining able to notice highly salient information (such as hearing one's own name spoken elsewhere in the room). Because attention is limited, unattended information is often not consciously processed at all — this can lead to **inattentional blindness**, the failure to notice a fully visible but unexpected object or event because attention is completely engaged elsewhere. The best-known demonstration is the "invisible gorilla" study by **Daniel Simons and Christopher Chabris (1999)**: participants were asked to watch a video and count the number of passes made by a basketball team and, while doing so, roughly half failed to notice a person in a full gorilla suit walking directly through the middle of the scene. A related phenomenon, **change blindness**, is the failure to notice that a substantial part of a visual scene has changed between two views, again because attention was not directed to the changed element at the critical moment.

Ví dụ mẫu · Applying inattentional blindness

A driver focused intently on reading a text message at a red light fails to notice a pedestrian clearly crossing directly in front of the car when the light turns green. Explain this using the concept of inattentional blindness, and explain why this differs from a simple vision/sensation problem.

This is a case of **inattentional blindness**, not a sensation problem: the pedestrian is fully within the driver's visual field and there is nothing wrong with the driver's eyes or visual sensory pathway (the light reflected from the pedestrian is reaching the retina normally). The failure occurs because the driver's limited attentional resources are entirely absorbed by the phone, leaving no attentional capacity to consciously register the unexpected, unattended stimulus (the pedestrian) — echoing the "invisible gorilla" finding that even a large, fully visible, moving object can go completely unnoticed when attention is engaged elsewhere.

Ví dụ mẫu · Size constancy, distance cues, and the moon illusion

The full moon appears noticeably larger when it is near the horizon than when it is high overhead, even though its actual retinal image size is essentially identical in both cases (and its true physical size and distance from Earth barely change). Explain this illusion in terms of size constancy and monocular depth cues.

Normally, **size constancy** works by combining an object's retinal image size with perceived distance cues to judge its true size. Near the horizon, the moon is viewed alongside distant terrain, buildings, or trees that provide strong monocular depth cues (relative size, linear perspective, texture gradient) suggesting a very large sense of distance to the horizon itself; the brain essentially judges the moon must be "far away and therefore large" to still produce the retinal image size it does. Overhead, the moon is surrounded only by empty sky with no comparative depth cues, so the brain has no basis to judge it as being especially far away, and perceives it as smaller. The illusion demonstrates that perceived size depends heavily on *perceived distance*, which itself depends on the depth cues available in the surrounding visual context — not on the retinal image size alone.

GIẢI THÍCH TIẾNG VIỆT

VN

Hằng tri giác (perceptual constancy): nhận thức một vật thể là ổn định dù thông tin cảm giác thô thay đổi — gồm **hằng kích thước (size)**, **hằng hình dạng (shape)**, **hằng màu sắc (color)**. **Chú ý chọn lọc (selective attention):** tập trung ý thức vào một kích thích trong khi lọc bỏ thông tin khác — ví dụ **hiệu ứng tiệc cocktail (cocktail party effect)**. **Mù do không chú ý (inattention blindness):** không nhận ra một vật/sự kiện hoàn toàn nhìn thấy được vì sự chú ý đang dồn vào nơi khác — nghiên cứu nổi tiếng nhất là thí nghiệm "**con khỉ đột vô hình**" (**invisible gorilla**) của **Daniel Simons và Christopher Chabris (1999)**, trong đó khoảng một nửa người xem không nhận ra một người mặc trang phục khỉ đột đi qua màn hình khi họ đang tập trung đếm số lần chuyền bóng. **Mù do thay đổi (change blindness)** là hiện tượng liên quan — không nhận ra sự thay đổi lớn trong cảnh vật.

(!) Lỗi thường gặp: Đừng nhầm **mù do không chú ý (inattention blindness)** với một vấn đề về *cảm giác* (sensation) — ví dụ thị lực kém hay mắt bị che khuất. Trong các thí nghiệm như "con khỉ đột vô hình," kích thích hoàn toàn nằm trong tầm nhìn và mắt vẫn tiếp nhận đủ ánh sáng phản xạ từ nó — vấn đề nằm ở *tri giác/chú ý*, cụ thể là nguồn lực chú ý có hạn đã bị chiếm hết bởi nhiệm vụ chính, không còn "băng thông" để đưa kích thích không liên quan vào nhận thức có ý thức.

1.12 Problem Bank**Bài tập luyện tập**

Wilhelm Wundt is credited with founding psychology as a formal science primarily because he:

- | | |
|---|--|
| (A) Proposed the theory of natural selection applied to behavior | (C) Developed the technique of psychoanalysis |
| (B) Opened the first psychology laboratory and used introspection to study conscious experience | (D) Demonstrated that fears could be classically conditioned |

Lời giải chi tiết

Wundt opened the first formal psychology laboratory at the University of Leipzig in 1879, using introspection to study the structure of conscious experience — the founding moment of psychology as an independent empirical science. Natural selection applied to behavior is the evolutionary perspective; psychoanalysis is Freud's method; classical conditioning of fear is Watson's "Little Albert" work. **(B)**.

Bài tập luyện tập

Unlike structuralism, functionalism (William James) focused primarily on:

- | | |
|---|---|
| (A) Breaking consciousness down into its most basic elements | (C) Unconscious conflicts from early childhood |
| (B) The adaptive purpose that mental processes and behavior serve | (D) The role of reinforcement in shaping behavior |

Lời giải chi tiết

Structuralism (Wundt/Titchener) asked "what are the basic elements of the mind?" Functionalism, influenced by Darwin, instead asked "why does the mind work this way — what adaptive function does it serve?" Unconscious conflict is Freud's psychodynamic focus; reinforcement is Skinner's behaviorist focus. **(B)**.

Bài tập luyện tập

A psychologist who insists that only observable, measurable behavior — not unobservable mental states — should be studied scientifically most likely identifies with which perspective?

- | | |
|-------------------|----------------|
| (A) Humanistic | (C) Behavioral |
| (B) Psychodynamic | (D) Cognitive |

Lời giải chi tiết

This is the defining stance of **behaviorism** (Watson, Skinner), which restricted psychology to observable stimulus-response relationships and rejected the study of unobservable internal states as unscientific. **(C)**.

Bài tập luyện tập

Carl Rogers argued that psychological growth is fostered by offering a person acceptance regardless of what they say or do. This concept is called:

- | | |
|-----------------------------------|--------------------------|
| (A) Self-actualization | (C) Operant conditioning |
| (B) Unconditional positive regard | (D) Reticular activation |

Lời giải chi tiết

Rogers's humanistic concept of **unconditional positive regard** refers to accepting and valuing a person regardless of their behavior or statements, which he considered essential for healthy psychological development. Self-actualization (Maslow) is the ongoing fulfillment of one's potential, not this specific concept. **(B)**.

Bài tập luyện tập

In an experiment testing whether a new medication reduces anxiety, participants are randomly assigned to receive either the medication or an identical-looking sugar pill, and anxiety is measured with a standardized rating scale afterward. The independent variable is:

- (A) The participants' anxiety rating scores
- (B) Whether the participant received the medication or the placebo pill
- (C) The number of participants in the study
- (D) The standardized rating scale used

Lời giải chi tiết

The independent variable is what the researcher manipulates — here, whether a given participant received the actual medication or the placebo. Anxiety rating scores are the **dependent** variable (the measured outcome). **(B)**.

Bài tập luyện tập

A study finds that students who drink more coffee report higher exam scores. A confound the researcher failed to control for could be:

- (A) The number of hours the student slept the night before, which independently affects both coffee consumption and exam performance
- (B) The specific brand of coffee consumed
- (C) The exact time the exam was scheduled
- (D) The temperature of the coffee

Lời giải chi tiết

A confound is a factor other than the IV that could independently explain the observed relationship between coffee and exam scores. Sleep is a strong plausible third variable: well-rested students might both drink less coffee (less need for stimulation) and perform better academically for entirely unrelated reasons (or well-rested, motivated students might drink more coffee *and* study harder) — either way, sleep could produce the observed pattern without coffee causing better exam performance at all. **(A)**.

Bài tập luyện tập

A double-blind procedure, compared to a single-blind procedure, additionally controls for:

- (A) The placebo effect
- (B) Experimenter bias
- (C) Random assignment
- (D) Operational definitions

Lời giải chi tiết

Single-blind keeps participants unaware of their group assignment, controlling for the placebo effect. Double-blind keeps *both* participants *and* the researchers interacting with them unaware, which additionally prevents **experimenter bias** — the researcher's unconscious tendency to treat groups differently or interpret results in line with their hypothesis. **(B)**.

Bài tập luyện tập

Which correlation coefficient represents the strongest relationship between two variables?

- (A) $r = +0.15$ (C) $r = +0.40$
(B) $r = -0.82$ (D) $r = -0.05$

Lời giải chi tiết

Strength of a correlation depends on the *absolute value* of r , not its sign. Among $|0.15|$, $|-0.82| = 0.82$, $|0.40|$, $|-0.05|$, the largest absolute value is 0.82. **(B)**.

Bài tập luyện tập

Random assignment to experimental groups is primarily used to:

- (A) Make sure the sample represents the population (C) Ensure participants cannot guess the hypothesis
(B) Equalize the groups on all variables except the manipulated IV, ruling out confounds (D) Reduce the number of participants needed

Lời giải chi tiết

Random assignment distributes individual differences roughly evenly across groups by chance, so groups differ (on average) only in which condition/treatment they received — supporting a causal (internal validity) conclusion. Representativeness of the sample to the population is the goal of random *sampling*, a different procedure. **(B)**.

Bài tập luyện tập

A major limitation of the case study method is that:

- (A) It cannot be used to study rare conditions (C) It always involves deception
(B) Findings from one or a few individuals may not generalize to the broader population (D) It requires random assignment

Lời giải chi tiết

Case studies are actually well-suited to rare conditions (that is one of their strengths), but because they examine only one or a few individuals, in depth, their findings cannot be assumed to generalize broadly — that specific case might be unusual in ways that don't apply elsewhere. Case studies do not require deception or random assignment. **(B)**.

Bài tập luyện tập

A data set has a mean of 50 but a median of 42, with most scores clustered between 35 and 45 and a handful of very high scores near 90. This distribution is best described as:

- (A) Normally distributed (C) Positively skewed
(B) Negatively skewed (D) Bimodal

Lời giải chi tiết

A few unusually *high* scores are pulling the mean (50) above the median (42), and the tail extends toward higher values — the signature of a **positively skewed** distribution. In a normal distribution the mean and median would be nearly equal. **(C)**.

Bài tập luyện tập

A smaller standard deviation indicates that scores in a data set:

- (A) Are more spread out from the mean
- (B) Cluster more tightly around the mean
- (C) Are all identical to the median
- (D) Form a positively skewed distribution

Lời giải chi tiết

Standard deviation measures the typical distance of scores from the mean; a smaller value means scores are packed more closely around the mean, while a larger value means scores are more spread out. **(B)**.

Bài tập luyện tập

A study reports $p < .05$ for its main finding. This most accurately means:

- (A) There is less than a 5% chance the result occurred if there were truly no effect in the population
- (B) There is at least a 95% chance the hypothesis is completely true
- (C) The effect size is large
- (D) The result will definitely replicate in future studies

Lời giải chi tiết

The p-value reflects the probability of observing a result this extreme (or more extreme) purely by chance if the null hypothesis (no real effect) were true — it does not directly indicate effect size, certainty about the hypothesis's truth, or guaranteed replication. **(A)**.

Bài tập luyện tập

Before beginning a study involving human participants at a university, a researcher must first obtain approval from the:

- (A) IACUC
- (B) APA national headquarters
- (C) Institutional Review Board (IRB)
- (D) Participants' family members

Lời giải chi tiết

The **IRB** reviews and approves research involving human participants, weighing potential benefits against risks and ensuring adequate protections are in place. The IACUC serves this function for animal research. **(C)**.

Bài tập luyện tập

Debriefing occurs:

- (A) Before a participant agrees to join a study (C) After a study is completed, especially if deception was used
(B) During random assignment (D) Only in animal research

Lời giải chi tiết

Debriefing is conducted *after* participation ends, explaining the study's true purpose and addressing any distress — it is especially critical whenever deception was used during the study. Informed consent, by contrast, happens *before* the study begins. (C).

Bài tập luyện tập

Deception in a psychological study is generally considered ethically permissible only when:

- (A) The researcher personally believes it is justified exists and thorough debriefing is provided
(B) No participant will ever find out (D) The study is funded by a government agency
(C) No reasonable non-deceptive alternative

Lời giải chi tiết

IRBs permit deception only when it is scientifically necessary (no reasonable alternative could answer the research question) and full debriefing will be provided afterward — personal belief or funding source is not the ethical standard. (C).

Bài tập luyện tập

If the heritability of a personality trait in a given population is estimated at 0.60, the most accurate interpretation is:

- (A) 60% of any given individual's personality is caused by their genes (C) The trait cannot be influenced by environment at all
(B) 60% of the *variation* in this trait across individuals in this population is attributable to genetic differences (D) The trait is present in 60% of the population

Lời giải chi tiết

Heritability is a population-level statistic describing the proportion of *variation* in a trait, within a specific population, attributable to genetic differences among individuals — it says nothing about the causal makeup of any single individual's trait, nor does it rule out environmental influence on the remaining variation. (B).

Bài tập luyện tập

Identical (monozygotic) twins share approximately what percentage of their DNA, compared to fraternal (dizygotic) twins?

(A) 100% vs. 50%

(B) 75% vs. 50%

(C) 100% vs. 100%

(D) 50% vs. 25%

Lời giải chi tiết

Monozygotic (identical) twins develop from a single fertilized egg and share 100% of their DNA; dizygotic (fraternal) twins develop from two separately fertilized eggs and share, on average, about 50% – the same genetic relatedness as ordinary siblings. **(A)**.

Bài tập luyện tập

The myelin sheath surrounding many axons primarily functions to:

(A) Release neurotransmitters into the synapse

(B) Speed up neural transmission via saltatory conduction between nodes of Ran-

(C) Generate the resting potential

(D) Detect sensory stimuli directly

Lời giải chi tiết

Myelin insulates the axon, allowing the electrical signal to "jump" between the gaps (nodes of Ranvier) rather than traveling continuously down the whole membrane – this saltatory conduction substantially increases conduction speed. **(B)**.

Bài tập luyện tập

According to the all-or-none law, once a stimulus reaches a neuron's threshold:

(A) The resulting action potential's size depends on how far the stimulus exceeded threshold

(B) The neuron fires a full-strength action potential of constant size, regardless of

how far above threshold the stimulus was

(C) The neuron enters a permanent refractory period

(D) No neurotransmitter is released

Lời giải chi tiết

The all-or-none law states that any stimulus reaching threshold triggers a full, uniform-strength action potential; stimulus intensity above threshold is instead represented by firing *rate*, not the size of any single action potential. **(B)**.

Bài tập luyện tập

A patient with Parkinson's disease shows characteristic motor symptoms linked to insufficient activity of which neurotransmitter?

(A) Serotonin

(B) Dopamine

(C) GABA

(D) Endorphins

Lời giải chi tiết

Parkinson's disease is associated with degeneration of dopamine-producing neurons, leading to insufficient **dopamine** activity in brain circuits controlling movement, producing tremor and rigidity. **(B)**.

Bài tập luyện tập

A drug that binds to a neurotransmitter's receptor and blocks its normal effect is called a(n):

- | | |
|----------------|------------------------|
| (A) Agonist | (C) Reuptake inhibitor |
| (B) Antagonist | (D) Neuromodulator |

Lời giải chi tiết

An **antagonist** binds to a receptor and blocks or reduces the neurotransmitter's normal effect. An agonist, by contrast, binds and mimics/enhances the effect. **(B)**.

Bài tập luyện tập

The gland often called the "master gland," which regulates most other endocrine glands under direction from the hypothalamus, is the:

- | | |
|---------------------|-------------------|
| (A) Thyroid gland | (C) Adrenal gland |
| (B) Pituitary gland | (D) Pancreas |

Lời giải chi tiết

The **pituitary gland** releases hormones that regulate most other endocrine glands, earning the nickname "master gland," though it is itself directed by the hypothalamus. **(B)**.

Bài tập luyện tập

Activation of the sympathetic nervous system produces which of the following effects?

- | | |
|--|---|
| (A) Decreased heart rate and increased digestion | inhibited digestion |
| (B) Increased heart rate, pupil dilation, and | (C) Pupil constriction and slowed breathing |
| (D) No measurable physiological change | |

Lời giải chi tiết

The sympathetic nervous system mobilizes the body for "fight-or-flight": it increases heart rate, dilates pupils, and inhibits digestion to redirect resources toward immediate action. The parasympathetic system produces the opposite ("rest-and-digest") pattern. **(B)**.

Bài tập luyện tập

A simple reflex, such as withdrawing a hand from a hot surface, can occur without waiting for the brain to process the sensation first because:

- (A) The signal never reaches the brain at all
(B) A reflex arc allows the spinal cord to directly relay sensory input to a motor response via an interneuron
(C) The autonomic nervous system overrides the somatic nervous system
(D) Reflexes only occur during sleep

Lời giải chi tiết

A reflex arc routes the signal from sensory neuron to interneuron to motor neuron entirely within the spinal cord, producing a fast response before the (separately, and more slowly) transmitted signal reaches the brain for conscious processing. The sensory signal does still reach the brain – just after the reflex response has already begun. **(B)**.

Bài tập luyện tập

Damage to the cerebellum would most likely impair:

- (A) Balance, coordination, and the learning of motor skills
(B) Language comprehension
(C) Regulation of hunger and thirst
(D) Color vision

Lời giải chi tiết

The cerebellum coordinates balance, fine motor movement, and procedural (motor skill) learning; damage produces clumsy, poorly coordinated movement. Language comprehension involves Wernicke's area; hunger/thirst involves the hypothalamus; color vision involves the visual cortex/retina. **(A)**.

Bài tập luyện tập

Patient H.M., who had his hippocampus removed to treat severe epilepsy, could no longer:

- (A) Recall any memories formed before the surgery
(B) Form new explicit (declarative) long-term memories
(C) Speak fluently
(D) Feel any emotions

Lời giải chi tiết

H.M.'s memories from before the surgery remained largely intact, and he could still learn new procedural/motor skills – but he could not form *new explicit (declarative)* long-term memories, demonstrating the hippocampus's specific role in consolidating new conscious memories of facts and events. **(B)**.

Bài tập luyện tập

A patient produces fluent, grammatically normal-sounding speech that is full of nonsense and shows no understanding of what others say. This pattern is most consistent with damage to:

- (A) Broca's area
(B) The motor cortex
(C) Wernicke's area
(D) The cerebellum

Lời giải chi tiết

Fluent but meaningless speech combined with impaired comprehension is the classic pattern of **Wernicke's area** damage (temporal lobe), which is needed for language comprehension. Broca's area damage instead produces effortful, non-fluent speech with intact comprehension. (C).

Bài tập luyện tập

In classic split-brain experiments, when a word is flashed only to a patient's left visual field, the patient typically:

- (A) Says the word aloud immediately
- (B) Cannot say the word aloud, but can select the matching object using their left hand
- (C) Cannot see anything at all
- (D) Reports seeing two different words

Lời giải chi tiết

The left visual field is processed by the right hemisphere, which (in most people) lacks a language-production center, so the patient cannot verbally report the word; but because the right hemisphere controls the left hand, the patient can still correctly select the matching object by touch with that hand – demonstrating the right hemisphere did perceive the word. (B).

Bài tập luyện tập

An fMRI scan, compared to an EEG, generally offers:

- (A) Better temporal resolution but worse spatial resolution
- (B) Better spatial resolution but worse temporal resolution
- (C) Identical resolution in both dimensions
- (D) No information about brain function at all

Lời giải chi tiết

fMRI tracks blood-oxygen changes, giving good spatial precision about *which* regions are active, but the signal lags a few seconds behind actual neural firing (weak temporal resolution). EEG tracks electrical activity with excellent millisecond-level timing but cannot pinpoint its precise source (weak spatial resolution). (B).

Bài tập luyện tập

The case of Phineas Gage, who survived severe damage to his prefrontal cortex, is historically significant because it provided early evidence that this brain region is involved in:

- (A) Basic reflexes
- (B) Visual processing
- (C) Personality, impulse control, and planning
- (D) Auditory processing

Lời giải chi tiết

Despite retaining his memory, speech, and basic intelligence, Gage's personality reportedly changed dramatically after his prefrontal cortex was damaged — he became impulsive and had difficulty planning — providing early evidence linking this region to executive function and personality. (C).

Bài tập luyện tập

If a person can just barely detect a dim light 50% of the time it is presented, that light's intensity represents the person's:

- | | |
|--------------------------------|------------------------|
| (A) Difference threshold | (C) Absolute threshold |
| (B) Just noticeable difference | (D) Weber fraction |

Lời giải chi tiết

The **absolute threshold** is defined as the minimum stimulus intensity detectable 50% of the time. The difference threshold/JND instead refers to detecting a difference between two stimuli. (C).

Bài tập luyện tập

Which pairing of color vision theory and the phenomenon it best explains is correct?

- | | |
|---|---|
| (A) Trichromatic theory — explains negative afterimages | (C) Trichromatic theory — explains pitch perception |
| (B) Opponent-process theory — explains negative afterimages | (D) Opponent-process theory — explains the volley principle |

Lời giải chi tiết

Trichromatic theory (three cone types) explains color mixing but not afterimages; opponent-process theory (opposing color pairs that rebound after fatigue) specifically explains negative afterimages. Pitch perception and the volley principle relate to hearing theories, not color vision. (B).

Bài tập luyện tập

Place theory of pitch perception explains high-frequency sound perception well, but struggles to explain low-frequency sounds because:

- | | |
|--|--|
| (A) Low frequencies produce no vibration on the basilar membrane at all | ize a single peak point |
| (B) Low frequencies stimulate the basilar membrane too broadly/diffusely to local- | (C) Low frequencies are outside the range of human hearing |
| | (D) Low frequencies only affect the outer ear |

Lời giải chi tiết

Place theory relies on identifying which specific location along the basilar membrane is most active. Low-frequency sound waves stimulate the membrane too broadly and diffusely to

pinpoint one clear location, which is why frequency theory (and the volley principle) better explain low-pitch coding. **(B)**.

Bài tập luyện tập

According to gate-control theory, rubbing an injured area reduces perceived pain because:

- (A) It distracts the injured person psychologically, with no neural basis
- (B) Activity in large touch fibers can close the spinal "gate" that would otherwise let
- (C) It numbs the pain receptors directly
- (D) It increases activity in the amygdala

Lời giải chi tiết

Gate-control theory (Melzack and Wall) proposes a neurological gate in the spinal cord; activity in large, fast touch/pressure fibers (triggered by rubbing) can close this gate, partially blocking slower pain signals from reaching the brain. This is a real neural mechanism, not merely psychological distraction. **(B)**.

Bài tập luyện tập

Which Gestalt principle explains why a circle drawn with several small gaps in its outline is still perceived as a complete circle?

- (A) Similarity
- (B) Proximity
- (C) Closure
- (D) Continuity

Lời giải chi tiết

Closure describes the tendency of the mind to fill in small gaps to perceive a complete, whole shape, which is exactly what happens when an incomplete circle outline is still perceived as a full circle. **(C)**.

Bài tập luyện tập

Linear perspective and interposition are both classified as:

- (A) Binocular depth cues
- (B) Monocular depth cues
- (C) Gestalt grouping principles
- (D) Signal detection outcomes

Lời giải chi tiết

Both linear perspective (converging parallel lines) and interposition (one object blocking another) can be perceived using just one eye, making them **monocular** depth cues — unlike retinal disparity and convergence, which require both eyes. **(B)**.

Bài tập luyện tập

In the "invisible gorilla" study by Simons and Chabris, participants who were asked to count basketball passes often failed to notice a person in a gorilla suit walking through the scene. This result is best explained by:

- (A) Sensory adaptation
- (B) Inattentional blindness

- (C) Weber's Law
- (D) Opponent-process theory

Lời giải chi tiết

Because attention was fully engaged in the counting task, many participants failed to consciously notice a fully visible, unexpected stimulus (the gorilla) – the defining pattern of **inattentional blindness**, not a sensory or color-vision phenomenon. **(B)**.

Research-design analysis

A researcher wants to test whether background instrumental music improves performance on a memory task. She recruits 60 volunteers who sign up online. The first 30 to sign up are placed in the "music" group and study a list of 20 words while instrumental music plays; the last 30 to sign up are placed in the "silence" group and study the same list in silence. Both groups are tested immediately afterward on how many words they can recall, in the same room, by the same experimenter, who knows which participants are in which group. The music group recalls significantly more words on average.

- (a) Identify the independent variable and the dependent variable.
- (b) Identify at least one confound or design flaw in this study, and explain specifically how it threatens the conclusion that music improved memory.
- (c) Propose one specific change to the design that would address the flaw you identified.

Lời giải chi tiết

(a) Independent variable: whether background music was present or absent while studying. Dependent variable: number of words correctly recalled on the memory test.

(b) The most serious flaw is the **lack of random assignment**: participants were sorted into groups based on *when they signed up* rather than by chance, so the two groups are not necessarily equivalent – for example, people who sign up earlier might differ systematically (in motivation, schedule, or attention) from those who sign up later, and any such systematic difference is a confound that could explain the memory difference instead of the music itself. A second flaw is that the experimenter **was not blind** to group assignment, raising the possibility of experimenter bias (e.g., subtly scoring recall more generously for the music group, or behaving differently while testing each group) – since there is no indication of a blind or double-blind procedure here.

(c) Randomly assign the 60 volunteers to the two groups using a chance procedure (e.g., a random number generator) rather than sign-up order, and have the recall test scored by a research assistant who does not know which condition each participant was in (blind scoring), removing both confounds identified above.

Research-design analysis

A city-wide survey finds a strong positive correlation ($r = +0.65$) between the number of hours of television children watch per week and children's body mass index (BMI). A news headline declares: "Study proves TV watching causes childhood obesity."

- (a) Is the headline's causal claim justified by this correlational finding? Explain why or why not.
- (b) Propose one plausible third variable that could produce this correlation without television watching directly causing higher BMI.

(c) Describe one experimental design (in general terms) that could more directly test whether TV watching causes weight gain, and identify its independent and dependent variables.

Lời giải chi tiết

(a) No – the headline’s causal claim is **not** justified. A correlational study, no matter how strong the correlation, cannot establish causation because no variable was manipulated and groups were not randomly assigned; “correlation does not imply causation” applies directly here.

(b) A plausible third variable is **household physical activity levels or neighborhood walkability**: children in households/neighborhoods with fewer opportunities or less encouragement for outdoor physical activity might independently both watch more TV (as an available alternative activity) and have higher BMI (due to less overall physical activity) – without television viewing itself directly causing the weight difference. (Other reasonable answers, such as parental monitoring of snacking during screen time, would also be acceptable if the third variable plausibly influences both variables independently.)

(c) Randomly assign children to a “high TV time” condition (e.g., 3 hours/day of permitted screen time) versus a “low TV time” condition (e.g., 30 minutes/day) for a fixed period, holding other factors (diet, physical activity opportunities) as constant as possible across groups, then measure change in BMI. Independent variable: amount of assigned TV time (high vs. low); dependent variable: change in BMI over the study period.

Research-design analysis – data table

A researcher measures reaction time (in milliseconds) on a simple task for two independent groups: Group A (no caffeine) and Group B (100 mg caffeine, 30 minutes before testing). Each group has 5 participants.

Group A (no caffeine)	Group B (caffeine)
320, 340, 310, 330, 300	270, 260, 290, 250, 280

(a) Calculate the mean reaction time for each group.

(b) Based only on the means, describe the apparent effect of caffeine on reaction time.

(c) The researcher claims this result is definitely statistically significant. Explain why this claim cannot be confirmed from the information given, and identify one additional piece of information needed.

Lời giải chi tiết

(a) Group A mean: $(320 + 340 + 310 + 330 + 300)/5 = 1600/5 = 320$ ms. Group B mean: $(270 + 260 + 290 + 250 + 280)/5 = 1350/5 = 270$ ms.

(b) The caffeine group’s mean reaction time (270 ms) is 50 ms faster than the no-caffeine group’s mean (320 ms), suggesting caffeine may be associated with faster (quicker) reaction times in this sample.

(c) A difference in sample means alone does not establish **statistical significance** – with only $n = 5$ per group, this could easily reflect chance variation rather than a real population-level effect. To evaluate significance, the researcher would need to run an appropriate statistical test (e.g., a t -test) and obtain a **p-value**; only if $p < .05$ (by conventional standards) would the difference be considered unlikely to have occurred by chance. Additional information needed

includes each group's **standard deviation** (variability) and the resulting p-value from a significance test — the raw mean difference by itself is not sufficient.

Research-design analysis

A graduate student wants to study obedience to authority using a cover story that participants are helping test a "new learning method," when the real purpose is to observe how far participants will comply with escalating demands from an experimenter. Participants are not told the true purpose beforehand, and some experience significant distress during the session. Evaluate this study design against the ethical guidelines for human research, identifying what would be required for this design to be conducted ethically.

Lời giải chi tiết

Using a cover story that conceals the study's true purpose is an example of **deception**, which is only ethically permissible when (1) no reasonable non-deceptive design could answer the same research question, and (2) participants are given a thorough **debriefing** immediately afterward, explaining the true purpose and addressing any distress. Given that the study is likely to cause participant **distress**, the design must also satisfy **protection from harm**: the IRB must judge that the scientific value justifies the risk, and the researcher must minimize the intensity and duration of distress wherever possible (e.g., providing an option to stop, and following up during debriefing to ensure the participant leaves the study psychologically intact). Participants must still be given **informed consent** about the general nature of the study and any foreseeable risks (without revealing the specific deception itself), retain the **right to withdraw** at any point, and have their data kept **confidential**. Before any of this occurs, the full design — including the deception and the debriefing plan — must be reviewed and approved by the **IRB**. Without a rigorous debriefing procedure and IRB approval demonstrating that no non-deceptive alternative exists, this design would not be considered ethical.

Research-design analysis — data table

A team of behavioral geneticists studies concordance rates (the percentage of twin pairs in which, if one twin has a trait, the co-twin also has it) for a diagnosed anxiety disorder.

Twin type	Concordance rate
Identical (MZ) twins	45%
Fraternal (DZ) twins	20%

- (a) What do these data suggest about the relative roles of genetics and environment in this anxiety disorder?
- (b) Explain specifically why the fact that MZ concordance is well below 100% is important evidence, not just a minor detail.
- (c) A colleague argues that adoption studies would provide complementary evidence. Explain how an adoption study could help confirm or challenge the genetic interpretation from part (a).

Lời giải chi tiết

- (a) Because MZ twins (45% concordance) are noticeably more concordant than DZ twins (20%) — despite both twin types typically experiencing a similarly comparable shared rearing envi-

ronment — the gap suggests a meaningful **genetic contribution** to vulnerability for this anxiety disorder.

(b) If the disorder were purely genetically determined, MZ twins (who share 100% of their DNA) should show concordance approaching 100%. The fact that MZ concordance is only 45% demonstrates that genetics alone does not determine the disorder — **environmental factors and/or gene-environment interaction** must also play a substantial role, since a large share of MZ pairs are genetically identical yet discordant (one twin affected, the other not).

(c) An **adoption study** could examine whether children of biological parents with the anxiety disorder show elevated rates of the disorder even when raised apart from those biological parents (supporting a genetic interpretation), and separately, whether children raised by adoptive parents with the disorder (but with no biological relation) show elevated rates due to the shared environment alone (supporting an environmental interpretation). Convergent evidence from adoption studies pointing toward a genetic influence would strengthen confidence in the twin-study interpretation from part (a); a lack of any biological-parent relationship would instead call the genetic interpretation into question.

Research-design analysis

A researcher wants to determine whether a specific region of the parietal lobe is *necessary* for a particular spatial reasoning task (not just correlated with activity during the task). Design a brief study using one of the brain-research tools described in this unit that could test necessity rather than mere correlation, and explain why an fMRI study alone would be insufficient to answer this specific question.

Lời giải chi tiết

An fMRI study alone can only show that the targeted parietal region becomes *active* during the spatial reasoning task — this establishes a **correlation** between activity in that region and task performance, but activity could be a side effect rather than a necessary cause (some other region might actually be doing the essential work). To test **necessity**, the researcher should instead use **TMS (transcranial magnetic stimulation)**: apply magnetic pulses to temporarily disrupt activity in the targeted parietal region while participants attempt the spatial reasoning task, and compare their performance to a control condition (TMS applied to an unrelated cortical region, or no TMS at all). If disrupting the targeted region *causally impairs* task performance relative to the control condition, this provides evidence that the region is necessary for the task — a causal design that a purely observational imaging tool like fMRI cannot provide on its own.

Bài tập luyện tập

A participant can just barely detect that a 40-decibel tone has gotten louder when it is raised to 42 decibels (a 2-decibel just noticeable difference). Using Weber's Law, predict approximately how many decibels would need to be added to an 80-decibel tone for the change to be just noticeable, assuming the same Weber fraction applies.

Lời giải chi tiết

First find the Weber fraction from the given information: $k = \Delta I / I = 2 / 40 = 0.05$ (5%). Applying the same fraction to the new starting intensity of 80 decibels: $\Delta I = kI = 0.05 \times 80 = 4$ decibels. Consistent with **Weber's Law**, roughly 4 decibels would need to be added to the

louder (80-decibel) tone to produce a just noticeable difference — twice as large an absolute change as was needed for the quieter (40-decibel) tone, because the required change scales proportionally with the starting stimulus intensity, not as a fixed absolute amount.

Bài tập luyện tập

On a normally distributed test with a mean of 100 and a standard deviation of 15, approximately what percentage of test-takers score between 85 and 115?

- (A) 34%
- (B) 50%
- (C) 68%
- (D) 95%

Lời giải chi tiết

85 and 115 are each exactly one standard deviation from the mean (100 ± 15), i.e., $z = \pm 1$. By the **empirical rule**, approximately 68% of scores in a normal distribution fall within 1 standard deviation of the mean. (C).

Bài tập luyện tập

An online poll asks readers of a website to voluntarily submit their opinion on a political issue; 50,000 people respond. Despite the large sample size, the poll's results may still fail to generalize to the broader population primarily because:

- (A) 50,000 is too small a number to matter statistically
- (B) It is a voluntary response sample, and people who choose to respond may differ systematically from those who do not
- (C) Online polls cannot use operational definitions
- (D) The poll necessarily lacks a dependent variable

Lời giải chi tiết

A large sample size reduces random error but cannot correct **sampling bias**: in a voluntary response sample, the people motivated to opt in (often those with strong or unusual opinions) may not represent the broader population, regardless of how many of them respond. (B).

Bài tập luyện tập

Red-green color blindness is best explained as resulting from:

- (A) Damage to the optic nerve
- (B) Red and green cones responding too similarly to distinguish those wavelengths
- (C) An excess of rods in the retina
- (D) Damage to the auditory nerve

Lời giải chi tiết

Color blindness typically results from a genetic anomaly causing one or more cone types to be missing or to respond abnormally — in red-green color blindness, the red and green cones respond too similarly to allow the brain to distinguish those wavelengths, not from any rod, optic nerve, or auditory pathway problem. (B).

Bài tập luyện tập

A patient's hearing loss is caused by damage to the tiny bones (ossicles) of the middle ear, while the cochlea and auditory nerve remain fully intact. This is best classified as:

- | | |
|--------------------------------|----------------------------|
| (A) Sensorineural hearing loss | (C) Vestibular dysfunction |
| (B) Conductive hearing loss | (D) Retinal detachment |

Lời giải chi tiết

Damage limited to the sound-conducting structures of the outer/middle ear (such as the ossicles), with the cochlea and auditory nerve intact, is classified as **conductive hearing loss** — hearing aids that amplify sound are often effective in this case, since the transduction system itself still works. **(B)**.

Bài tập luyện tập

In a signal detection experiment, a participant says "yes, I detect the faint tone" on a trial when no tone was actually played. This outcome is classified as a:

- | | |
|----------|-----------------------|
| (A) Hit | (C) False alarm |
| (B) Miss | (D) Correct rejection |

Lời giải chi tiết

Reporting detection when the stimulus was actually absent is, by definition, a **false alarm**. A hit requires the stimulus to actually be present and correctly detected. **(C)**.

Bài tập luyện tập

A neuron that carries outgoing commands from the central nervous system to a skeletal muscle is classified as a:

- | | |
|-------------------------------|-----------------|
| (A) Sensory (afferent) neuron | (C) Interneuron |
| (B) Motor (efferent) neuron | (D) Glial cell |

Lời giải chi tiết

Neurons carrying signals *out* from the CNS to muscles or glands are **motor (efferent) neurons**. Sensory (afferent) neurons instead carry incoming information toward the CNS, and interneurons connect the two entirely within the CNS. **(B)**.

Bài tập luyện tập

A researcher wants to ensure that a survey sample proportionally represents each age group found in the overall population, rather than relying on pure chance to achieve this balance. The researcher should use:

- | | |
|---------------------------------|--------------------------------|
| (A) A voluntary response sample | (C) Stratified random sampling |
| (B) A convenience sample | (D) Naturalistic observation |

Lời giải chi tiết

Stratified random sampling divides the population into meaningful subgroups (strata, such as age groups) and samples randomly within each in proportion to their size in the population — directly ensuring subgroups are represented as intended, unlike plain random sampling, which could by chance over- or under-represent a subgroup, especially in smaller samples. **(C)**.

Bài tập luyện tập

Which of the following best reflects the APA's aspirational general ethical principle of "justice" in psychological research?

- (A) Ensuring all research is published in a scientific journal
- (B) Ensuring fair and equitable treatment and access to the benefits of research across different groups
- (C) Only working with clients who can pay the full session fee
- (D) Avoiding all research involving deception

Lời giải chi tiết

The APA's principle of **justice** concerns fair and equitable treatment, including fair access to the potential benefits and burdens of psychological research and practice across different groups of people — not publication requirements, fee structures, or the deception rules (which fall under other specific ethical guidelines). **(B)**.

Bài tập luyện tập

A researcher concludes that a new therapy has no real effect on anxiety, based on a small pilot study, when in fact the therapy does have a genuine (if modest) benefit that the underpowered study was unable to detect. This is an example of a:

- (A) Type I error
- (B) Type II error
- (C) Confound
- (D) Placebo effect

Lời giải chi tiết

Concluding there is *no* effect when one truly exists is a **Type II error** (a "false negative"), often caused by insufficient statistical power (e.g., too small a sample) to detect a real but modest effect. A Type I error is the opposite mistake — concluding an effect exists when it does not. **(B)**.

Bài tập luyện tập

Curare, a substance that binds to acetylcholine receptors at the neuromuscular junction and blocks them (preventing muscle contraction and causing paralysis), functions as a(n):

- (A) Acetylcholine agonist
- (B) Acetylcholine antagonist
- (C) Reuptake inhibitor of dopamine
- (D) Endorphin

Lời giải chi tiết

Curare binds to ACh receptors but blocks rather than activates them, preventing normal muscle-activating signaling – the defining feature of an **antagonist**. An agonist would instead mimic or enhance ACh's normal effect. **(B)**.

Research-design analysis

A physiological psychologist notes that the heart receives separate nerve fibers from both the sympathetic and parasympathetic branches of the autonomic nervous system. Explain the functional significance of this "dual innervation" arrangement, and predict what would happen to heart rate regulation if only the sympathetic branch were functioning (with the parasympathetic branch pharmacologically blocked).

Lời giải chi tiết

Dual innervation allows the two branches to act as opposing, continuously adjustable controls – the sympathetic branch accelerates heart rate (like a gas pedal) while the parasympathetic branch decelerates it (like a brake) – allowing fine, rapid, bidirectional regulation of heart rate to match changing demands (e.g., speeding up during exercise or a stressor, slowing down during rest), rather than heart rate only being able to turn "on" or "off." If the parasympathetic branch were pharmacologically blocked, the heart would lose its primary "braking" input: heart rate would be expected to rise and remain persistently elevated even at rest, and the body would lose the ability to quickly calm the heart back down after sympathetic activation, since only the accelerating (sympathetic) half of the dual-control system would remain functional.

Bài tập luyện tập

A researcher proposes that a psychological disorder emerges only when a person carries a genetic predisposition *and* experiences a significant environmental stressor – neither factor alone being sufficient. This proposal reflects which model?

- | | |
|--------------------------------|-----------------------------|
| (A) The empirical rule | (C) Signal detection theory |
| (B) The diathesis-stress model | (D) Opponent-process theory |

Lời giải chi tiết

The **diathesis-stress model** specifically proposes that a genetic/biological predisposition (diathesis) combines with environmental stress to produce a disorder, with neither factor alone typically being sufficient – illustrating gene-environment interaction rather than either factor acting in isolation. **(B)**.

Bài tập luyện tập

Patient A, with damage to Region X, loses the ability to recognize faces but can still identify objects normally. Patient B, with damage to Region Y, loses the ability to identify objects but can still recognize faces normally. This pattern of results is an example of:

- | | |
|---|-------------------------|
| (A) A confound | rate neural systems |
| (B) A double dissociation, providing strong evidence that face recognition and object recognition rely on at least partly sepa- | (C) The all-or-none law |
| | (D) A Type I error |

Lời giải chi tiết

This is a classic **double dissociation**: each patient loses one specific ability while retaining the other, and the pattern reverses between the two patients. This provides much stronger evidence of functionally separate neural systems than either case alone, since a single case of impaired face recognition alongside intact object recognition could have other explanations, but the fully reversed pattern in a second patient rules most of those out. **(B)**.

Bài tập luyện tập

Defining "sleep deprivation" precisely as "restricted to no more than 4 hours of sleep, verified using an actigraphy wristband, for one night" is an example of:

- | | |
|-------------------------------|------------------------------|
| (A) A confounding variable | (C) A placebo effect |
| (B) An operational definition | (D) A double-blind procedure |

Lời giải chi tiết

Stating precisely, and measurably, how a variable will be manipulated or measured is the definition of an **operational definition** — it allows the study to be replicated and its results clearly interpreted, unlike a vague term such as "tired." **(B)**.

Bài tập luyện tập

The McGurk effect, in which viewers "hear" a blended syllable when mismatched mouth-movement video and audio are combined, best illustrates:

- | | |
|--|-----------------------------|
| (A) Sensory adaptation | (C) Weber's Law |
| (B) Sensory interaction between vision and hearing | (D) Signal detection theory |

Lời giải chi tiết

The McGurk effect demonstrates **sensory interaction**: visual information (lip movement) directly alters the auditory perception of a spoken sound, showing that the senses are not interpreted in complete isolation from one another. **(B)**.

Research-design analysis

A patient with a stroke can no longer identify common objects by sight — when shown a comb, she cannot say what it is or what it's for — but she can accurately describe its color, length, and outline, and the moment she is allowed to touch and handle it, she immediately identifies it correctly as "a comb." Using the concepts of sensation, perception, and association areas, explain what this pattern reveals about where the deficit lies, and propose one additional test that would help confirm your explanation using the logic of double dissociation.

Lời giải chi tiết

The patient's basic **sensation** is intact — she can accurately register and describe the object's color, length, and outline, meaning light is being transduced normally and reaching the visual cortex. What is impaired is **perception**, specifically the ability to organize raw visual sensory information into a recognized, meaningful object — consistent with damage to a **visual asso-**

ciation area rather than the primary visual cortex itself, producing a pattern of **visual agnosia**. The fact that touch immediately allows correct identification confirms that her stored knowledge of what a comb is and looks/feels like remains fully intact — the deficit is specific to the *visual route* to that knowledge, not to memory or general intelligence.

To confirm this with **double dissociation** logic, the researcher could look for (or test) a second patient with damage to a *different* brain region who shows the reverse pattern: someone who can visually identify objects normally but who, upon touching an object with their eyes closed, cannot identify it by touch alone (a tactile agnosia). If such a reversed case exists, it would confirm that visual object recognition and tactile object recognition depend on at least partly separate neural systems, strengthening the conclusion that this patient's specific deficit is localized to the visual-recognition pathway rather than a general, modality-independent recognition problem.

Research-design analysis — integrative

A student walking home at night hears fast footsteps approaching from behind. Trace this scenario through the following stages, using specific terminology from this unit: (a) the sensory process that first registers the sound; (b) the brain structure most responsible for the initial emotional/threat appraisal; (c) the endocrine pathway activated if the perceived threat persists for several minutes; (d) the branch of the autonomic nervous system responsible for the immediate physical sensations (racing heart, rapid breathing) the student feels within seconds.

Lời giải chi tiết

(a) Sound waves are transduced by hair cells in the **cochlea**, converting mechanical vibration into neural impulses carried by the auditory nerve — this initial registration of the raw stimulus is **sensation**. (b) The auditory information is relayed (via the thalamus) to the **amygdala**, which performs a rapid emotional/threat appraisal of the sound as potentially dangerous, before more detailed conscious interpretation is even complete. (c) If the perceived threat persists over several minutes, the slower **HPA axis** is engaged: the hypothalamus signals the pituitary gland, which releases ACTH, stimulating the adrenal cortex to release **cortisol**, sustaining a heightened stress response for as long as the threat (or the appraisal of threat) continues. (d) The immediate, fast-onset physical sensations (racing heart, rapid breathing) within seconds are produced by the **sympathetic nervous system**, which is activated almost instantly via direct neural pathways from the hypothalamus to the adrenal medulla (triggering rapid epinephrine release) — much faster-acting than the hormonal HPA axis cascade described in part (c), which sustains the response only if the threat continues beyond the first few seconds.

Cognition

Mục tiêu Unit: Trạng thái ý thức và các giai đoạn giấc ngủ; nhịp sinh học và nhân trên chéo thị; các thuyết giải thích giấc ngủ và giấc mơ; thôi miên; các nhóm chất tác động tâm thần; mô hình trí nhớ đa thành phần (Atkinson–Shiffrin) và trí nhớ làm việc (Baddeley); trí nhớ dài hạn tường minh và không tường minh; chiến lược mã hoá và truy xuất; đường cong quên Ebbinghaus và các nguyên nhân gây quên; trí nhớ tái tạo và hiệu ứng thông tin sai lệch; cơ sở sinh học của trí nhớ (hồi hải mã, hạch hạnh nhân, LTP); tư duy, giải quyết vấn đề, suy luận heuristic và các thiên kiến nhận thức; các thuyết trí thông minh và phép đo trí thông minh; phân bố chuẩn của điểm IQ; ảnh hưởng của di truyền và môi trường lên trí thông minh; và cấu trúc, sự tiếp thu, cùng cơ sở não bộ của ngôn ngữ.

2.1 Consciousness and the Sleep--Wake Cycle

2.1.1 Defining consciousness and levels of awareness

Consciousness is a person's subjective awareness of their own mental processes and of the external environment. Psychologists distinguish several levels of awareness. **Controlled processing** demands full, focused attention (e.g., learning to parallel park), while **automatic processing** occurs with minimal attention and often outside conscious awareness (e.g., reading a familiar word, walking). Freud's concept of the **unconscious** — mental activity that is not accessible to awareness but still influences behavior — remains a looser, more theory-laden idea than the well-documented cognitive unconscious of automatic processing, but both point to the same fact: not all information processing in the brain reaches conscious awareness.

Levels of information processing

Controlled (effortful) processing: requires focused attention and conscious effort; relatively slow; used for novel or complex tasks. **Automatic processing:** occurs with little or no awareness; fast and effortless; used for well-learned or routine information (e.g., word meanings, spatial relationships, well-rehearsed skills). **Unconscious processing:** information is processed and can influence thought and behavior without ever entering awareness (e.g., priming effects, sensory adaptation).

GIẢI THÍCH TIẾNG VIỆT

VN

Ý thức (consciousness) là sự nhận biết chủ quan về các quá trình tâm lý của bản thân và về môi trường xung quanh. **Xử lý có kiểm soát** đòi hỏi sự tập trung chú ý đầy đủ (ví dụ: học lái xe); **xử lý tự động** diễn ra gần như không cần chú ý (ví dụ: đọc một từ quen thuộc). **Vô thức** theo Freud là những hoạt động tâm lý nằm ngoài khả năng nhận biết nhưng vẫn ảnh hưởng đến hành vi. Ba mức độ nhận thức này là nền tảng để hiểu các trạng thái ý thức khác nhau như giấc ngủ, giấc mơ, thôi miên, và trạng thái bị ảnh hưởng bởi chất tác động tâm thần.

2.1.2 Circadian rhythms

The **circadian rhythm** is a roughly 24-hour biological cycle that regulates sleepiness, alertness, body temperature, and hormone release. It is controlled by the **suprachiasmatic nucleus (SCN)**, a small cluster of neurons in the hypothalamus that functions as the body's master biological clock. The SCN

receives direct input from light-sensitive cells in the retina; when light decreases in the evening, the SCN signals the nearby **pineal gland** to secrete **melatonin**, a hormone that promotes drowsiness. As morning light increases, melatonin secretion is suppressed and alertness rises.

Pathway: light detected by the retina → signal sent to the **suprachiasmatic nucleus (SCN)** in the hypothalamus → SCN regulates the **pineal gland** → pineal gland secretes **melatonin** (more in darkness, less in light) → melatonin shifts the body toward sleepiness or alertness. Because the SCN's internal cycle runs close to, but not exactly, 24 hours, it must be reset (**entrained**) daily by light exposure; without external light cues, the free-running rhythm typically drifts slightly longer than 24 hours.

Ví dụ mẫu · Jet lag and shift work as circadian disruption

A flight attendant flies from New York to Tokyo, a 13-hour time difference, and feels intensely fatigued and alert at the wrong times for several days. Explain this using circadian rhythm concepts, and explain why bright light exposure at the destination, timed correctly, speeds recovery.

The traveler's suprachiasmatic nucleus remains synchronized to New York's light-dark cycle even though local Tokyo time has shifted by 13 hours, so melatonin is released and suppressed at times that no longer match the local day-night cycle; the traveler feels sleepy during Tokyo daytime and alert during Tokyo nighttime. This mismatch is **jet lag**. Because the SCN entrains to light, controlled exposure to bright light at the correct new local times gradually shifts the timing of the SCN's signal to the pineal gland, resetting the melatonin release schedule to match the new time zone. The same principle explains why night-shift workers struggle to feel alert at night and sleepy during the day: their circadian rhythm continues to push melatonin release and sleepiness toward the biological "night," regardless of their work schedule.

GIẢI THÍCH TIẾNG VIỆT

VN

Nhịp sinh học (circadian rhythm) là chu kỳ sinh học khoảng 24 giờ điều chỉnh sự tỉnh táo và buồn ngủ. **Nhân trên chéo thị (SCN)** nằm trong vùng dưới đồi (hypothalamus) là "đồng hồ sinh học chủ" của cơ thể, nhận tín hiệu ánh sáng từ võng mạc và điều khiển **tuyến tủy tiết melatonin** – hormone gây buồn ngủ, được tiết nhiều hơn khi trời tối. Đây là lý do ánh sáng xanh từ màn hình điện thoại vào ban đêm có thể ức chế tiết melatonin và gây khó ngủ, còn lệch múi giờ (jet lag) hay làm việc ca đêm gây rối loạn vì nhịp sinh học không khớp với thời gian địa phương.

2.1.3 Stages of sleep

Sleep is not a uniform state; it cycles through distinct stages that can be identified by characteristic patterns of electrical brain activity recorded with an **electroencephalograph (EEG)**. While awake and alert, the brain produces small, fast **beta waves**; while awake but relaxed with eyes closed, it shifts to slower **alpha waves**.

The stages of sleep

NREM Stage 1: the lightest stage of sleep, marking the transition from wakefulness to sleep; EEG shows slow **theta waves**; may include brief **hypnagogic sensations** (a falling or floating sensation, sudden muscle jerks). Lasts only a few minutes.

NREM Stage 2: a deeper stage characterized by **sleep spindles** (brief bursts of rapid, rhythmic brain-wave activity) and **K-complexes** (large, sudden spikes, thought to suppress arousal in response to stimuli and to aid memory consolidation), against a background of continuing theta

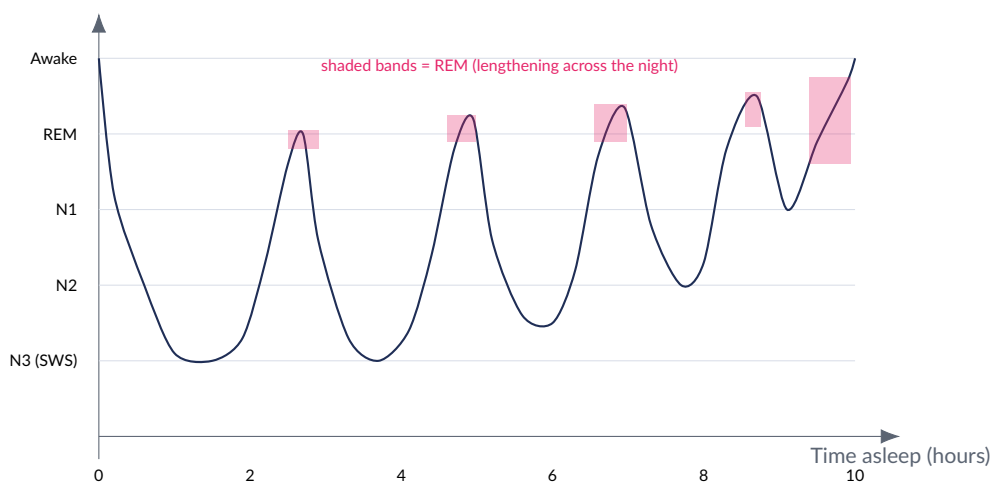
waves. People spend the largest proportion of total sleep time in Stage 2.

NREM Stage 3 (slow-wave sleep, SWS): the deepest stage of NREM sleep, dominated by large, slow **delta waves**. This is the stage from which it is hardest to be awakened, and it is associated with the release of growth hormone and physical restoration.

REM sleep (rapid eye movement sleep): EEG activity resembles the fast, low-amplitude waves of a nearly awake brain — hence its nickname, **paradoxical sleep**: the brain is highly active, heart rate and breathing become irregular, and the eyes dart rapidly beneath closed lids, yet the voluntary skeletal muscles are almost completely paralyzed (**muscle atonia**), preventing the sleeper from acting out dreams. Most vivid, narrative dreaming occurs during REM.

Stage	EEG pattern	Key features
Awake, alert	Beta waves (fast, small)	Full conscious attention
Awake, relaxed	Alpha waves (slower)	Eyes closed, relaxed wakefulness
NREM 1	Theta waves	Light sleep; hypnagogic jerks/sensations
NREM 2	Theta waves + sleep spindles, K-complexes	Largest share of total sleep; further disengagement from surroundings
NREM 3 (SWS)	Delta waves (large, slow)	Deepest sleep; hardest to wake; growth hormone released
REM	Fast, low-amplitude (near-waking) waves	Muscle atonia; rapid eye movements; vivid dreaming; "paradoxical sleep"

Across a full night, sleep cycles through these stages roughly every **90 minutes**, producing about four to six cycles per night. Early cycles contain more **slow-wave sleep (NREM 3)**; as the night progresses, NREM 3 shrinks and **REM periods lengthen**, with the longest REM period typically occurring just before natural waking.



A schematic hypnogram: sleep depth oscillates through roughly 90-minute cycles across an 8-to-9-hour night. Slow-wave sleep (N3) dominates the early cycles; REM periods (shaded) become progressively longer as morning approaches.

(!) Lỗi thường gặp: Đừng nhầm lẫn: REM **không** phải là giai đoạn ngủ sâu nhất về mặt sinh lý cơ thể — NREM giai đoạn 3 (sóng chậm) mới là giai đoạn khó đánh thức nhất và có hoạt động điện não chậm nhất. REM được gọi là "giấc ngủ nghịch lý" chính vì hoạt động điện não trong REM lại nhanh, giống lúc thức, mặc dù cơ thể gần như tê liệt hoàn toàn (mất trương lực).

cơ). Đề thi thường đánh lừa bằng cách hỏi "giai đoạn ngủ sâu nhất" — câu trả lời đúng luôn là NREM 3, không phải REM.

GIẢI THÍCH TIẾNG VIỆT

VN

Giấc ngủ trải qua bốn giai đoạn chính, xác định bằng điện não đồ (EEG): **NREM 1** (sóng theta, ngủ nông, cảm giác rơi/giật mình), **NREM 2** (sóng theta xen kẽ **thoi ngủ** và **phức hợp K**, chiếm tỉ lệ lớn nhất thời gian ngủ), **NREM 3** (sóng delta chậm, ngủ sâu nhất, tiết hormone tăng trưởng), và **REM** (sóng nhanh gần giống lúc thức, mắt chuyển động nhanh, cơ thể tê liệt tạm thời, nơi diễn ra phần lớn các giấc mơ sống động). Một đêm ngủ gồm nhiều chu kỳ khoảng **90 phút**, với NREM 3 chiếm ưu thế ở đầu đêm và REM kéo dài dần về cuối đêm.

2.1.4 Sleep needs across the lifespan and the effects of sleep deprivation

Both the total amount of sleep needed and the proportion of time spent in each stage change systematically across the lifespan. Newborn infants sleep roughly 16–17 hours per day and spend an unusually large proportion of that time in REM sleep, consistent with REM's proposed role in early brain development. Sleep need declines through childhood and adolescence to roughly 8–10 hours, while typical healthy adults require about 7–9 hours per night. With advancing age, total sleep time and especially the proportion of slow-wave (NREM 3) sleep tend to decline further, and older adults typically experience more fragmented sleep with more frequent nighttime awakenings.

Consequences of sleep deprivation are broad and well documented: impaired attention, working memory, and decision-making; slowed reaction time (comparable, at sufficiently severe levels, to the impairment produced by alcohol intoxication); disrupted emotional regulation and increased irritability; weakened immune function; disrupted hormonal regulation of appetite (associated with weight gain risk); and an increased risk of accidents, including a well-documented rise in motor vehicle accidents associated with drowsy driving. A related phenomenon, the **microsleep** — a brief, involuntary lapse into sleep lasting only a few seconds, often without the person's awareness — is a particular danger during tasks such as driving.

Ví dụ mẫu · Estimating accumulated sleep debt

A college student needs 8 hours of sleep per night to function optimally but sleeps only 5.5 hours per night for 6 consecutive nights during final exams. Calculate the student's accumulated sleep debt, and explain why simply "catching up" with one long night of 10 hours of sleep afterward will not fully reverse the cognitive effects of the deficit.

Nightly deficit = $8 - 5.5 = 2.5$ hours; accumulated over 6 nights: $2.5 \times 6 =$ **15 hours** of sleep debt. A single 10-hour recovery night restores only $10 - 8 = 2$ extra hours toward that 15-hour deficit, leaving roughly 13 hours of debt still outstanding. Sleep debt does not simply "reset" cognitive functioning back to baseline after one long night; because deficits accumulate and recovery is only partial per extra hour of sleep, multiple nights of adequate or extended sleep are typically needed to fully restore attention, mood, and memory consolidation to pre-deprivation levels.

GIẢI THÍCH TIẾNG VIỆT

VN

Nhu cầu ngủ thay đổi theo độ tuổi: **trẻ sơ sinh** ngủ khoảng 16–17 giờ/ngày với tỉ lệ REM rất cao (liên quan đến phát triển não bộ sớm); nhu cầu giảm dần qua tuổi thiếu niên (8–10 giờ) và người lớn (7–9 giờ); **người lớn tuổi** thường ngủ ít sâu hơn (giảm tỉ lệ NREM 3) và dễ bị gián đoạn giấc ngủ hơn. **Thiếu ngủ** gây ra hàng loạt hậu quả: suy giảm chú ý và trí nhớ làm việc, phản ứng chậm (có thể tương đương mức say rượu), rối loạn cảm xúc, suy giảm miễn dịch, rối

loạn hormone điều hoà cảm giác đói, và tăng nguy cơ tai nạn — bao gồm **giấc ngủ chớp nhoáng** (microsleep), những khoảng "ngủ gật" không tự chủ chỉ vài giây, đặc biệt nguy hiểm khi lái xe. "Nợ ngủ" (sleep debt) tích lũy dần và không thể bù đắp hoàn toàn chỉ bằng một đêm ngủ dài.

2.2 Theories of Sleep, Sleep Disorders, and Dreaming

2.2.1 Why do we sleep?

No single theory fully explains sleep, but three complementary perspectives are widely cited.

Restoration theory: sleep allows the body and brain to repair and replenish themselves — muscle tissue is repaired, growth hormone is released (largely during NREM 3), immune function is supported, and metabolic byproducts that accumulate in the brain during waking hours are cleared.

Memory consolidation theory: sleep, and REM sleep in particular, plays an active role in strengthening and integrating newly formed memories, transferring information from temporary to more stable long-term storage.

Evolutionary (adaptive) theory: sleep evolved because immobility during predictable, typically dangerous hours (night, for most early humans) conserved energy and reduced the chance of encountering predators; a species' sleep pattern is understood as an adaptation shaped by its ecological niche.

GIẢI THÍCH TIẾNG VIỆT

VN

Ba thuyết giải thích tại sao chúng ta ngủ: **thuyết phục hồi** (sleep giúp cơ thể và não bộ tự sửa chữa, loại bỏ chất thải chuyển hoá, tiết hormone tăng trưởng); **thuyết củng cố trí nhớ** (giấc ngủ, đặc biệt là REM, giúp củng cố và tích hợp trí nhớ mới hình thành); và **thuyết tiến hoá/thích nghi** (ngủ giúp tiết kiệm năng lượng và tránh nguy hiểm vào những giờ bất lợi, ví dụ ban đêm đối với tổ tiên loài người). Ba thuyết này không loại trừ nhau mà bổ sung cho nhau.

2.2.2 Sleep disorders

Major sleep disorders

Insomnia: persistent difficulty falling asleep or staying asleep, resulting in inadequate rest; the most common sleep complaint.

Narcolepsy: a disorder of sleep regulation marked by sudden, uncontrollable "sleep attacks," often with intrusions of REM-like muscle paralysis (**cataplexy**, sometimes triggered by strong emotion) directly into waking life.

Sleep apnea: repeated interruptions of breathing during sleep, causing the sleeper to briefly wake — often without full awareness — many times per night; associated with loud snoring and daytime fatigue.

Night terrors: episodes of intense fear, screaming, and autonomic arousal (racing heart, sweating) that occur during **NREM Stage 3**, mostly in children; unlike nightmares, the sleeper typically has no memory of the episode afterward.

Somnambulism (sleepwalking): walking or performing other complex behaviors while still in **NREM Stage 3**, most common in childhood, typically with no memory of the episode.

Disorder/event	Sleep stage	Note
Nightmare	REM	Vivid, frightening dream; typically recalled in detail
Night terror	NREM 3	Screaming, intense fear; typically not recalled
Sleepwalking	NREM 3	Complex motor behavior with no dream recall
REM behavior intrusions (narcolepsy/cataplexy)	Waking intrusion of REM-like paralysis	Sudden muscle weakness/collapse, often emotion-triggered

(!) Lỗi thường gặp: Học sinh thường nhầm ác mộng (nightmare) với cơn hoảng sợ khi ngủ (night terror). Ác mộng xảy ra trong giấc ngủ REM và người ngủ thường nhớ rõ nội dung giấc mơ đáng sợ khi tỉnh dậy. Cơn hoảng sợ khi ngủ xảy ra trong NREM 3 (ngủ sâu), thường gặp ở trẻ nhỏ, đi kèm la hét và các dấu hiệu kích thích hệ thần kinh tự chủ mạnh, nhưng người trải qua **hầu như không nhớ gì** vào sáng hôm sau. Mộng du (somnambulism) cũng xảy ra ở NREM 3, không phải REM — điều này hợp lý vì trong REM cơ thể bị tê liệt nên về mặt sinh lý không thể đi lại được.

GIẢI THÍCH TIẾNG VIỆT

VN

Các rối loạn giấc ngủ chính: **mất ngủ** (insomnia — khó vào giấc hoặc khó duy trì giấc ngủ); **chứng ngủ rũ** (narcolepsy — cơn buồn ngủ đột ngột không kiểm soát được, kèm theo mất trương lực cơ giống REM ngay khi đang thức); **ngưng thở khi ngủ** (sleep apnea — ngừng thở lặp đi lặp lại trong đêm gây tỉnh giấc nhiều lần); **hoảng sợ khi ngủ** (night terror — xảy ra ở NREM 3, không nhớ lại được); và **mộng du** (somnambulism — cũng xảy ra ở NREM 3).

2.2.3 Theories of dreaming

Why do we dream?

Freud's wish-fulfillment theory: dreams express unconscious wishes and impulses that would be unacceptable if expressed directly. The **manifest content** is the dream as consciously remembered and reported; the **latent content** is its underlying, disguised true meaning, which Freud believed psychoanalysis could uncover.

Activation-synthesis theory (Hobson & McCarley): during REM sleep, the brainstem generates essentially random bursts of neural activity; the cerebral cortex attempts to make sense of this activity by weaving it into a coherent narrative — the dream. On this view, dream content reflects the brain's storytelling response to internally generated noise, not a hidden unconscious message.

Information-processing (memory consolidation) view: dreaming, especially during REM, helps sort, process, and consolidate the day's experiences and information into memory, reflecting the ongoing cognitive activity of memory formation rather than either wish fulfillment or random noise alone.

Ví dụ mẫu · Interpreting one dream through three theories

A student who is anxious about an upcoming exam dreams of showing up to school without having studied and failing a test. Explain how a Freudian, an activation-synthesis, and an information-processing theorist would each interpret this dream.

A **Freudian** theorist would treat the dream's **manifest content** (failing an exam) as a disguised expression of a deeper, possibly less acceptable **latent** anxiety — for example, a fear of disappointing a parent or of not being competent — that the exam merely symbolizes.

An **activation-synthesis** theorist would argue the brainstem generated random neural activity during REM, and the cortex simply incorporated the student's most recent, most emotionally salient waking concern (the exam) into a narrative that made sense of that random activity — no hidden meaning is required.

An **information-processing** theorist would view the dream as a sign that the brain is actively re-viewing and consolidating recent, emotionally significant experiences (worry about the exam) as part of ordinary memory processing during sleep, without needing to invoke either disguised wishes or purely random noise.

GIẢI THÍCH TIẾNG VIỆT

VN

Ba thuyết giải thích giấc mơ: **thuyết ước muốn được thoả mãn** của Freud (giấc mơ thể hiện những ham muốn vô thức bị dồn nén; **nội dung hiển hiện** là giấc mơ như ta nhớ lại, **nội dung tiềm ẩn** là ý nghĩa thật sự bị che giấu bên dưới); **thuyết kích hoạt-tổng hợp** của Hobson và McCarley (não thân kích hoạt ngẫu nhiên trong REM, vỏ não "dệt" các tín hiệu ngẫu nhiên đó thành một câu chuyện có nghĩa); và **thuyết xử lý thông tin** (giấc mơ phản ánh quá trình não bộ sắp xếp và củng cố trí nhớ về những trải nghiệm trong ngày). Đây là một trong những chủ đề học sinh hay bị hỏi dạng "giải thích một giấc mơ theo nhiều thuyết khác nhau."

2.3 Hypnosis and Psychoactive Drugs

2.3.1 Hypnosis

Hypnosis is a social interaction in which one person (the hypnotist) suggests to another that certain perceptions, feelings, thoughts, or behaviors will spontaneously occur. Two theories offer competing explanations of what hypnosis actually is.

Theories of hypnosis

Social influence theory: hypnosis is not a unique altered state of consciousness at all, but ordinary social behavior — a hypnotized person is highly motivated to act out the social role of "hypnotized subject," responding to the hypnotist's suggestions much as people conform to other social expectations.

Dissociation theory (Ernest Hilgard): hypnosis involves a genuine splitting of consciousness into two simultaneous streams of awareness. One stream complies openly with the hypnotist's suggestions (e.g., reporting no pain), while a dissociated **"hidden observer"** stream remains aware of what is actually happening (e.g., can indicate, if asked in a special way, that pain is in fact still being registered).

GIẢI THÍCH TIẾNG VIỆT

VN

Thôi miên (hypnosis) là trạng thái người bị thôi miên phản ứng theo các gợi ý của người thôi miên. **Thuyết ảnh hưởng xã hội** cho rằng thôi miên không phải trạng thái ý thức đặc biệt mà chỉ là hành vi xã hội thông thường — người bị thôi miên đóng đúng "vai trò xã hội" được kỳ vọng. **Thuyết phân ly** của Ernest Hilgard cho rằng thôi miên tạo ra sự **phân tách ý thức** thật sự thành hai luồng: một luồng tuân theo gợi ý (ví dụ báo không đau), và một "người quan sát ẩn" (hidden observer) vẫn nhận biết được cảm giác thật (ví dụ vẫn ghi nhận cơn đau nếu được hỏi theo cách đặc biệt).

Beyond laboratory demonstrations, hypnosis has documented practical applications: it can help some individuals reduce the perceived intensity of chronic or procedural pain (**hypnotic analgesia**), assist with smoking cessation and other habit change when combined with a person's own motivation, and reduce anxiety before certain medical procedures. Its effectiveness varies considerably across individuals in their **hypnotic suggestibility** – some people respond strongly to hypnotic suggestion while others show little response – and hypnosis is not effective for reliably retrieving accurate memories (attempts to use hypnosis to "recover" forgotten memories, such as in some legal contexts, actually raise the risk of the misinformation effect and false memory creation described in Section 6, rather than reliably improving accuracy).

(!) Lỗi thường gặp: Một ngộ nhận phổ biến: thôi miên KHÔNG giúp con người nhớ lại ký ức bị quên một cách chính xác hơn, và cũng không thể khiến người bị thôi miên làm những việc hoàn toàn trái với ý muốn hay giá trị đạo đức của họ chỉ vì bị "ra lệnh." Trên thực tế, việc dùng thôi miên để "khôi phục" ký ức (ví dụ trong điều tra hình sự) có thể làm **tăng** nguy cơ tạo ra ký ức sai lệch (liên quan đến hiệu ứng thông tin sai lệch sẽ học ở phần Trí nhớ), chứ không giúp ký ức chính xác hơn.

2.3.2 Psychoactive drugs

Psychoactive drugs are chemical substances that alter perception, mood, thinking, or behavior by changing brain chemistry, typically by acting at neurotransmitter receptor sites in synapses (see Unit 1). They are grouped by their overall effect on the central nervous system.

Categories of psychoactive drugs

Depressants slow down central nervous system activity, reducing neural firing and producing relaxation or sedation: **alcohol** (enhances GABA's inhibitory effect and impairs judgment, coordination, and reaction time), **barbiturates** (sedative-hypnotics that depress CNS activity, used historically as sleep aids but dangerous in overdose or combined with alcohol), and **opioids/-narcotics** (e.g., morphine, heroin, oxycodone; bind endorphin receptors, producing powerful pain relief and euphoria, alongside significant risk of dependence and fatal respiratory depression in overdose).

Stimulants excite central nervous system activity, speeding up neural firing and heightening energy and mood: **caffeine** and **nicotine** (milder, widely used stimulants), **amphetamines**, and **cocaine** (potent stimulants that increase the availability of dopamine and norepinephrine at the synapse, producing euphoria, increased energy, and reduced appetite, along with high potential for dependence).

Hallucinogens distort perception and evoke sensory images without an external source: **LSD** (a powerful synthetic hallucinogen acting on serotonin receptors, producing vivid and often unpredictable perceptual distortions) and **marijuana (THC)** (binds cannabinoid receptors; effects vary from mild relaxation and altered time perception to mild perceptual distortion, and can impair short-term memory and coordination).

Category	Examples	Typical effect
Depressants	Alcohol, barbiturates, opioids/narcotics	Slow CNS activity; relaxation, sedation; opioids add strong pain relief and euphoria
Stimulants	Caffeine, nicotine, amphetamines, cocaine	Speed up CNS activity; increased energy, alertness, elevated mood
Hallucinogens	LSD, marijuana (THC)	Distort perception; sensory images without external stimulus

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Chất tác động tâm thần thay đổi nhận thức, cảm xúc, hoặc hành vi bằng cách tác động lên hoá học thần kinh (thường tại synapse). Ba nhóm chính: **chất ức chế** (depressants — làm chậm hệ thần kinh trung ương: rượu, barbiturate, opioid/thuốc giảm đau gây nghiện — opioid vừa giảm đau vừa gây khoái cảm mạnh); **chất kích thích** (stimulants — tăng tốc hệ thần kinh trung ương: caffeine, nicotine, amphetamine, cocaine — cocaine và amphetamine làm tăng dopamine và norepinephrine tại synapse); và **chất gây ảo giác** (hallucinogens — làm biến dạng nhận thức giác quan: LSD, cần sa/THC).

2.3.3 Tolerance, dependence, and receptor action

Repeated use of a psychoactive drug produces predictable physiological adaptations.

Tolerance: with repeated use, the body adapts and progressively larger doses are needed to achieve the same effect.

Physical dependence: the body has adapted so thoroughly to the drug's presence that it requires the drug to function normally; stopping produces **withdrawal** — unpleasant, sometimes dangerous physical and psychological symptoms.

Psychological dependence: a perceived need or strong craving to use a drug for emotional or psychological reasons (e.g., to cope with stress), even without a strong physical withdrawal syndrome.

Agonist: a molecule that binds to a receptor and mimics or enhances a neurotransmitter's normal effect (e.g., opioids act as agonists at endorphin receptors).

Antagonist: a molecule that binds to a receptor and blocks or reduces a neurotransmitter's normal effect (e.g., naloxone is an opioid antagonist used to reverse overdose by blocking opioid receptors).

(!) **Lỗi thường gặp:** Học sinh dễ nhầm **agonist** và **antagonist**. Hãy nhớ: **agonist** = "đồng tình, hỗ trợ" → **bắt chước hoặc tăng cường** tác dụng của chất dẫn truyền thần kinh tại thụ thể. **Antagonist** = "đối kháng, chống lại" → **chặn hoặc làm giảm** tác dụng đó. Ví dụ: opioid là agonist tại thụ thể endorphin (gây khoái cảm, giảm đau); naloxone là antagonist tại cùng thụ thể đó (dùng để cấp cứu người dùng quá liều opioid vì nó chặn thụ thể, đẩy chất gây nghiện ra).

Ví dụ mẫu · Tolerance, dependence, and withdrawal in one case

A person who has taken a prescribed opioid painkiller daily for several months finds that the original dose no longer relieves pain and that missing even one dose brings on nausea, muscle aches, and anxiety. Identify and explain each concept illustrated.

The original dose no longer working illustrates **tolerance**: repeated opioid exposure has changed the number or sensitivity of endorphin receptors, so a larger dose is now required for the same pain-relieving effect. The nausea, muscle aches, and anxiety upon missing a dose illustrate **physical dependence** and **withdrawal**: the body has physiologically adapted to the constant presence of the opioid (an agonist at endorphin receptors) and now requires it to maintain normal functioning; removing it produces an aversive rebound of symptoms. If the person also feels an intense emotional urge to take the drug even after physical withdrawal resolves, that reflects **psychological dependence**.

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Dung nạp (tolerance) là hiện tượng cần liều ngày càng cao để đạt hiệu quả như trước. **Lệ thuộc thể chất** (physical dependence) là khi cơ thể cần chất đó để hoạt động bình thường, ngừng dùng sẽ gây **hội chứng cai** (withdrawal). **Lệ thuộc tâm lý** (psychological dependence) là nhu cầu hoặc thèm muốn về mặt cảm xúc, có thể tồn tại độc lập với lệ thuộc thể chất. **Chất đồng vận** (agonist) bắt chước/tăng cường tác dụng chất dẫn truyền thần kinh tại thụ thể; **chất đối kháng** (antagonist) chặn tác dụng đó — đây là khái niệm nổi lại với phần synapse và thụ thể đã học ở Unit 1.

2.4 Memory: The Multi-Store Model and Working Memory

2.4.1 The Atkinson–Shiffrin three-stage model

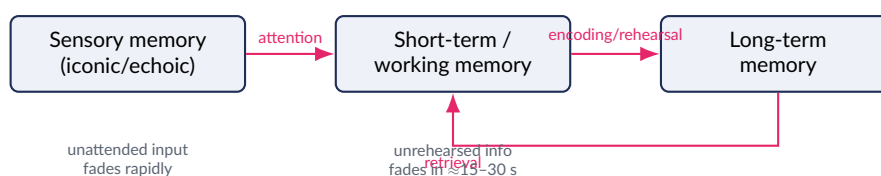
The classic **multi-store (modal) model** of memory, proposed by Richard Atkinson and Richard Shiffrin, describes information flowing through three distinct stores.

Atkinson–Shiffrin model

Sensory memory: an extremely brief, high-capacity initial record of incoming sensory information. **Iconic memory** holds visual images for a fraction of a second (well under one second); **echoic memory** holds auditory information for a few seconds (roughly 3–4 seconds). Only information that receives **attention** passes on to the next stage; the rest fades rapidly.

Short-term memory (STM): holds a small amount of information actively but briefly (about 15–30 seconds without rehearsal). Capacity is limited to roughly **seven items, plus or minus two** (Miller's "magic number seven"); this capacity can be stretched through **chunking** — grouping individual items into larger, meaningful units. **Maintenance rehearsal** (simple repetition) keeps information active in STM but, by itself, is a relatively weak route into long-term storage.

Long-term memory (LTM): a relatively permanent and essentially unlimited store, in both capacity and duration, reached via deeper **encoding** of material rehearsed or attended to in STM.



The Atkinson–Shiffrin multi-store model: attention moves information from sensory memory into short-term/working memory; encoding and rehearsal move it into long-term memory; retrieval brings stored information back into active (working) memory.

Ví dụ mẫu · Chunking and STM capacity

A participant is read the string of digits "4 9 1 8 7 7 6 6 3 2 0 1 4" and asked to recall it immediately. Recalled as 13 separate digits, this exceeds the roughly seven-item capacity of short-term memory. Explain how chunking could allow a participant to recall the entire string successfully.

If the participant notices that the digits form four meaningful chunks — historically significant years "1918," "1776," "6320," and "1" is left over, or more naturally groups like "491," "877," "663," "2014" — each chunk can be held as a single unit in short-term memory rather than as multiple separate digits. Because STM capacity is limited to roughly seven *items* regardless of how much information each item contains, recoding 13 digits into 4–5 meaningful chunks brings the load back within the seven-item limit, allowing accurate recall of information that

would otherwise exceed capacity. This is the same principle behind memorizing phone numbers in grouped blocks rather than as a single string of digits.

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Mô hình **Atkinson-Shiffrin** mô tả trí nhớ gồm ba kho lưu trữ nối tiếp nhau: **trí nhớ cảm giác** (rất ngắn, dung lượng lớn – trí nhớ hình ảnh "iconic" chưa đến 1 giây, trí nhớ âm thanh "echoic" khoảng 3–4 giây), **trí nhớ ngắn hạn** (dung lượng giới hạn khoảng 7 ± 2 đơn vị theo "con số kỳ diệu" của Miller, có thể mở rộng nhờ **chunking** – gom nhóm thông tin), và **trí nhớ dài hạn** (dung lượng và thời gian lưu trữ gần như không giới hạn). Chú ý đến (attention) là cửa ngõ chuyển từ trí nhớ cảm giác sang trí nhớ ngắn hạn; mã hoá/nhẩm lại (encoding/rehearsal) là cửa ngõ chuyển sang trí nhớ dài hạn.

2.4.2 Baddeley's working memory model

Alan Baddeley and Graham Hitch refined the simple "short-term memory box" into a more dynamic **working memory model** – an active workspace that not only stores information briefly but manipulates it.

Baddeley's working memory model

Central executive: directs attention and coordinates the other components, allocating cognitive resources among ongoing tasks.

Phonological loop: stores and rehearses verbal and auditory information (an "inner voice").

Visuospatial sketchpad: stores and manipulates visual and spatial information (a "mental image" workspace).

Episodic buffer (added later): integrates information from the phonological loop, the visuospatial sketchpad, and long-term memory into a single, coherent representation of an ongoing episode.

Ví dụ mẫu · Dual-task interference and working memory components

A participant is asked to perform two tasks at once: (1) silently repeat a nonsense syllable over and over, and (2) mentally rotate a rotating letter shape to judge whether it is normal or mirror-image. Predict whether these two tasks will interfere with each other, and explain why using Baddeley's model.

The two tasks should interfere **very little** with each other, because they draw on **different** working memory components: repeating a syllable occupies the **phonological loop** (verbal/auditory), while mentally rotating a shape occupies the **visuospatial sketchpad** (visual/spatial). Because each subsystem has its own limited capacity operating somewhat independently, two tasks that load different subsystems can often be performed simultaneously with only mild cost. By contrast, if the second task were instead silently naming letters (also verbal), it would compete directly with the syllable-repetition task for the same phonological loop resources, producing much greater interference. This dissociation between verbal and visuospatial interference is one of the strongest pieces of evidence for treating them as separate working-memory subsystems rather than one undifferentiated "short-term memory."

(!) Lỗi thường gặp: "Trí nhớ ngắn hạn" (short-term memory) và "trí nhớ làm việc" (working memory) thường được dùng thay thế cho nhau trên đề thi, nhưng về mặt khái niệm không hoàn toàn giống nhau: trí nhớ ngắn hạn trong mô hình Atkinson-Shiffrin nhấn mạnh việc **lưu**

trữ thụ động tạm thời, còn trí nhớ làm việc trong mô hình Baddeley nhấn mạnh việc **thao tác chủ động** thông tin qua nhiều thành phần chuyên biệt (vòng lặp ngữ âm, bảng phác hoạ không gian thị giác, bộ đệm tình tiết, điều hành trung tâm). Khi đề bài nhắc đến "central executive," "phonological loop," hay "visuospatial sketchpad," đó chắc chắn là mô hình Baddeley, không phải mô hình ba giai đoạn cổ điển.

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Mô hình **trí nhớ làm việc** của Baddeley chia nhỏ "trí nhớ ngắn hạn" thành các thành phần chuyên biệt: **điều hành trung tâm** (central executive – phân bổ sự chú ý, điều phối các thành phần khác), **vòng lặp ngữ âm** (phonological loop – lưu trữ thông tin bằng lời nói/âm thanh), **bảng phác hoạ không gian thị giác** (visuospatial sketchpad – lưu trữ thông tin hình ảnh/không gian), và **bộ đệm tình tiết** (episodic buffer – tích hợp thông tin từ các thành phần trên và từ trí nhớ dài hạn thành một trải nghiệm thống nhất). Đây là bản nâng cấp chi tiết hơn so với "hộp trí nhớ ngắn hạn" đơn giản trong mô hình cũ.

2.5 Long-Term Memory, Encoding, and Retrieval

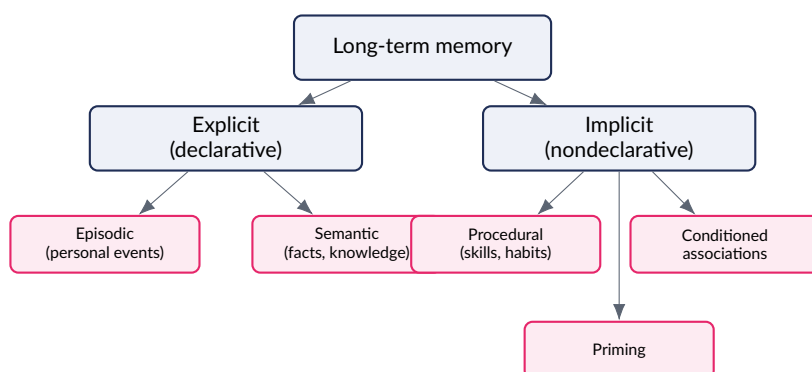
2.5.1 Explicit and implicit long-term memory

Long-term memory is not a single unified system; it divides into subtypes with distinct properties and, as later sections show, distinct underlying brain structures.

Subtypes of long-term memory

Explicit (declarative) memory: memories that can be consciously recollected and stated. **Episodic memory** stores personally experienced events (e.g., your last birthday); **semantic memory** stores general facts and knowledge about the world, not tied to a specific personal experience (e.g., knowing that Paris is the capital of France).

Implicit (nondeclarative) memory: memories that influence behavior without requiring conscious recollection. **Procedural memory** stores learned skills and habits (e.g., riding a bicycle, typing); **classically conditioned associations** store learned emotional or reflexive responses (e.g., a fear response to a previously neutral stimulus, see Unit on learning); **priming** occurs when earlier exposure to a stimulus influences (typically speeds or biases) the response to a later, related stimulus, without any conscious memory of the earlier exposure.



Long-term memory subtypes. Explicit/declarative memory (episodic and semantic) requires conscious recollection; implicit/nondeclarative memory (procedural memory, conditioned associations, priming) influences behavior without conscious recall.

Subtype	Conscious?	Example
Episodic (explicit)	Yes	Recalling your first day of high school
Semantic (explicit)	Yes	Knowing the chemical formula for water
Procedural (implicit)	No	Riding a bicycle without consciously thinking through each step
Conditioned association (implicit)	No	Flinching at the sound of a dentist's drill
Priming (implicit)	No	Recognizing the word "doctor" faster after recently seeing the word "nurse"

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Trí nhớ dài hạn chia thành hai nhánh lớn: **trí nhớ tường minh** (explicit/declarative – có thể ý thức gọi lại và diễn đạt bằng lời, gồm **trí nhớ tình tiết/sự kiện** về những trải nghiệm cá nhân và **trí nhớ ngữ nghĩa** về kiến thức, sự kiện chung của thế giới) và **trí nhớ không tường minh** (implicit/nondeclarative – ảnh hưởng đến hành vi mà không cần ý thức gọi lại, gồm **trí nhớ thủ tục** về kỹ năng/thói quen, các **liên kết được điều kiện hoá cổ điển**, và hiện tượng **mồi** (priming) – tiếp xúc trước với một kích thích làm ảnh hưởng đến phản ứng với kích thích liên quan sau đó).

2.5.2 Encoding strategies

How information is processed at the moment of learning strongly determines how well it will be remembered later.

Encoding strategies

Elaborative rehearsal: linking new information to existing knowledge or to its meaning, rather than simply repeating it; produces much stronger long-term retention than maintenance rehearsal alone.

Self-reference effect: information is remembered better when it is related to oneself personally.

Mnemonic devices: memory aids that impose organization on to-be-learned material, including the **method of loci** (mentally placing items to be remembered at locations along a familiar path, then "walking" the path to retrieve them), **chunking** (grouping items into larger meaningful units), and **acronyms** (using the first letters of a list to form a memorable word or phrase).

Spacing effect: material studied in several separate, spaced-out sessions (**distributed practice**) is retained substantially better than the same amount of material crammed into a single session (**massed practice**).

Levels-of-processing framework (Craik & Lockhart): the depth at which information is processed determines how well it is remembered. **Shallow/structural processing** (attending only to physical appearance, e.g., whether a word is in capital letters) produces poor retention; **phonemic processing** (attending to sound, e.g., whether a word rhymes with another) produces moderate retention; **deep/semantic processing** (attending to meaning, e.g., whether a word fits into a sentence) produces the strongest retention.

Ví dụ mẫu · Designing a study around the spacing effect

A researcher wants to test whether distributed practice improves vocabulary retention compared with massed practice. Participants are randomly assigned to Group A, which studies 40 foreign-language words in one 60-minute session, or Group B, which studies the same 40

words across four 15-minute sessions spread over four days. One week after their last study session, both groups take an identical recall test. Identify the independent variable, the dependent variable, and the predicted result, and explain why random assignment matters here. The **independent variable** is the study schedule (massed practice in one session vs. distributed practice across four sessions); the **dependent variable** is the number of words correctly recalled on the test one week later. Based on the spacing effect, Group B (distributed practice) should recall significantly more words than Group A (massed practice), even though both groups spent the same total amount of study time (60 minutes) with the material. **Random assignment** matters because it distributes any pre-existing differences between participants (e.g., prior language experience, general memory ability) roughly evenly between the two groups, so that a difference in recall can be attributed to the study schedule itself rather than to systematic differences between the groups.

(!) **Lỗi thường gặp:** Đừng nhầm **nhắm lại duy trì** (maintenance rehearsal — chỉ lặp lại thông tin nguyên trạng) với **nhắm lại tinh luyện** (elaborative rehearsal — liên kết thông tin mới với kiến thức đã có hoặc với ý nghĩa). Nhắm lại duy trì chỉ giữ thông tin tồn tại trong trí nhớ ngắn hạn lâu hơn một chút và tạo ra trí nhớ dài hạn khá yếu; nhắm lại tinh luyện tạo ra mã hoá sâu hơn (theo khung xử lý theo mức độ sâu của Craik và Lockhart) và cho trí nhớ dài hạn bền vững hơn nhiều. Trên đề thi, một câu hỏi mô tả việc "chỉ lặp đi lặp lại một số điện thoại" là nhắm lại duy trì; một câu hỏi mô tả việc "liên hệ một từ mới với một câu chuyện cá nhân" là nhắm lại tinh luyện.

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Các chiến lược mã hoá then chốt: **nhắm lại tinh luyện** (liên kết thông tin mới với kiến thức sẵn có); **hiệu ứng tự quy chiếu** (nhớ tốt hơn khi thông tin liên quan đến bản thân); **thiết bị ghi nhớ** (phương pháp loci/"cung điện trí nhớ," chunking, từ viết tắt gợi nhớ); **hiệu ứng giãn cách** (học rải rác qua nhiều buổi nhớ tốt hơn học dồn một lần — "học nhồi nhét" là chiến lược kém hiệu quả nhất); và **khung xử lý theo mức độ sâu** của Craik và Lockhart (xử lý càng sâu về mặt ý nghĩa — so với chỉ xử lý hình thức hoặc âm thanh — thì trí nhớ càng bền).

2.5.3 Retrieval cues and the serial position effect

Successfully recalling information from long-term memory often depends on the availability of appropriate **retrieval cues** — stimuli that help trigger recall of previously stored information.

Context-dependent memory: retrieval is better when it occurs in the same external environment/context as encoding (e.g., recalling material better in the same room where it was studied).

State-dependent memory: retrieval is better when a person is in the same internal physiological or emotional state as during encoding (e.g., recalling information better while in the same mood, or under the influence of the same substance, as when it was learned).

Tip-of-the-tongue phenomenon: the frustrating experience of being certain that a specific memory (often a word or name) is stored and retrievable, yet being temporarily unable to produce it.

Serial position effect: when recalling a list, items at the **beginning** are recalled well (the **primacy effect** — these items received more rehearsal and had time to transfer into long-term memory) and items at the **end** are recalled well (the **recency effect** — these items are still active in short-term/working memory at the moment of recall), while items in the **middle** are recalled worst.

Ví dụ mẫu · Reading and interpreting a serial position curve

Participants study a list of 20 words and immediately try to recall as many as possible in any order. Recall accuracy is plotted against each word's position in the list: words 1–3 are recalled about 65% of the time, words 9–12 are recalled about 20% of the time, and words 18–20 are recalled about 80% of the time. Interpret this pattern, and predict what would happen to the recency portion of the curve if recall were instead tested after a 30-second delay filled with a distracting counting task.

The high recall rate for early words (65%) reflects the **primacy effect**: these words received the most cumulative rehearsal as the list was presented and had time to be encoded into long-term memory. The high recall rate for the final words (80%) reflects the **recency effect**: at the moment of the immediate recall test, these words are still held actively in short-term/working memory and can be reported directly, without needing retrieval from long-term storage. The poor recall for middle words (20%) reflects the fact that they received neither the extended rehearsal advantage of early items nor the direct short-term-memory availability of late items. If a 30-second distractor task is inserted before recall, the recency effect should largely **disappear** (recall for the last few words should drop toward the level of the middle words), because the distractor task displaces the final words out of the limited-capacity short-term memory before they can be reported – while the primacy effect should remain largely intact, since those early words are already consolidated in long-term memory.

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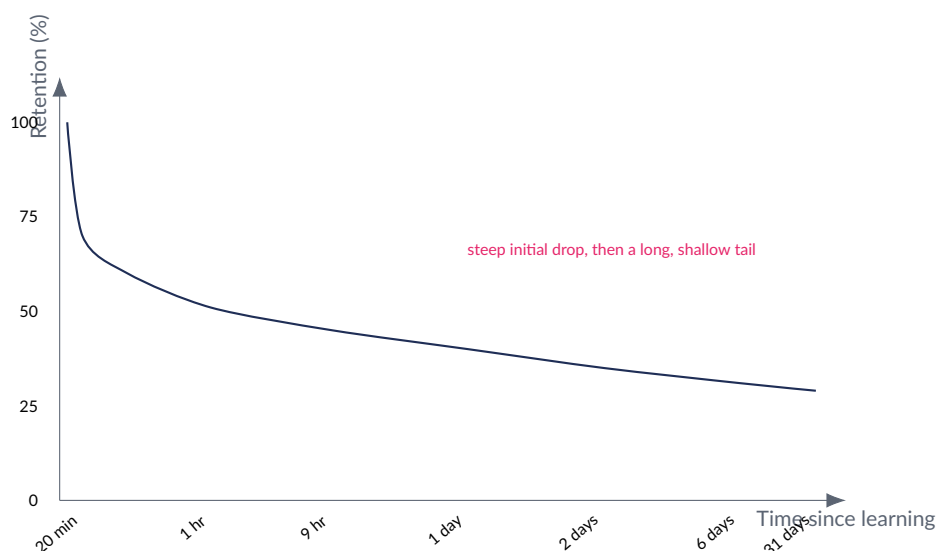
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Hiệu ứng vị trí trong danh sách (serial position effect) gồm hai phần: **hiệu ứng đầu tiên** (primacy effect – nhớ tốt các mục ở đầu danh sách vì được nhắc lại nhiều lần và đã chuyển vào trí nhớ dài hạn) và **hiệu ứng gần đây** (recency effect – nhớ tốt các mục ở cuối danh sách vì chúng vẫn còn trong trí nhớ ngắn hạn tại thời điểm nhớ lại). Nếu có một nhiệm vụ gây xao nhãng chen vào trước khi nhớ lại, hiệu ứng gần đây sẽ biến mất (vì trí nhớ ngắn hạn bị "đẩy" thông tin cuối ra ngoài), nhưng hiệu ứng đầu tiên vẫn giữ nguyên. **Trí nhớ phụ thuộc bối cảnh** (context-dependent) và **trí nhớ phụ thuộc trạng thái** (state-dependent) đều là ví dụ về tầm quan trọng của **gợi ý truy xuất** (retrieval cues) – khớp môi trường bên ngoài hoặc trạng thái bên trong lúc mã hoá với lúc truy xuất giúp nhớ lại tốt hơn.

2.6 Forgetting and the Construction of Memory

2.6.1 The Ebbinghaus forgetting curve and causes of forgetting

Hermann Ebbinghaus, working in the 1880s using himself as a subject and lists of meaningless three-letter nonsense syllables, produced the first systematic data on forgetting over time. His central finding, the **forgetting curve**, shows that forgetting is fastest immediately after learning and then levels off.



The Ebbinghaus forgetting curve: retention of newly learned, meaningless material drops sharply within the first hours after learning, then declines much more gradually over following days.

Ví dụ mẫu · Reading a forgetting-curve data table

A memory researcher tests recall of a list of nonsense syllables at several delays after initial learning and records the following percentages retained:

Delay	20 min	1 hour	9 hours	1 day	6 days
% retained	58%	44%	36%	33%	25%

Describe the shape of this data, and explain what it indicates about *when* rehearsal or review would be most valuable if the goal is to prevent forgetting.

The data show a classic Ebbinghaus pattern: retention drops sharply between 20 minutes and 9 hours (58% → 36%, a 22-point drop within the first day) but then declines much more gradually between 1 day and 6 days (33% → 25%, an 8-point drop over five additional days). Because the steepest loss occurs **soon after initial learning**, a review session scheduled within the first few hours to one day after learning would intercept the largest share of forgetting and consolidate the material before the rapid early decay takes its toll; reviewing again after several days addresses the smaller, slower ongoing decay. This reasoning underlies the practical study advice to review new material soon after first encountering it, and again at increasing intervals afterward (spaced practice, Section 2.5).

Causes of forgetting

Encoding failure: information was never adequately encoded into memory in the first place, so there is nothing to forget or retrieve.

Storage decay: a memory trace, once stored, gradually fades or weakens over time if it is not periodically accessed or reinforced.

Interference: one memory competes with and disrupts another. **Proactive interference** occurs when **older** learning disrupts recall of **newer** learning (e.g., an old phone number keeps popping up when trying to recall a new one). **Retroactive interference** occurs when **newer** learning disrupts recall of **older** learning (e.g., learning a new language makes it harder to recall vocabulary from a language studied years earlier).

Motivated forgetting: the controversial Freudian concept of **repression** proposes that painful

or threatening memories are unconsciously pushed out of awareness to protect the self; contemporary memory research finds little solid empirical support for the specific mechanism of repression, and the topic (particularly "recovered" repressed memories) remains scientifically contested.

(!) Lỗi thường gặp: Học sinh thường lẫn lộn hướng của **nhieu thuận chiều** (proactive interference) và **nhieu ngược chiều** (retroactive interference). Mẹo nhớ: **pro-** = "đi tới, tiến về phía trước" → trí nhớ **cũ** cản trở việc học/nhớ **mới** (thông tin cũ "tiến về phía trước" gây rối thông tin mới). **Retro-** = "lùi lại phía sau" → trí nhớ **mới** cản trở việc nhớ lại thông tin **cũ** (thông tin mới "lùi lại" gây rối thông tin cũ). Một cách khác để kiểm tra nhanh: xác định xem *cái nào bị hại* – nếu kiến thức **MỚI** đang bị hại, đó là chủ động (proactive); nếu kiến thức **CŨ** đang bị hại, đó là bị động/ngược (retroactive).

Ví dụ mẫu · Identifying the type of interference

A woman who lived in her childhood home until age 18 and then moved into a new apartment at age 30 still occasionally, without thinking, starts driving toward her childhood home instead of her current apartment. Which type of interference does this illustrate, and why?

This is **proactive interference**: the older, deeply ingrained memory of the route to her childhood home (learned first) is disrupting recall/execution of the newer route to her current apartment (learned more recently). The old learning is reaching "forward" to interfere with the new – the defining pattern of proactive interference.

GIẢI THÍCH TIẾNG VIỆT

VN

Có bốn nguyên nhân chính gây quên: **lỗi mã hoá** (encoding failure – thông tin chưa từng được mã hoá vào trí nhớ); **suy giảm lưu trữ** (storage decay – dấu vết trí nhớ mờ dần theo thời gian nếu không được củng cố); **nhieu** (interference – một trí nhớ cản trở trí nhớ khác, gồm **nhieu thuận chiều** khi kiến thức cũ cản trở kiến thức mới, và **nhieu ngược chiều** khi kiến thức mới cản trở kiến thức cũ); và **quên có động cơ** (motivated forgetting/repression – khái niệm gây tranh cãi của Freud, thiếu bằng chứng thực nghiệm vững chắc). **Đường cong quên Ebbinghaus** cho thấy quên diễn ra nhanh nhất ngay sau khi học, sau đó chậm dần.

2.6.2 Reconstructive memory and the misinformation effect

Memory is not a passive video recording that plays back unchanged; it is actively **reconstructed** at the moment of retrieval, drawing on stored fragments, general knowledge, expectations, and – critically – any information encountered *after* the original event.

Memory construction and distortion

Reconstructive memory: each act of recall rebuilds a memory rather than simply replaying a fixed record, making memory vulnerable to error and outside influence.

Misinformation effect (Elizabeth Loftus): exposure to misleading information after an event can distort a person's memory of that event. In Loftus's classic eyewitness-testimony research, participants who watched a filmed car accident and were later asked how fast the cars were going when they "smashed into" each other gave higher speed estimates – and were more likely to falsely report seeing broken glass that was never in the film – than participants asked the identical question with the word "hit" substituted for "smashed into." The wording of a single question, delivered after the event, altered participants' memory of the event itself.

Source amnesia (source misattribution): correctly remembering a fact or an image but incorrectly recalling the source of that memory (e.g., a witness misremembers a detail that came from a news report as having come from the crime itself).

Flashbulb memories: unusually vivid, detailed memories of the circumstances surrounding a highly emotional or surprising public event (e.g., where a person was when they heard major news). These memories are held with strong subjective confidence, but research shows they are not more *accurate* than ordinary memories and can still change or distort considerably over time.

Ví dụ mẫu · Critiquing a misinformation-effect experiment

A researcher shows two groups of participants an identical short video of a shoplifting incident. Immediately afterward, Group A is asked, "Did you see the weapon the shoplifter was carrying?" and Group B is asked, "Did you see a weapon, if any, the shoplifter was carrying?" One week later, both groups are asked to recall as much as they can about the video, including whether a weapon was present. Explain the manipulation, identify the confound in the wording, and predict the result consistent with the misinformation effect.

The manipulation is the **presupposition** embedded in the question wording: Group A's question ("the weapon") presupposes that a weapon existed, while Group B's question ("a weapon, if any") does not. If no weapon actually appeared in the video, this wording functions as a form of post-event misinformation. Consistent with Loftus's misinformation effect, Group A should be significantly more likely than Group B to falsely report having seen a weapon one week later, even though both groups watched the identical video — because the leading, presupposing phrasing of the question distorted their memory of the event during the week between viewing and recall. A methodological point worth flagging: for this to be a clean test of the misinformation effect (rather than a demand-characteristics or response-bias effect), the researcher should also measure participants' **confidence** in their recall and should use a control condition with no question about a weapon at all immediately after viewing, to separate genuine memory distortion from participants simply guessing or trying to please the experimenter.

(!) Lỗi thường gặp: Một sai lầm phổ biến là cho rằng **trí nhớ chớp sáng** (flashbulb memory) luôn chính xác vì cảm giác rất sống động và người nhớ rất tự tin. Nghiên cứu (bao gồm các nghiên cứu theo dõi trí nhớ về sự kiện 11/9) cho thấy độ **tự tin** cao không đi kèm với độ **chính xác** cao — chi tiết của trí nhớ chớp sáng vẫn có thể thay đổi, bị bóp méo, hoặc sai lệch theo thời gian giống như các trí nhớ khác, mặc dù người nhớ vẫn tin chắc rằng ký ức của mình hoàn toàn đúng.

GIẢI THÍCH TIẾNG VIỆT

VN

Trí nhớ tái tạo nghĩa là mỗi lần nhớ lại, não bộ không "phát lại" một đoạn ghi hình cố định mà thực sự **xây dựng lại** ký ức từ các mảnh ghép, từ đó dễ bị sai lệch. **Hiệu ứng thông tin sai lệch** (misinformation effect) do Elizabeth Loftus phát hiện qua các nghiên cứu về lời khai nhân chứng cho thấy thông tin sai lệch nhận được **sau** sự kiện (ví dụ cách đặt câu hỏi) có thể làm thay đổi chính ký ức về sự kiện đó — ví dụ nổi tiếng: dùng từ "đâm sâu vào" thay vì "va chạm" khiến người tham gia ước tính tốc độ cao hơn và dễ "nhớ nhầm" thấy kính vỡ không hề có trong video. **Lỗi nguồn gốc trí nhớ** (source amnesia) là nhớ đúng nội dung nhưng nhớ sai nguồn của nó. **Trí nhớ chớp sáng** sống động và tự tin nhưng **KHÔNG** chính xác hơn trí nhớ thông thường.

2.6.3 Factors affecting eyewitness testimony

Building on the reconstructive nature of memory, applied research on real-world eyewitness testimony has identified several additional, well-replicated factors that systematically reduce accuracy – findings with direct consequences for the legal system.

Eyewitness testimony factors

Weapon focus effect: when a weapon is present during a crime, witnesses' attention narrows toward the weapon itself, at the cost of encoding other details (such as the perpetrator's face), reducing later identification accuracy.

Cross-race effect (own-race bias): witnesses are, on average, less accurate at recognizing and identifying faces of a race different from their own than faces of their own race, likely reflecting greater everyday perceptual experience individuating faces within one's own race.

Confidence–accuracy relationship: a witness's subjective confidence in an identification is, at best, only weakly related to its actual accuracy; highly confident witnesses can still be entirely wrong, particularly when confidence has been inflated after the fact by feedback (e.g., an officer confirming "good, that's who we suspected") rather than reflecting confidence at the original moment of identification.

Lineup procedures: a **simultaneous lineup** (all suspects shown at once) encourages witnesses to compare individuals relative to one another and pick whoever looks *most like* their memory of the culprit, even if the true culprit is absent; a **sequential lineup** (individuals shown one at a time) instead prompts an absolute judgment of each person against memory, and research indicates it produces fewer false identifications, though sometimes at a modest cost to correct identifications.

Ví dụ mẫu · Evaluating a lineup procedure

A police department switches from presenting eyewitnesses with a simultaneous six-person lineup to a sequential lineup (one person at a time) for all future cases, citing psychological research. Explain the reasoning behind this policy change, and identify one trade-off the department should be aware of.

The policy change reflects evidence that **simultaneous** lineups encourage witnesses to use relative judgment – comparing lineup members to each other and selecting whichever one looks most similar to their memory, a strategy that can produce a confident but mistaken identification even when the true culprit is not present in the lineup at all. **Sequential** lineups instead prompt witnesses to judge each individual in isolation against their memory of the culprit (absolute judgment), which research shows reduces false identifications of innocent people. The trade-off the department should weigh is that sequential procedures, in reducing false identifications, can also somewhat reduce the rate of correct identifications of the true culprit when the culprit is in the lineup – a shift that trades some sensitivity for a meaningful reduction in wrongful identifications.

GIẢI THÍCH TIẾNG VIỆT

VN

Nghiên cứu ứng dụng về lời khai nhân chứng chỉ ra thêm nhiều yếu tố làm giảm độ chính xác: **hiệu ứng tập trung vào vũ khí** (weapon focus – khi có vũ khí xuất hiện, nhân chứng dồn chú ý vào vũ khí, bỏ sót các chi tiết khác như khuôn mặt kẻ gây án); **hiệu ứng khác chủng tộc** (cross-race effect – nhận diện khuôn mặt người khác chủng tộc với mình kém chính xác hơn); **mối liên hệ giữa sự tự tin và độ chính xác** (rất yếu – nhân chứng tự tin cao vẫn có thể nhận diện sai); và sự khác biệt giữa **nhận diện đồng thời** (simultaneous lineup – dễ dẫn đến so sánh tương đối giữa các người trong hàng, tăng nguy cơ nhận diện sai) và **nhận diện tuần tự**

(sequential lineup — đánh giá từng người một cách độc lập, giảm nhận diện sai).

2.7 The Biology of Memory

2.7.1 The hippocampus, the amygdala, and long-term potentiation

Forming and storing long-term memories depends on identifiable brain structures and on a specific cellular mechanism of synaptic change.

Brain structures in memory

The **hippocampus**, located in the medial temporal lobe, plays a central role in forming **new explicit (declarative) memories** and in gradually transferring them to the cortex for more permanent storage; it is not the permanent storage site itself, but functions more like a temporary "processing hub."

The **amygdala**, adjacent to the hippocampus, is central to **emotional memory**, especially fear-related learning, and it enhances the consolidation of memories for emotionally arousing events — one reason emotionally charged experiences are often remembered more vividly (though not necessarily more accurately) than neutral ones.

The cerebellum and basal ganglia, in contrast, are heavily involved in forming **implicit/procedural** memories (skills and conditioned responses), a system that operates largely independently of the hippocampus.

Long-term potentiation (LTP) is the neural basis of learning and memory at the synaptic level: when two connected neurons are repeatedly and simultaneously active, the synaptic connection between them is strengthened, so that subsequent signals cross that synapse more effectively. This is often summarized by the Hebbian principle, "neurons that fire together, wire together." LTP provides a physiological explanation for how experience can produce a durable trace in the nervous system, and drugs or genetic manipulations that block LTP reliably impair learning in animal studies.

GIẢI THÍCH TIẾNG VIỆT

VN

Hồi hải mã (hippocampus), nằm ở thùy thái dương giữa, đóng vai trò trung tâm trong việc **hình thành trí nhớ tường minh mới**, sau đó dần chuyển thông tin sang vỏ não để lưu trữ lâu dài — bản thân hồi hải mã không phải là "kho lưu trữ vĩnh viễn." **Hạch hạnh nhân** (amygdala) đóng vai trò then chốt trong **trí nhớ cảm xúc**, đặc biệt là nỗi sợ, và tăng cường việc củng cố trí nhớ cho các sự kiện gây xúc động mạnh. **Sự tăng cường dài hạn** (long-term potentiation, LTP) là cơ chế thần kinh của việc học và ghi nhớ ở cấp độ synapse: hai neuron cùng hoạt động lặp đi lặp lại sẽ có kết nối synapse mạnh lên — "neuron nào cùng phát xung thì cùng kết nối chặt hơn."

2.7.2 The case of patient H.M.

Ví dụ mẫu · H.M. and the dissociation of memory systems

In 1953, Henry Molaison (widely known during his lifetime by his initials, H.M.) underwent surgical removal of large portions of his medial temporal lobes, including most of the hippocampus on both sides, as a treatment for severe, otherwise untreatable epilepsy. The surgery successfully reduced his seizures, but left him with severe **anterograde amnesia**: he was almost entirely unable to form new explicit long-term memories, and could not remember people he met or events that occurred after the surgery for more than a few minutes. He also showed

some **retrograde amnesia** — loss of memories from the period shortly before the surgery — while much older memories from his childhood and early adulthood remained largely intact. Neuropsychologist Brenda Milner studied H.M. for decades and made a striking discovery: when H.M. practiced a mirror-tracing task (tracing a shape while viewing his hand only in a mirror) across repeated daily sessions, his performance steadily improved from session to session — even though he had no conscious memory of ever having performed the task before, and greeted the apparatus as entirely novel each time. Explain what H.M.'s case reveals about the organization of long-term memory.

H.M.'s pattern of impairment and preserved ability provides some of the clearest evidence that explicit and implicit memory are **separate systems supported by different brain structures**. His inability to form new **explicit/declarative** memories (episodic and semantic) after the loss of his hippocampus shows that the hippocampus is necessary for consolidating this type of memory. Yet his steady, session-to-session improvement on the mirror-tracing task shows that he was still able to form new **implicit/procedural** memories — motor learning — through brain systems (such as the cerebellum and basal ganglia) that do not depend on an intact hippocampus. The dissociation between "knowing that" (explicit, severely impaired) and "knowing how" (implicit, preserved) in a single patient is why H.M.'s case remains one of the most cited findings in the biological study of memory.

GIẢI THÍCH TIẾNG VIỆT

VN

Cả bệnh nổi tiếng của **Henry Molaison (H.M.)**, được nhà thần kinh học Brenda Milner nghiên cứu trong nhiều thập kỷ, là bằng chứng kinh điển cho việc trí nhớ tường minh và không tường minh là hai hệ thống tách biệt. Sau khi cắt bỏ phần lớn hồi hải mã hai bên để điều trị động kinh (1953), H.M. bị **quên thuận chiều** (anterograde amnesia) nặng — không thể hình thành trí nhớ tường minh mới — nhưng vẫn giữ được khả năng **học kỹ năng vận động mới** (trí nhớ thủ tục, ví dụ bài tập vẽ theo gương) dù không hề nhớ rằng mình đã từng luyện tập. Ông cũng có **quên ngược chiều** (retrograde amnesia) đối với giai đoạn ngay trước phẫu thuật, nhưng ký ức thời thơ ấu vẫn còn nguyên vẹn.

(!) Lỗi thường gặp: Đừng nhầm **quên thuận chiều** (anterograde amnesia — mất khả năng hình thành trí nhớ MỚI sau chấn thương/phẫu thuật) với **quên ngược chiều** (retrograde amnesia — mất trí nhớ về các sự kiện xảy ra TRƯỚC chấn thương/phẫu thuật). Trường hợp H.M. chủ yếu là quên thuận chiều (không hình thành được trí nhớ tường minh mới), kèm theo quên ngược chiều ở mức độ hạn chế hơn (chỉ mất trí nhớ về giai đoạn gần ngay trước phẫu thuật, còn trí nhớ xa hơn vẫn nguyên vẹn).

2.7.3 Alzheimer's disease

Alzheimer's disease is a progressive neurodegenerative disorder and the most common cause of dementia in older adults. It is associated with the buildup of abnormal protein structures (amyloid plaques and neurofibrillary tangles) in the brain, progressive death of neurons — including neurons that produce the neurotransmitter acetylcholine, which is important for memory — and significant shrinkage (atrophy) of brain tissue, especially in and around the hippocampus. Clinically, Alzheimer's typically begins with difficulty forming new explicit memories (resembling a progressive, permanent version of anterograde amnesia) and gradually progresses to broader deficits in language, reasoning, and, ultimately, basic self-care.

GIẢI THÍCH TIẾNG VIỆT

VN

Bệnh Alzheimer là bệnh thoái hoá thần kinh tiến triển, nguyên nhân phổ biến nhất gây sa sút trí tuệ ở người lớn tuổi, liên quan đến sự tích tụ mảng bám amyloid và đám rối sợi thần kinh, cùng với sự chết dần của neuron (bao gồm neuron sản xuất acetylcholine) và teo mô não, đặc biệt quanh vùng hồi hải mã. Về lâm sàng, bệnh thường bắt đầu bằng khó khăn trong việc hình thành trí nhớ tường minh mới – giống một dạng quên thuận chiều tiến triển – trước khi lan rộng sang ngôn ngữ, tư duy, và khả năng tự chăm sóc bản thân.

2.8 Thinking, Problem Solving, and Decision Making

2.8.1 Concepts and prototypes

A **concept** is a mental grouping of similar objects, events, or ideas that lets us organize the world efficiently and reason without treating every new instance as entirely novel. Eleanor Rosch's **prototype theory** proposes that people represent many everyday concepts not as a strict checklist of defining features, but around a **prototype** – the most typical, representative example of the category. New objects are categorized by how closely they resemble this prototype, and objects that closely match the prototype are categorized faster and more confidently than atypical members of the same category.

Ví dụ mẫu · Prototypes and categorization speed

Participants are shown pictures of a robin and a penguin and asked, as quickly as possible, to say "yes" or "no" to the question "Is this a bird?" Predict and explain the likely difference in response time.

Participants should categorize the **robin** faster than the **penguin**. A robin closely matches the North American **prototype** for "bird" (small, flies, sings, typical body shape), so it can be matched to the category almost automatically. A penguin, while biologically a bird, differs sharply from the prototype (does not fly, swims, has an atypical body shape), requiring more effortful comparison against the category's defining features rather than a quick prototype match – producing a longer response time even though both answers are "yes."

GIẢI THÍCH TIẾNG VIỆT

VN

Khái niệm (concept) là cách não bộ nhóm các sự vật, sự kiện có đặc điểm tương đồng lại với nhau để xử lý thông tin hiệu quả hơn. Theo **thuyết nguyên mẫu** (prototype theory) của Eleanor Rosch, con người phân loại một khái niệm dựa trên mức độ giống với **nguyên mẫu** – ví dụ điển hình, tiêu biểu nhất của phạm trù đó – chứ không dựa trên một danh sách đặc điểm cố định. Vì vậy chim cổ đỏ (giống nguyên mẫu "chim" hơn) được nhận diện là "chim" nhanh hơn chim cánh cụt (khác xa nguyên mẫu), dù cả hai đều là chim thật sự.

2.8.2 Problem-solving strategies: algorithms and heuristics

Algorithms vs. heuristics

An **algorithm** is a step-by-step procedure that, if followed correctly, is **guaranteed** to produce a correct solution – but algorithms can be slow and effortful, especially as the number of possibilities grows (e.g., systematically trying every possible letter combination to solve an anagram).

A **heuristic** is a mental shortcut or "rule of thumb" that is faster and less effortful than an algorithm, but does not guarantee a correct answer and can lead to systematic errors.

Availability heuristic: judging the likelihood or frequency of an event by how easily relevant examples come to mind. Vivid, recent, or heavily publicized events (e.g., plane crashes, shark attacks) come to mind easily and are therefore often *overestimated* in likelihood relative to less dramatic but statistically more common risks (e.g., car accidents).

Representativeness heuristic: judging the probability that something belongs to a category by how much it resembles a typical member of that category, often while ignoring relevant statistical information such as **base rates** (how common something actually is in the population).

Anchoring effect: relying too heavily on the first piece of information encountered (the "anchor") when making subsequent judgments or estimates, even when that anchor is arbitrary or irrelevant.

Framing effect: the way a choice or piece of information is worded/presented (e.g., in terms of gains vs. losses) can significantly influence decisions, even when the underlying facts are identical.

Heuristic/effect	Definition	Example
Availability	Judge frequency by ease of recall	Overestimating shark attack risk after heavy news coverage
Representativeness	Judge category membership by resemblance to a prototype, ignoring base rates	Assuming a quiet, detail-oriented person is more likely a librarian than a farmer, ignoring that farmers vastly outnumber librarians
Anchoring	Over-rely on first number/reference point	Initial asking price in a negotiation shapes the final agreed price
Framing	Wording of options shapes choice	"90% survival rate" sounds more reassuring than the equivalent "10% mortality rate"

Ví dụ mẫu · Representativeness heuristic and base-rate neglect

Participants are told: "In a group of 100 people, 5 are engineers and 95 are lawyers. Jack is described as enjoying carpentry, sailing, and mathematical puzzles, and shows no interest in social or political issues." Asked whether Jack is more likely to be an engineer or a lawyer, most participants say "engineer," even though the base rate strongly favors "lawyer." Explain this result and identify the normatively correct reasoning.

This result reflects the **representativeness heuristic**: Jack's description matches common stereotypes of an engineer far more closely than of a lawyer, so participants judge him to belong to that category based on **resemblance** to a prototype rather than on the actual **base rate**. Normatively, because only 5 out of 100 people in the sample are engineers, even a description that matches the engineer stereotype reasonably well should not outweigh the fact that lawyers are 19 times more numerous in this sample; a fully rational (base-rate-respecting) judgment would still favor "lawyer" as more probable, or at least weight the base rate heavily alongside the personality description. This exact type of problem (closely related to Kahneman and Tversky's original demonstrations of the representativeness heuristic) illustrates **base-rate neglect** – the tendency to underweight prior probability information in favor of vivid, specific, stereotype-matching descriptions.

Ví dụ mẫu · Anchoring and framing in a single scenario

Two real-estate agents show the same house to different buyers. Agent A first mentions the seller's original asking price of \$450,000 before showing the house; Agent B first describes the house's features and location without mentioning any price. Separately, a hospital explains a surgery's outcomes to two groups of patients: Group 1 is told "80% of patients are still alive after five years," and Group 2 is told the same statistic as "20% of patients have died within five years." Identify the heuristic/effect illustrated in each scenario and predict the likely outcome. The real-estate scenario illustrates the **anchoring effect**: buyers exposed to the \$450,000 anchor will tend to make offers closer to that number (whether above or below) than buyers who received no anchor at all, because the initial figure serves as a reference point that subsequent judgments are adjusted from, often insufficiently. The hospital scenario illustrates the **framing effect**: although "80% survival" and "20% mortality" describe the mathematically identical outcome, patients told the positively framed "80% survival" statistic typically report more confidence in choosing the surgery than patients told the negatively framed "20% mortality" statistic, because the same facts feel different depending on whether they emphasize gains (survival) or losses (death).

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Thuật toán (algorithm) là quy trình từng bước, chậm nhưng đảm bảo ra đáp án đúng. **Suy luận heuristic** là "lối tắt" tư duy nhanh nhưng có thể sai. Bốn heuristic/thiên kiến quan trọng nhất: **heuristic tính khả dụng** (availability – ước lượng tần suất dựa trên mức độ dễ nhớ lại, ví dụ đánh giá quá cao nguy cơ tai nạn máy bay vì tin tức nhắc nhiều); **heuristic tính đại diện** (representativeness – đánh giá khả năng thuộc một nhóm dựa trên mức độ giống nguyên mẫu, thường bỏ qua tỉ lệ cơ sở/base rate); **hiệu ứng neo** (anchoring – bị "neo" vào con số đầu tiên nghe được); và **hiệu ứng khung** (framing – cách diễn đạt thông tin – theo hướng được/mất – ảnh hưởng đến quyết định dù bản chất sự kiện không đổi).

Ví dụ mẫu · Choosing an algorithm over a heuristic

A student misplaces their phone somewhere in a small studio apartment before an important call. Compare an algorithmic approach and a heuristic approach to finding it, and explain the trade-off between them.

An **algorithmic** approach would be to systematically search every location in the apartment in a fixed order (every drawer, every pocket, under every piece of furniture, one by one, without skipping any location) until the phone is found – this approach is slow and effortful but **guarantees** the phone will eventually be located, since no possible location is left unchecked. A **heuristic** approach would instead be to first check the few places the phone is *usually* found (the couch cushions, the kitchen counter, a coat pocket) based on past experience – this is much faster on average, since most searches are resolved quickly, but it is not guaranteed to work and can fail entirely if this particular time the phone ended up somewhere atypical (e.g., inside the refrigerator). The general trade-off illustrated here – heuristics are faster but fallible, algorithms are slower but reliable – is the central distinction between the two problem-solving strategies.

2.8.3 Obstacles to effective problem solving

Common obstacles and biases

Mental set: the tendency to keep using a problem-solving strategy that has worked in the past, even when it is no longer the most efficient (or is entirely ineffective) for a new problem.

Functional fixedness: the tendency to think of an object only in terms of its typical, familiar use, which blocks recognition of novel, unconventional uses. Karl Duncker's classic **candle problem** illustrates this: given a candle, a box of tacks, and a book of matches, participants must attach the candle to a wall so it can burn without dripping wax on the floor below. Many participants struggle because they perceive the tack box only as a *container* for tacks, failing to see it could instead be emptied, tacked to the wall, and used as a *platform* for the candle.

Confirmation bias: the tendency to search for, favor, and more easily recall information that confirms one's pre-existing beliefs, while ignoring or discounting contradictory evidence.

Belief perseverance: clinging to an original belief even after the evidence on which it was based has been thoroughly discredited.

Overconfidence: the tendency to be more confident in the accuracy of one's own judgments, knowledge, and predictions than is objectively warranted.

Hindsight bias: after learning the outcome of an event, the tendency to believe — often unconsciously — that the outcome was obvious or predictable all along ("I knew it all along" effect), which distorts memory of one's earlier, actual uncertainty.

Gambler's fallacy: the mistaken belief that past outcomes of an independent, random process influence future outcomes (e.g., believing a coin is "due" for tails after a run of heads, when each flip remains an independent 50/50 event).

Obstacle/bias	Core idea
Mental set	Sticking with a previously successful strategy even when it no longer fits
Functional fixedness	Seeing an object only in its usual role, missing novel uses
Confirmation bias	Seeking/favoring evidence that supports existing beliefs
Belief perseverance	Holding onto a belief even after its evidential basis is disproven
Overconfidence	Overestimating the accuracy of one's own judgments
Hindsight bias	"I knew it all along," after already learning the outcome
Gambler's fallacy	Believing independent random events are influenced by past outcomes

Ví dụ mẫu · Functional fixedness in the candle problem

Explain, in terms of functional fixedness, why participants given the tacks already dumped out beside an empty box solve Duncker's candle problem faster than participants given the tacks still inside the closed box.

When the tacks are presented *inside* the box, participants perceive the box only in its conventional role as a **container** — a case of functional fixedness that blocks the "aha" realization that the box itself, once emptied, could serve as a **platform** tacked to the wall to hold the candle. When the tacks are already poured out next to an empty box, the box is not perceptually "occupied" by its usual function, making it easier for participants to perceive its alternative use as a candle platform and solve the problem more quickly. This manipulation is one of the cleanest experimental demonstrations that functional fixedness is triggered by an object's *presented* role, not simply by its identity.

(!) **Lỗi thường gặp:** Học sinh dễ nhầm **ngộ nhận con bạc** (gambler's fallacy) với "quy luật số lớn" thực sự. Gambler's fallacy là niềm tin SAI rằng một sự kiện ngẫu nhiên, độc lập "phải" xảy ra để "cân bằng" lại chuỗi kết quả trước đó (ví dụ: tin rằng sau 5 lần tung đồng xu ra mặt ngửa liên tiếp thì lần tới "chắc chắn phải" ra mặt sấp). Trên thực tế, mỗi lần tung đồng xu là một sự kiện **độc lập** — xác suất ra sấp hay ngửa ở lần tung tiếp theo luôn là 50/50, không phụ thuộc vào các lần tung trước đó, dù chuỗi trước đó dài đến đâu.

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Các trở ngại phổ biến trong tư duy giải quyết vấn đề: **tâm thế cố định** (mental set — cứ dùng cách cũ dù không còn phù hợp); **cố định chức năng** (functional fixedness — chỉ nhìn thấy công dụng quen thuộc của một vật, ví dụ bài toán cây nến của Duncker: khó nhận ra hộp đinh ghim cũng có thể dùng làm bệ đỡ); **thiên kiến xác nhận** (confirmation bias — chỉ tìm và tin thông tin ủng hộ niềm tin sẵn có); **sự kiên trì niềm tin** (belief perseverance — vẫn giữ niềm tin dù bằng chứng đã bị bác bỏ); **sự tự tin thái quá** (overconfidence); **thiên kiến nhận thức muộn** (hindsight bias — "tôi đã biết trước mà" sau khi biết kết quả); và **ngộ nhận con bạc** (gambler's fallacy — tin sai rằng các sự kiện ngẫu nhiên độc lập ảnh hưởng lẫn nhau).

Ví dụ mẫu · Confirmation bias and belief perseverance together

A manager forms an early impression that a new employee is "not a strong performer" after a single rough first week. In the following months, the manager notices and remembers every minor mistake the employee makes, but barely registers the employee's many successful projects; even after a formal performance review documents strong overall results, the manager remains convinced the employee is mediocre. Identify the two biases at work and explain how they reinforce each other.

The manager's selective noticing and remembering of mistakes, while overlooking successes, illustrates **confirmation bias**: information consistent with the initial impression ("not a strong performer") is preferentially attended to and recalled, while disconfirming evidence (successful projects) is discounted or forgotten. The manager's continued conviction *even after* a formal review documents strong performance — objective evidence that should update the belief — illustrates **belief perseverance**: the original belief persists despite its evidential basis being undermined. The two biases reinforce each other in a self-sustaining cycle: confirmation bias supplies a steady stream of seemingly confirming "evidence" over time, which then makes the resulting belief feel well-supported and therefore even more resistant to revision (belief perseverance) when strong contradictory evidence finally does appear.

2.8.4 Insight and creativity

Insight is the sudden, often unexpected realization of a problem's solution — the "aha moment" — that appears to emerge all at once rather than through incremental, step-by-step progress. Wolfgang Köhler's early studies of chimpanzees provided some of the first evidence of insight in nonhuman animals: a chimpanzee named Sultan, unable to reach a banana placed outside his cage with either of two short sticks alone, suddenly combined the two sticks into one long stick and retrieved the banana — a solution that appeared abruptly after a period of apparent inactivity, rather than through gradual trial and error.

Creativity is the ability to generate ideas that are both novel and valuable. **Convergent thinking** narrows multiple possibilities down to a single correct or optimal solution (the kind of thinking tested by most traditional exam questions); **divergent thinking** generates many possible solutions or ideas from a single starting point, and is more closely associated with creativity.

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Sự thấu hiểu (insight) là khoảnh khắc "aha" — lời giải xuất hiện đột ngột thay vì qua từng bước dò dẫm. Thí nghiệm của Wolfgang Köhler trên tinh tinh (ví dụ chú tinh tinh Sultan ghép hai cây gậy ngắn thành một cây gậy dài để lấy quả chuối) là bằng chứng sớm cho thấy động vật cũng có khả năng thấu hiểu. **Tư duy hội tụ** (convergent thinking) thu hẹp nhiều khả năng về một đáp án đúng duy nhất; **tư duy phân kỳ** (divergent thinking) tạo ra nhiều ý tưởng/giải pháp khác nhau từ một điểm xuất phát — đây là loại tư duy gắn liền với **sự sáng tạo**.

2.9 Intelligence: Theories and Measurement

2.9.1 Theories of intelligence

Psychologists disagree about whether intelligence is best understood as one general ability or as a collection of distinct abilities.

Major theories of intelligence

Spearman's general intelligence (g factor): Charles Spearman observed that scores on different mental ability tests tend to correlate positively with one another, and proposed a single underlying **general intelligence factor (g)** that contributes to performance across all cognitive tasks, alongside more task-specific abilities.

Thurstone's primary mental abilities: Louis Thurstone argued against a single g factor, instead identifying seven relatively distinct **primary mental abilities** (including verbal comprehension, word fluency, numerical ability, spatial visualization, memory, perceptual speed, and reasoning) that he believed better captured the structure of intelligence than one general score.

Gardner's theory of multiple intelligences: Howard Gardner proposed that intelligence is not one ability but several relatively **independent** intelligences, each rooted in different brain systems and each valued differently across cultures, including **linguistic**, **logical-mathematical**, **spatial**, **musical**, **bodily-kinesthetic**, **interpersonal**, **intrapersonal**, and **naturalistic** intelligence.

Sternberg's triarchic theory: Robert Sternberg proposed three distinct kinds of intelligence: **analytical intelligence** (academic problem-solving and abstract reasoning, the kind emphasized by traditional IQ tests), **creative intelligence** (generating novel and effective ideas or solutions in new situations), and **practical intelligence** ("street smarts" — applying knowledge effectively to everyday, real-world problems).

Theorist	Core claim
Spearman	Single general factor (<i>g</i>) underlies performance across cognitive tasks
Thurstone	Seven distinct primary mental abilities; no single overarching <i>g</i>
Gardner	Eight (or more) independent multiple intelligences (linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, naturalistic)
Sternberg	Triarchic theory: analytical, creative, and practical intelligence

Ví dụ mẫu · Classifying real-world talent under two theories

A skilled street vendor with no formal business education consistently prices goods, negotiates with suppliers, and reads customer behavior in ways that keep her small stall highly profitable, even though she scores only average on a standard academic math test. Analyze this case

using both Gardner's and Sternberg's theories.

Under **Sternberg's triarchic theory**, the vendor demonstrates strong **practical intelligence** — the ability to apply knowledge effectively to real-world, everyday problems (pricing, negotiation, reading customers) — which can be high even when **analytical intelligence** (the kind measured by a standard academic math test) is only average; Sternberg's theory explicitly treats these as separable abilities. Under **Gardner's theory**, her success could reflect strong **interpersonal intelligence** (reading and responding effectively to other people's moods and motivations, useful in negotiating with suppliers and customers) combined with practical **logical-mathematical** skill applied outside a formal academic context. Both theories converge on the same broader point: a narrow, single-score measure of intelligence (such as one academic math test) can miss real, consequential cognitive abilities that a person clearly possesses.

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Bốn thuyết chính về trí thông minh: **Spearman** cho rằng có một **yếu tố g (trí thông minh chung)** nằm bên dưới mọi khả năng nhận thức; **Thurstone** phản bác, cho rằng có **bảy khả năng tâm trí cơ bản** riêng biệt; **Gardner** đề xuất **thuyết đa trí thông minh** với nhiều loại trí thông minh độc lập (ngôn ngữ, logic-toán học, không gian, âm nhạc, vận động cơ thể, tương tác xã hội, nội tâm, và tự nhiên); và **Sternberg** đề xuất **thuyết tam nguyên** gồm trí thông minh **phân tích** (giải quyết vấn đề học thuật), **sáng tạo** (tạo ý tưởng mới trong tình huống mới), và **thực tiễn** ("khôn ngoan đường phố" — áp dụng hiệu quả vào đời sống thực tế).

2.9.2 The history and mechanics of intelligence testing

Alfred Binet, working with Théodore Simon in France in the early twentieth century, developed the first practical intelligence test for a specific, applied purpose: identifying French schoolchildren who needed extra academic assistance, so that appropriate help could be provided early. Binet introduced the concept of **mental age** — the level of intellectual performance typically associated with a certain chronological age (e.g., a child performing at the level of a typical 8-year-old has a mental age of 8, regardless of their actual age).

Lewis Terman, at Stanford University, revised and adapted Binet's test for American use, producing the **Stanford-Binet Intelligence Scale** and popularizing the **intelligence quotient (IQ)**.

Original (ratio) IQ formula:

$$IQ = \frac{\text{mental age (MA)}}{\text{chronological age (CA)}} \times 100.$$

A child whose mental age equals their chronological age scores exactly 100 (average). This ratio formula works poorly for adults (mental age growth levels off while chronological age keeps increasing), so modern tests instead use **deviation IQ**: a score based on how far a person's performance falls above or below the **average score of others of the same age**, expressed on a scale with a mean of 100 and a fixed standard deviation (typically 15).

Ví dụ mẫu · Computing ratio IQ

An 8-year-old child completes an intelligence test and performs at a level typical of a 10-year-old (mental age 10). Compute this child's ratio IQ.

$$IQ = \frac{MA}{CA} \times 100 = \frac{10}{8} \times 100 = 125.$$

A ratio IQ of 125 indicates performance well above the average for the child's actual age group. (Note that modern tests, including all current Wechsler and Stanford-Binet editions, report **deviation IQ** rather than this ratio formula – the ratio formula is presented here primarily for its historical and conceptual value.)

David Wechsler developed a family of tests – most notably the **Wechsler Adult Intelligence Scale (WAIS)** for adults and the **Wechsler Intelligence Scale for Children (WISC)** – that, unlike the single overall score of the early Stanford-Binet, report separate subscores across verbal and non-verbal/performance domains alongside an overall composite score, better reflecting the idea that intelligence has multiple components.

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Alfred Binet phát triển bài kiểm tra trí thông minh đầu tiên tại Pháp với mục đích ban đầu là **xác định học sinh cần được hỗ trợ học tập thêm**, và đưa ra khái niệm **tuổi trí tuệ** (mental age). **Lewis Terman** tại Đại học Stanford điều chỉnh bài test của Binet thành **thang đo Stanford-Binet** và phổ biến khái niệm **chỉ số IQ**: công thức gốc là $IQ = (\text{tuổi trí tuệ} / \text{tuổi thực}) \times 100$. Các bài test hiện đại dùng **IQ độ lệch chuẩn** (deviation IQ) – so sánh điểm số với người cùng độ tuổi, trung bình 100, độ lệch chuẩn 15 – thay vì công thức tỉ lệ cũ (vốn không phù hợp với người trưởng thành). **David Wechsler** phát triển các thang đo **WAIS** (người lớn) và **WISC** (trẻ em), cho điểm số riêng cho từng lĩnh vực (ngôn ngữ, phi ngôn ngữ) thay vì một điểm số duy nhất.

2.9.3 Standardization, reliability, and validity

A useful psychological test must satisfy three technical requirements.

Standardization, reliability, validity

Standardization: establishing uniform procedures for administering and scoring a test, and defining meaningful norms by pretesting the test on a large, representative sample so that an individual's score can be meaningfully compared to that norm group.

Reliability: the consistency of a test's results. A reliable test yields similar scores when the same person is tested again (**test-retest reliability**) or when different halves of the same test are compared (**split-half reliability**).

Validity: the extent to which a test actually measures what it claims to measure. **Content validity** asks whether a test adequately samples the full range of the behavior/domain it claims to measure; **predictive validity** asks whether test scores successfully forecast a relevant future outcome/criterion (e.g., whether an intelligence test score predicts later academic performance); **construct validity** asks whether a test genuinely measures the underlying theoretical concept (construct) it claims to measure.

(!) Lỗi thường gặp: Học sinh thường lẫn lộn **độ tin cậy** (reliability) và **độ hiệu lực** (validity). Một bài test có thể **đáng tin cậy** (cho kết quả nhất quán mỗi lần làm) nhưng **KHÔNG có hiệu lực** (không đo đúng thứ nó tuyên bố đo) – ví dụ một cái cân bị lệch luôn báo thiếu 2kg mỗi lần cân: kết quả rất nhất quán (đáng tin cậy) nhưng sai lệch một cách hệ thống (không có hiệu lực để đo cân nặng thật). Ngược lại, một bài test **có hiệu lực** gần như luôn phải **đáng tin cậy** – nếu kết quả đo lộn xộn, ngẫu nhiên mỗi lần thì không thể nào đo đúng được điều nó tuyên bố đo. Nói cách khác: độ tin cậy là điều kiện **cần nhưng chưa đủ** để có độ hiệu lực.

Ví dụ mẫu · Evaluating a test's reliability and validity

A new "leadership potential" test is given to 200 job applicants. When the same applicants retake the test six months later, their scores correlate very highly with their first attempt ($r = 0.91$). However, when researchers later track which applicants were hired and rated as effective leaders by their supervisors after one year, test scores show almost no relationship to actual leadership performance ($r = 0.04$). Evaluate this test's reliability and validity, and explain what this pattern suggests about how the test should (or should not) be used.

The high test-retest correlation ($r = 0.91$) indicates the test has **strong reliability**: it produces highly consistent scores for the same person across two administrations. However, the near-zero correlation with actual, later-rated leadership performance indicates **poor predictive validity**: the test does not successfully forecast the real-world outcome (effective leadership) it claims to be relevant to. This pattern — high reliability paired with low validity — shows that consistency alone does not guarantee that a test measures what it claims to measure; the test may be reliably measuring *something* (perhaps test-taking style or an unrelated personality trait), just not "leadership potential" as intended. Using this test to make hiring decisions about leadership potential would therefore be unjustified, despite its apparent consistency.

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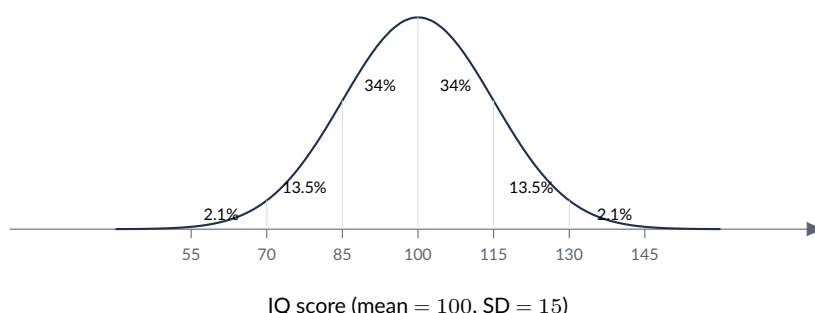
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Chuẩn hoá (standardization) là việc thiết lập quy trình làm bài và chấm điểm thống nhất, cùng với việc xây dựng chuẩn so sánh (norms) từ một mẫu đại diện lớn. **Độ tin cậy** (reliability) là tính nhất quán của kết quả test (qua thời gian — test-retest, hoặc giữa hai nửa bài test — split-half). **Độ hiệu lực** (validity) là mức độ bài test đo đúng thứ nó tuyên bố đo, gồm **hiệu lực nội dung** (bao phủ đầy đủ phạm vi cần đo), **hiệu lực dự báo** (điểm số dự đoán được kết quả tương lai liên quan), và **hiệu lực cấu trúc** (đo đúng khái niệm lý thuyết cốt lõi). Một bài test có thể đáng tin cậy nhưng không có hiệu lực — đây là điểm hay bị đề thi khai thác.

2.10 Intelligence: Distribution, Extremes, and Group Differences

2.10.1 The normal distribution of IQ scores

When large, representative samples take a modern, well-standardized IQ test, scores form an approximately **normal distribution** (a symmetric, bell-shaped curve), by design: deviation IQ scoring is constructed so that the mean is set at **100** with a **standard deviation of 15**.



The normal distribution of IQ scores. Roughly 68% of scores fall within one SD of the mean (85–115), roughly 95% fall within two SDs (70–130), consistent with the 68–95–99.7 empirical rule.

Ví dụ mẫu · Applying the 68–95–99.7 rule to IQ scores

Using a mean of 100 and a standard deviation of 15, estimate (a) the percentage of the population scoring between 85 and 115, (b) the percentage scoring above 130, and (c) the approx-

imate IQ score that marks the cutoff for the top 2.5% of the population.

(a) Scores between 85 and 115 span exactly one standard deviation below to one standard deviation above the mean (100 ± 15); by the empirical rule, this range contains approximately **68%** of the population.

(b) A score above 130 is more than two standard deviations above the mean ($100 + 2(15) = 130$). Because roughly 95% of scores fall within two SDs of the mean (leaving 5% split evenly between the two tails, 2.5% in each), approximately **2.5%** of the population scores above 130.

(c) The top 2.5% cutoff corresponds to two standard deviations above the mean: $100 + 2(15) = 130$.

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Điểm IQ trên các bài test hiện đại được thiết kế để tạo ra **phân bố chuẩn** (normal distribution, hình chuông) với **trung bình 100** và **độ lệch chuẩn 15**. Theo quy tắc 68–95–99.7: khoảng **68%** dân số có điểm nằm trong khoảng 100 ± 15 (tức 85–115), khoảng **95%** nằm trong khoảng 100 ± 30 (tức 70–130), và khoảng **99.7%** nằm trong khoảng 100 ± 45 (tức 55–145).

2.10.2 Extremes of intelligence

Intellectual disability refers to significantly below-average general intellectual functioning (conventionally, an IQ score meaningfully below 70), combined with significant limitations in **adaptive functioning** — practical, everyday skills such as communication, self-care, and social skills — with onset during the developmental period. **Giftedness** refers to significantly above-average intellectual ability (conventionally, an IQ score above roughly 130) and is often, though not always, accompanied by exceptional achievement or potential in specific academic or creative domains.

GIẢI THÍCH TIẾNG VIỆT

VN

Khuyết tật trí tuệ (intellectual disability) là mức chức năng trí tuệ chung thấp hơn đáng kể so với trung bình (thường dưới IQ 70), kèm theo hạn chế đáng kể trong **chức năng thích ứng** (kỹ năng thực tế hằng ngày như giao tiếp, tự chăm sóc, kỹ năng xã hội), khởi phát trong giai đoạn phát triển. **Năng khiếu vượt trội** (giftedness) là khả năng trí tuệ cao hơn đáng kể so với trung bình (thường trên IQ 130), thường đi kèm thành tích nổi bật ở một hoặc nhiều lĩnh vực cụ thể.

2.10.3 Nature, nurture, and controversies in intelligence

Heritability and environmental influence

Twin and adoption studies provide strong evidence that intelligence has a substantial **heritable** (genetic) component: identical (monozygotic) twins reared together show very high IQ correlations, and — critically — identical twins reared **apart** in different environments still show substantially higher IQ correlations than fraternal (dizygotic) twins or adopted siblings reared together, pointing to a real genetic contribution alongside environmental influence.

The Flynn effect: average IQ scores have risen substantially across successive generations worldwide over the twentieth century (roughly three points per decade in many countries), a shift far too rapid to be explained by genetic change and instead attributed to environmental factors such as improved nutrition, increased education, greater familiarity with abstract test-taking and standardized testing, smaller family sizes, and reduced childhood disease and lead exposure.

Stereotype threat (Claude Steele): when members of a group are aware of a negative stereotype about their group's intellectual ability (e.g., regarding gender, race, or socioeconomic

background), the resulting anxiety and self-monitoring can itself measurably impair performance on the very test the stereotype concerns — demonstrating that at least part of a group difference in test scores can be produced by the testing situation itself, not by any underlying difference in ability.

Test bias and cultural fairness: some intelligence tests have historically contained content, vocabulary, or assumptions more familiar to test-takers from particular cultural or socioeconomic backgrounds, which can depress scores for unfamiliar groups for reasons unrelated to underlying intellectual ability; this concern has motivated efforts to develop more culturally fair testing materials and to interpret group score differences cautiously.

(!) Lỗi thường gặp: Một sai lầm nghiêm trọng và phổ biến: cho rằng **độ di truyền cao trong một nhóm** (within-group heritability) đồng nghĩa với việc **sự khác biệt điểm số GIỮA các nhóm** (between-group differences, ví dụ giữa các nhóm chủng tộc hoặc kinh tế-xã hội) cũng do di truyền gây ra. Đây là một **sai lầm suy luận nghiêm trọng**: độ di truyền cao trong một quần thể (ví dụ trong nhóm người da trắng tại Mỹ) hoàn toàn không cho biết gì về nguyên nhân của sự khác biệt trung bình giữa hai quần thể khác nhau — sự khác biệt giữa các nhóm hoàn toàn có thể do các yếu tố môi trường khác nhau một cách có hệ thống giữa hai nhóm (ví dụ khác biệt về giáo dục, dinh dưỡng, và **đe dọa định kiến** — stereotype threat) gây ra, chứ không phải do gen.

Ví dụ mẫu · Interpreting Flynn effect data

A researcher compares average IQ scores on the same standardized test (renormed periodically to keep the mean at 100 for each new generation) and finds that if a person from 1950 had taken the current version of the test using the raw scoring standards from 1950, their raw score would correspond to an average IQ of approximately 100 in 1950 but only about 82 by today's norms — while a typical person tested today scores an average of 100 by today's norms. Explain what this pattern (the **Flynn effect**) shows, and why a purely genetic explanation is implausible.

This pattern shows that raw, absolute problem-solving performance on IQ-type tasks has risen substantially across generations — the average person today solves more items correctly, on an absolute basis, than the average person in 1950, even though both groups are assigned the same "IQ 100" by the norms of their own era (because IQ tests are periodically renormed to keep the mean at 100 for each new generation). A purely genetic explanation is implausible because the human gene pool does not change meaningfully within a span of a few decades — far too short a timescale for evolutionary change to account for a rise of this size. A more plausible explanation points to environmental changes across generations, such as improved nutrition, more years of formal schooling, increased exposure to visually and abstractly complex media and technology, and greater cultural familiarity with the format of standardized testing itself.

GIẢI THÍCH TIẾNG VIỆT

VN

Nghiên cứu trên cặp sinh đôi cho thấy trí thông minh có yếu tố **di truyền** đáng kể: sinh đôi cùng trứng (giống hệt gen) dù được nuôi **tách biệt** vẫn có tương quan IQ cao hơn đáng kể so với sinh đôi khác trứng nuôi cùng nhau — cho thấy vai trò thật sự của gen bên cạnh môi trường. **Hiệu ứng Flynn** là hiện tượng điểm IQ trung bình tăng đều qua các thế hệ trong thế kỷ 20 (do các yếu tố môi trường như dinh dưỡng, giáo dục, chứ không phải do thay đổi gen — vì gen không thể thay đổi nhanh như vậy). **Đe dọa định kiến** (stereotype threat) theo Claude

Steele cho thấy khi một người ý thức được định kiến tiêu cực về nhóm của mình, sự lo lắng đó có thể tự làm giảm điểm số của chính họ trên bài test đó. Cần đặc biệt cẩn trọng khi diễn giải **khác biệt điểm số giữa các nhóm** — không được nhầm lẫn độ di truyền trong một nhóm với nguyên nhân của khác biệt giữa các nhóm.

2.10.4 Adoption studies and the search for culture-fair testing

Adoption studies complement twin studies by examining children raised by adoptive parents to whom they are not genetically related. If adopted children's IQ scores correlate more strongly with their **biological** parents' IQ (whom they may never have met) than with their **adoptive** parents' IQ (who raised them), this pattern points toward a genetic contribution; if adopted siblings raised in the same household show meaningfully correlated IQ scores despite no genetic relationship, this points toward a shared-environment contribution. Large adoption studies generally find both patterns to some degree — evidence consistent with twin studies in supporting a substantial, but not exclusive, genetic contribution to individual differences in IQ, alongside a real contribution from shared environment.

Concerns about **cultural test bias** — that some test content or format may be more familiar to test-takers from particular cultural or linguistic backgrounds, depressing scores for unfamiliar groups for reasons unrelated to underlying ability — have motivated attempts to design more **culture-fair** tests. One well-known example is **Raven's Progressive Matrices**, which uses abstract visual pattern-completion items rather than language-based or culturally specific content, in an effort to measure reasoning ability with minimal dependence on a test-taker's particular linguistic or cultural background. Even culture-fair tests, however, are not entirely free of cultural influence (e.g., familiarity with the testing format itself, timed testing conventions), so questions about fairness in intelligence testing remain an active area of research and debate.

Ví dụ mẫu · Interpreting an adoption-study correlation pattern

In an adoption study, researchers find that adopted children's IQ scores correlate $r = 0.24$ with their biological mothers' IQ scores (with whom they had no contact after birth) and $r = 0.15$ with their adoptive mothers' IQ scores (who raised them from infancy). Separately, IQ scores of two genetically unrelated children raised in the same adoptive household correlate at $r = 0.20$ with each other. Interpret this overall pattern.

The higher correlation with **biological** mothers ($r = 0.24$) than with **adoptive** mothers ($r = 0.15$), despite having no postnatal contact with the biological mother, is consistent with a genuine **genetic** contribution to IQ, since genes — not a shared rearing environment — are what these children share with their biological mothers. At the same time, the meaningful positive correlation ($r = 0.20$) between two genetically unrelated children raised in the same adoptive household indicates that **shared environment** also contributes to IQ, since these children share no genetic relationship at all. Together, the pattern is consistent with the broader twin-study finding that both genetic and environmental factors meaningfully influence individual differences in IQ, with neither factor alone providing a complete explanation.

GIẢI THÍCH TIẾNG VIỆT

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Nghiên cứu trên trẻ được nhận làm con nuôi (adoption studies) bổ sung cho nghiên cứu sinh đôi: nếu điểm IQ của trẻ nuôi tương quan với cha/mẹ **ruột** (dù không tiếp xúc) cao hơn so với cha/mẹ **nuôi**, đó là bằng chứng cho vai trò của gen; nếu các trẻ không cùng huyết thống sống chung một nhà vẫn có điểm IQ tương quan với nhau, đó là bằng chứng cho vai trò của môi trường chung. Để giảm thiên kiến văn hoá trong test trí thông minh, các nhà nghiên cứu phát triển các bài test **công bằng về văn hoá** (culture-fair), ví dụ **Ma trận tiến triển Raven** (Raven's

Progressive Matrices) — dùng các mẫu hình trừu tượng thay vì nội dung phụ thuộc ngôn ngữ hoặc văn hoá cụ thể, dù vẫn không hoàn toàn loại bỏ được ảnh hưởng văn hoá.

2.11 Language and Thought

2.11.1 The structure of language

Building blocks of language

Phonemes: the smallest distinct units of **sound** in a spoken language (e.g., the sounds represented by "b," "a," and "t" in "bat") that combine to form larger units.

Morphemes: the smallest units of **meaning** in a language; some morphemes are whole words (e.g., "dog"), while others are meaningful word parts such as prefixes and suffixes (e.g., the "-ed" in "walked," which adds the meaning "past tense").

Semantics: the set of rules by which meaning is derived from morphemes, words, and sentences.

Syntax (grammar): the set of rules for how words are combined into grammatically sensible sentences (e.g., in English, adjectives typically precede the nouns they modify).

Pragmatics: the practical, social rules for using language appropriately in context — for example, knowing that "Can you pass the salt?" is a polite request rather than a literal question about physical ability.

Unit/level	Definition	Example
Phoneme	Smallest unit of sound	The three phonemes in "cat": /k/, /æ/, /t/
Morpheme	Smallest unit of meaning	"un-," "break," "-able" in "unbreakable"
Semantics	Rules for deriving meaning	Understanding that "bank" means something different in "river bank" vs. "money bank"
Syntax	Rules for combining words into sentences	"The big dog barked" is grammatical; "Dog big the barked" is not
Pragmatics	Social/contextual rules of language use	Recognizing sarcasm, indirect requests, or tone

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Ngôn ngữ có cấu trúc phân cấp: **âm vị** (phoneme — đơn vị âm thanh nhỏ nhất), **hình vị** (morpheme — đơn vị mang nghĩa nhỏ nhất, có thể là cả một từ hoặc chỉ một tiền tố/hậu tố), **ngữ nghĩa** (semantics — quy tắc suy ra nghĩa), **cú pháp/ngữ pháp** (syntax — quy tắc kết hợp từ thành câu đúng ngữ pháp), và **ngữ dụng** (pragmatics — quy tắc sử dụng ngôn ngữ phù hợp với ngữ cảnh xã hội, ví dụ hiểu được lời nói mỉa mai hay yêu cầu gián tiếp).

2.11.2 Theories of language acquisition

Behaviorist vs. nativist views

Behaviorist view (B.F. Skinner): children acquire language the same way they acquire any other behavior — through **operant conditioning**. Parents and caregivers **reinforce** sounds and word usage that approximate correct adult speech, and children learn additional language through **imitation** of the speech they hear around them.

Nativist view (Noam Chomsky): language ability is substantially **innate**. Chomsky argued that children are born with a **Language Acquisition Device (LAD)** — an inborn neural readiness that allows children to rapidly extract and apply the grammatical rules of whatever language they are exposed to, guided by a shared, universal underlying structure across all human languages (**universal grammar**). This innate mechanism, Chomsky argued, explains why children acquire complex grammar far faster and more completely than reinforcement and imitation alone could plausibly produce, including their ability to produce entirely novel, grammatically correct sentences they have never heard before.

Most contemporary psycholinguists view language acquisition as involving **both** an innate biological readiness and substantial environmental input/reinforcement, rather than either factor acting alone.

Critical period for language acquisition: research points to a window of heightened sensitivity, roughly from early childhood through puberty, during which language is most easily and fully acquired; language exposure that begins after this window closes tends to produce markedly incomplete acquisition, especially of grammar.

Ví dụ mẫu · The case of Genie and the critical period hypothesis

"Genie" is the pseudonym for a girl discovered in the early 1970s who had been kept in severe social and linguistic isolation from infancy until she was rescued at age 13, with almost no exposure to language during that time. After her rescue, despite years of intensive intervention, Genie eventually built a substantial vocabulary but never developed normal **grammar** — her sentences remained simplified and rule-violating in ways typical children's speech is not, even after prolonged, dedicated teaching. Explain how Genie's case is used as evidence for the critical period hypothesis, and identify a methodological limitation of drawing strong conclusions from this single case.

Genie's pattern — substantial vocabulary acquisition (word learning) alongside persistently impaired grammar (syntax) despite intensive later teaching — is consistent with the **critical period hypothesis**: if language, and especially the grammatical component of language, must be acquired during a biologically limited early window, then exposure beginning only after that window has closed (at age 13, well past early childhood) would be expected to produce exactly this kind of incomplete, vocabulary-heavy but grammar-poor outcome. A key **methodological limitation**, however, is that Genie's case is a single, uncontrolled case study confounded by severe abuse, neglect, malnutrition, and social isolation — any of which (not the mere timing of language exposure alone) could independently have contributed to her language difficulties, so the case cannot cleanly isolate a "critical period for language" effect from these other traumatic factors.

GIẢI THÍCH TIẾNG VIỆT

VN

Thuyết hành vi của B.F. Skinner cho rằng trẻ học ngôn ngữ qua **điều kiện hoá thao tác** (được củng cố khi phát âm/dùng từ đúng) và **bắt chước**. **Thuyết bẩm sinh** của Noam Chomsky cho rằng khả năng ngôn ngữ phần lớn là **bẩm sinh**: trẻ sinh ra đã có **cơ chế tiếp thu ngôn ngữ** (Language Acquisition Device, LAD) giúp nhanh chóng nắm bắt quy tắc ngữ pháp của bất kỳ ngôn ngữ nào được tiếp xúc, dựa trên **ngữ pháp phổ quát** (universal grammar) chung cho mọi ngôn ngữ loài người. **Giai đoạn nhạy cảm (critical period)** là khoảng thời gian (từ nhỏ đến trước tuổi dậy thì) mà ngôn ngữ được tiếp thu dễ dàng và trọn vẹn nhất — trường hợp bé gái "Genie" (bị cô lập ngôn ngữ đến năm 13 tuổi, sau đó học được từ vựng nhưng không bao giờ nắm được ngữ pháp hoàn chỉnh) thường được dùng làm minh chứng, dù đây chỉ là một nghiên cứu ca đơn lẻ có nhiều yếu tố gây nhiễu.

2.11.3 Can other species acquire language?

Comparative researchers have tested whether the nativist emphasis on a distinctly **human** language capacity is absolute by attempting to teach language-like communication to nonhuman primates. Because great apes lack the vocal anatomy for human speech sounds, these studies used alternative channels: the chimpanzee Washoe was taught to produce signs from American Sign Language, and the bonobo Kanzi learned to communicate using a board of visual symbols (lexigrams). Both animals learned to reliably use dozens to hundreds of signs/symbols to request objects, label items, and combine a small number of signs in sequence.

The central scientific debate over these studies concerns whether ape communication constitutes true **language** in the full human sense, or a more limited associative/referential communication system. Critics point out that apes' sign combinations show little evidence of consistent, productive **syntax** (systematic grammatical rules for ordering and combining signs to generate new, rule-governed meanings) and that ape "sentences" remain short and often repetitive, in contrast to human children, who spontaneously generate a vast range of novel, grammatically organized sentences from a young age without needing to be explicitly taught grammar. Most researchers conclude that apes can acquire a meaningful referential vocabulary but do not acquire language's full grammatical, generative structure the way human children do.

Ví dụ mẫu · Evaluating the evidence from ape language studies

A researcher reports that a chimpanzee has learned 150 signs and regularly combines two or three signs to request food or play (e.g., signing "more," "tickle"). A skeptic argues this does not demonstrate true language ability. Evaluate the skeptic's argument using the concept of syntax.

The skeptic's argument rests on the distinction between a large **vocabulary** of learned associations and a productive **grammatical** system. Learning that a specific sign reliably refers to a specific object or request (an association between a symbol and its meaning) demonstrates real referential communication, but it does not, by itself, demonstrate **syntax** — the systematic rule structure that would allow the chimpanzee to combine signs in novel, rule-governed ways to generate an open-ended range of new meanings, the way a human child spontaneously produces sentences never heard before. If the chimpanzee's two- or three-sign combinations are limited to a small number of fixed, repeated patterns learned through reinforcement rather than a flexible, rule-governed system capable of generating genuinely novel combinations, the skeptic's concern is well-founded: the evidence would then support meaningful referential communication without fully supporting the claim that the chimpanzee has acquired **language** in the complete human sense defined by generative grammar.

GIẢI THÍCH TIẾNG VIỆT

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Các nghiên cứu như dạy tinh tinh Washoe ngôn ngữ ký hiệu (ASL) hoặc dạy vượn Kanzi dùng bảng biểu tượng (lexigram) cho thấy vượn/tinh tinh có thể học một số lượng lớn ký hiệu/biểu tượng để yêu cầu đồ vật hoặc hoạt động. Tuy nhiên, tranh luận khoa học chính là liệu đây có phải **ngôn ngữ** thật sự hay không: các nhà nghiên cứu phần lớn cho rằng động vật này thiếu **cú pháp** (syntax) có hệ thống — khả năng kết hợp các ký hiệu theo quy tắc ngữ pháp để tạo ra vô số câu **mới** có nghĩa, như trẻ em loài người vẫn làm một cách tự nhiên. Vì vậy, kết luận phổ biến là động vật có thể học được **từ vựng tham chiếu** nhưng không đạt đến cấu trúc ngữ pháp sinh sản (generative grammar) đầy đủ như ngôn ngữ loài người.

2.11.4 Language, thought, and the brain

The **linguistic relativity hypothesis (Sapir-Whorf hypothesis)** proposes that the particular language a person speaks shapes and constrains the way that person thinks — for example, if a language has many distinct words for different shades of a color, its speakers may perceive and discriminate between those shades more readily than speakers of a language with only one word for the same range. This strong version of the hypothesis (that language rigidly **determines** thought) is not well supported; a weaker, more widely accepted version — that language **influences** certain aspects of thought and habitual attention, without fully determining what a person is capable of thinking — has more empirical support. Other evidence indicates that meaningful thought can also occur **without** language: preverbal infants and many nonhuman animals demonstrate sophisticated cognition (object permanence, problem solving, basic categorization) despite lacking language.

Language areas of the brain

Broca's area, located in the frontal lobe (typically the left hemisphere), is critical for **speech production**. Damage to Broca's area produces **Broca's aphasia**: speech becomes slow, labored, and non-fluent, often reduced to short, effortful phrases with simplified grammar, while comprehension of others' speech remains relatively intact.

Wernicke's area, located in the temporal lobe, is critical for **language comprehension**. Damage to Wernicke's area produces **Wernicke's aphasia**: speech remains fluent in rhythm and grammar but is often nonsensical or filled with made-up or incorrect words ("word salad"), and comprehension of others' speech is severely impaired.

Brain area	Lobe	Function	Aphasia if damaged
Broca's area	Frontal	Speech production	Slow, labored, non-fluent speech; comprehension largely intact
Wernicke's area	Temporal	Language comprehension	Fluent but nonsensical speech; poor comprehension

(!) Lỗi thường gặp: Học sinh thường lẫn lộn triệu chứng của hai loại mất ngôn ngữ (aphasia). Mẹo nhớ: **Broca's area** ở **thùy trán** (frontal — "phía trước," gần vùng vận động điều khiển miệng/lưỡi) → tổn thương gây **khó khăn khi NÓI** (lời nói chậm, đứt quãng, ngữ pháp đơn giản) nhưng vẫn **HIỂU** được người khác nói gì. **Wernicke's area** ở **thùy thái dương** (temporal — gần vùng thính giác) → tổn thương gây **khó khăn khi HIỂU** nhưng lời nói vẫn trôi chảy về mặt âm điệu/ngữ pháp — dù nội dung vô nghĩa ("salad từ ngữ"). Nói ngắn gọn: Broca → nói khó, hiểu được; Wernicke → nói trôi chảy nhưng vô nghĩa, hiểu kém.

Ví dụ mẫu · Diagnosing aphasia type from a speech transcript

A neurologist records two patients describing the same picture of a family having a picnic. Patient X says: "Picnic... park... uh... family... eating... good," speaking slowly with obvious effort and long pauses, but correctly points to the appropriate objects when asked to identify them by name. Patient Y says fluently, without hesitation: "The gribble is having a nice tresh with the flopper near the window, and they are very sindle about it," using normal sentence rhythm and grammar but with mostly meaningless content words, and is unable to correctly point to the objects the examiner names aloud. Diagnose each patient's likely aphasia type and the brain region most likely damaged.

Patient X shows slow, labored, effortful, grammatically simplified speech (classic **non-fluent** output) while comprehension is intact (correctly identifies named objects) — this pattern matches **Broca's aphasia**, indicating likely damage to **Broca's area** in the frontal lobe.

Patient Y shows fluent speech with normal rhythm and grammatical structure, but the content is largely meaningless (invented or incorrect words) and comprehension is severely impaired (cannot identify named objects) — this pattern matches **Wernicke's aphasia**, indicating likely damage to **Wernicke's area** in the temporal lobe.

GIẢI THÍCH TIẾNG VIỆT

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Giả thuyết **Sapir-Whorf** (linguistic relativity) cho rằng ngôn ngữ mà một người sử dụng định hình cách người đó tư duy — phiên bản mạnh (ngôn ngữ hoàn toàn **quyết định** tư duy) không được ủng hộ mạnh, nhưng phiên bản yếu hơn (ngôn ngữ **ảnh hưởng** đến một số khía cạnh tư duy) được chấp nhận rộng rãi hơn; tư duy vẫn có thể xảy ra **mà không cần ngôn ngữ** (trẻ sơ sinh và động vật vẫn có những khả năng nhận thức nhất định dù chưa có ngôn ngữ). Về mặt não bộ: **vùng Broca** (thùy trán) điều khiển **sản sinh lời nói** — tổn thương gây mất ngôn ngữ Broca (nói chậm, đứt quãng, nhưng hiểu tốt); **vùng Wernicke** (thùy thái dương) điều khiển **hiểu ngôn ngữ** — tổn thương gây mất ngôn ngữ Wernicke (nói trôi chảy nhưng vô nghĩa, hiểu kém).

2.11.5 Bilingualism and cognitive flexibility

The relationship between language and thought can also be examined by studying people who routinely operate in more than one language. Research comparing bilingual and monolingual individuals has found that lifelong bilingualism is associated with modest advantages on certain **executive function** tasks — particularly tasks requiring **cognitive flexibility** (switching attention between competing rules or tasks) and **inhibitory control** (suppressing an irrelevant or competing response) — plausibly because constantly managing and selecting between two active language systems provides ongoing practice for the brain's general attention-control networks. Some research further suggests that lifelong bilingualism may be associated with a somewhat later average age of onset for dementia symptoms, although this remains an active and debated area of research, and any bilingual advantage on executive function tasks tends to be modest in size and does not appear on every single measure of executive function that has been tested.

GIẢI THÍCH TIẾNG VIỆT

VN

Nghiên cứu so sánh người **song ngữ** (bilingual) và người **đơn ngữ** cho thấy việc sử dụng thường xuyên hai ngôn ngữ có thể mang lại một số lợi thế nhẹ về **chức năng điều hành** (executive function) — đặc biệt là khả năng **chuyển đổi linh hoạt giữa các quy tắc/nhiệm vụ và kiểm soát ức chế** (ức chế phản ứng không liên quan) — do việc liên tục quản lý và lựa chọn giữa hai hệ thống ngôn ngữ giúp "luyện tập" mạng lưới kiểm soát chú ý của não. Một số nghiên cứu cho thấy song ngữ suốt đời có thể liên quan đến việc khởi phát triệu chứng sa sút trí tuệ muộn hơn một chút, nhưng đây vẫn là lĩnh vực còn nhiều tranh luận, và lợi thế này (nếu có) thường ở mức độ khiêm tốn.

2.12 Problem Bank

Bài tập luyện tập

Which structure functions as the body's master biological clock, receiving direct input from light-sensitive cells in the retina?

- (A) The pineal gland
- (B) The suprachiasmatic nucleus
- (C) The amygdala
- (D) The cerebellum

Lời giải chi tiết

The suprachiasmatic nucleus (SCN), located in the hypothalamus, receives light information directly from the retina and functions as the master circadian clock; it then regulates the pineal gland's release of melatonin. The pineal gland executes the hormonal signal but is not itself the master clock. **(B)**.

Bài tập luyện tập

An EEG recording shows large, slow delta waves, and the sleeper is very difficult to wake. Which sleep stage is this?

- (A) NREM Stage 1
- (B) NREM Stage 2
- (C) NREM Stage 3 (slow-wave sleep)
- (D) REM sleep

Lời giải chi tiết

Delta waves are large, slow brain waves characteristic of the deepest stage of NREM sleep, slow-wave sleep (NREM Stage 3), which is also the stage from which people are hardest to awaken. **(C)**.

Bài tập luyện tập

Explain why REM sleep is sometimes called "paradoxical sleep."

Lời giải chi tiết

REM sleep is paradoxical because two normally correlated aspects of physiological state become dissociated: brain activity (measured by EEG) resembles the fast, low-amplitude pattern of an almost-awake brain, and other signs of arousal (heart rate, breathing) become irregular, yet the body's voluntary skeletal muscles are almost completely paralyzed (muscle atonia). The brain looks highly active and nearly awake while the body is, in effect, locked down and immobile – an unusual combination that gives REM sleep its "paradoxical" label.

Bài tập luyện tập

Which theory of sleep proposes that immobility during dangerous or unproductive hours conferred a survival advantage over the course of human evolution?

- (A) Restoration theory
- (B) Memory consolidation theory
- (C) Evolutionary/adaptive theory
- (D) Activation-synthesis theory

Lời giải chi tiết

Evolutionary (adaptive) theory explains sleep as a trait shaped by natural selection because staying immobile during predictable dangerous or low-value hours (e.g., night, for early humans) conserved energy and reduced predation risk. Restoration theory instead emphasizes physical repair; memory consolidation theory emphasizes strengthening memories; activation-synthesis is a theory of dreaming, not a general theory of why sleep exists. **(C)**.

Bài tập luyện tập

A patient reports sudden, uncontrollable daytime sleep attacks and episodes in which strong emotion (such as laughter) causes a sudden loss of muscle control. Which disorder does this most likely describe?

- (A) Insomnia
(B) Sleep apnea
(C) Narcolepsy
(D) Somnambulism

Lời giải chi tiết

Sudden, uncontrollable "sleep attacks" combined with cataplexy (sudden muscle weakness triggered by strong emotion, reflecting an intrusion of REM-like paralysis into waking life) are the hallmark features of narcolepsy. Insomnia involves difficulty falling/staying asleep; sleep apnea involves repeated breathing interruptions during sleep; somnambulism is sleepwalking. **(C)**.

Bài tập luyện tập

Distinguish a night terror from a nightmare in terms of (a) the sleep stage in which each occurs and (b) whether the sleeper typically remembers the episode.

Lời giải chi tiết

A **nightmare** is a frightening dream that occurs during **REM** sleep; because REM is strongly associated with vivid, narrative dreaming, the sleeper typically **does** recall the nightmare's content upon waking. A **night terror** occurs during **NREM Stage 3** (slow-wave sleep) and involves intense fear, screaming, and strong autonomic arousal, but the sleeper typically has **no memory** of the episode afterward, since it did not occur during the dream-rich REM stage.

Bài tập luyện tập

According to activation-synthesis theory, what is the primary source of dream content?

- (A) Disguised, unconscious wishes that would be unacceptable if expressed directly
(B) Random neural activity generated by the brainstem during REM sleep, which the cortex weaves into a narrative
(C) Direct replay of the day's memories in the order they were experienced
(D) Sensory input from the external environment during sleep

Lời giải chi tiết

Activation-synthesis theory (Hobson & McCarley) proposes that the brainstem generates largely random neural activity during REM sleep, and the cortex synthesizes this activity into a coherent-seeming narrative — the dream. Disguised unconscious wishes describe Freud's theory, not activation-synthesis. **(B)**.

Bài tập luyện tập

In Freudian dream theory, distinguish the manifest content of a dream from its latent content, using an example.

Lời giải chi tiết

The **manifest content** is the dream exactly as it is consciously experienced and reported (e.g., "I dreamed I was flying over my old school"). The **latent content** is the underlying, disguised true meaning Freud believed psychoanalysis could uncover beneath the manifest content (e.g., the flying dream might symbolically represent a wish for freedom from a stressful or controlling situation associated with that school). Freud held that latent wishes are disguised as manifest content because expressing them directly would be too psychologically threatening or unacceptable.

Bài tập luyện tập

Ernest Hilgard's concept of a "hidden observer" during hypnosis is central to which theory?

- | | |
|-----------------------------|---------------------------------|
| (A) Social influence theory | (C) Activation-synthesis theory |
| (B) Dissociation theory | (D) Levels-of-processing theory |

Lời giải chi tiết

Hilgard's dissociation theory proposes that hypnosis splits consciousness into two simultaneous streams: one that complies with the hypnotist's suggestions, and a "hidden observer" stream that remains aware of what is truly happening (e.g., still registering pain even while the compliant stream reports no pain). Social influence theory instead denies that hypnosis is a distinct altered state at all. **(B)**.

Bài tập luyện tập

A patient in severe pain is given morphine, which binds to and activates the same receptors normally activated by the body's own endorphins. Morphine is therefore best described as an endorphin receptor:

- | | |
|----------------|--|
| (A) Antagonist | (C) Depressant only, with no receptor action |
| (B) Agonist | (D) Hallucinogen |

Lời giải chi tiết

A molecule that binds to a receptor and mimics/enhances the neurotransmitter's (or, here, the endogenous opioid's) normal effect is an **agonist**. Morphine activates endorphin receptors just as endorphins themselves would, producing pain relief and euphoria; this is textbook agonist action. (It is also a depressant with receptor-mediated action, so "depressant only, with no

receptor action” is factually wrong on the mechanism.) (B).

Bài tập luyện tập

Explain, using a single concrete example, the difference between physical dependence and psychological dependence on a drug.

Lời giải chi tiết

Physical dependence exists when the body has adapted so that it requires the drug to function normally, and stopping produces a physical **withdrawal** syndrome — for example, a person dependent on alcohol may experience tremors, sweating, and even seizures upon stopping. **Psychological dependence** is a perceived emotional need or craving for the drug’s effects (e.g., using alcohol specifically to cope with anxiety or stress) that can persist, and drive continued use or relapse, even after physical withdrawal symptoms have fully resolved. The two often co-occur but are conceptually and sometimes practically separable.

Bài tập luyện tập

Iconic memory and echoic memory are both examples of which stage of the Atkinson–Shiffrin model?

(A) Short-term memory

(C) Long-term memory

(B) Sensory memory

(D) Working memory

Lời giải chi tiết

Iconic memory (a very brief visual trace lasting well under a second) and echoic memory (an auditory trace lasting a few seconds) are both forms of **sensory memory**, the first, extremely brief stage of the multi-store model, prior to any transfer via attention into short-term memory. (B).

Bài tập luyện tập

A participant is asked to recall the string “J-F-K-C-I-A-F-B-I-U-S-A” as 12 separate letters, which exceeds short-term memory capacity. Explain how chunking these letters into “JFK,” “CIA,” “FBI,” “USA” changes the memory load, and state Miller’s estimate of short-term memory capacity in chunks.

Lời giải chi tiết

Short-term memory capacity is limited to roughly **seven items, plus or minus two** (Miller’s “magic number seven”) — but the limit is on the number of *meaningful units*, not the number of individual letters or digits. Recoding the 12 letters into four familiar acronyms (“JFK,” “CIA,” “FBI,” “USA”) reduces the memory load from 12 separate items to just 4 chunks, comfortably within the seven-item limit, even though the total amount of underlying information is unchanged. This illustrates why chunking is such an effective way to stretch the practical capacity of short-term memory.

Bài tập luyện tập

In Baddeley's working memory model, which component is responsible for storing and rehearsing verbal/auditory information?

- (A) Central executive (C) Phonological loop
(B) Visuospatial sketchpad (D) Episodic buffer

Lời giải chi tiết

The phonological loop is the component of Baddeley's working memory model dedicated to storing and rehearsing verbal and auditory information (an "inner voice"). The central executive coordinates attention across components; the visuospatial sketchpad handles visual/spatial information; the episodic buffer integrates information from all subsystems and long-term memory into a coherent episode. **(C)**.

Bài tập luyện tập

Classify each memory as explicit (episodic or semantic) or implicit (procedural, conditioned association, or priming): (a) recalling the make and color of your first car; (b) knowing that spiders have eight legs; (c) typing quickly on a keyboard without consciously thinking about each keystroke; (d) feeling a spike of anxiety upon hearing a sound that resembles a dentist's drill, without consciously recalling any specific past visit.

Lời giải chi tiết

- (a) **Episodic** (explicit) — a personally experienced event tied to a specific time and place.
(b) **Semantic** (explicit) — general factual knowledge about the world, not tied to a personal experience.
(c) **Procedural** (implicit) — a learned motor skill performed without conscious step-by-step recall.
(d) **Conditioned association** (implicit) — a classically conditioned emotional response triggered without conscious recollection of its origin.

Bài tập luyện tập

According to the levels-of-processing framework (Craik & Lockhart), which type of processing produces the strongest long-term retention?

- (A) Shallow/structural processing (attending to physical appearance) (C) Deep/semantic processing (attending to meaning)
(B) Phonemic processing (attending to sound) (D) All three levels produce equally strong retention

Lời giải chi tiết

Craik and Lockhart's framework holds that the depth of processing at encoding determines retention strength: deep/semantic processing (engaging with a word's or item's *meaning*) produces the strongest, most durable memories, more than shallow/structural processing (appearance) or intermediate phonemic processing (sound). **(C)**.

Research design. A cognitive psychologist wants to test whether distributed (spaced) practice produces better long-term retention of a list of 50 historical facts than massed practice. Two groups of randomly assigned participants study the identical 50 facts for a total of 100 minutes: Group A studies in one uninterrupted 100-minute session; Group B studies in five separate 20-minute sessions spread across five days. All participants take an identical, unannounced 50-item recall test exactly two weeks after their final study session. (a) Identify the independent and dependent variables. (b) Explain one potential confound the researcher must control for, and how random assignment helps. (c) State the result predicted by the spacing effect.

Lời giải chi tiết

(a) The **independent variable** is the study schedule (massed practice in a single 100-minute session vs. distributed practice across five 20-minute sessions). The **dependent variable** is the number of facts correctly recalled on the test given two weeks after the final study session.

(b) A key potential confound is **prior knowledge or general memory ability**: if, by chance, Group B happened to contain more participants with stronger baseline memory skills or more prior familiarity with the historical facts, any recall advantage might reflect that pre-existing difference rather than the study schedule itself. **Random assignment** controls for this by distributing such individual differences roughly evenly between the two groups on average, so that if a reliable difference in recall emerges, it can be attributed to the manipulated variable (study schedule) rather than to systematic pre-existing group differences.

(c) Consistent with the **spacing effect**, Group B (distributed practice) should recall significantly more facts than Group A (massed practice), despite both groups spending an identical total study time (100 minutes) with the material.

Bài tập luyện tập

A list of 30 words is read aloud, and participants immediately attempt free recall. Which pattern of results would indicate a serial position effect?

- (A) Recall is uniformly low across all list positions (C) Recall is high for the first few and last few words, but low for words in the middle
- (B) Recall is uniformly high across all list positions (D) Recall is high only for words that rhyme with the participant's own name

Lời giải chi tiết

The serial position effect predicts a U-shaped (or "scalloped") recall curve: strong recall for early items (primacy effect, due to extra rehearsal and transfer to long-term memory) and strong recall for the most recent items (recency effect, because they remain active in short-term memory), with weaker recall for middle items that benefit from neither advantage. (C).

Research design / data interpretation. A researcher records the percentage of a word list correctly retained at several delays after initial learning:

Delay	Immediate	1 hour	1 day	1 week	4 weeks
% retained	100%	62%	45%	38%	34%

- (a) Describe the shape of this forgetting curve. (b) Explain what this shape indicates about

when review/rehearsal would have the greatest protective effect against forgetting. (c) Name one factor besides pure storage decay that could also explain some of this data loss.

Lời giải chi tiết

(a) The data follow the classic **Ebbinghaus forgetting curve** shape: a steep initial drop (100%→62% within the first hour, a 38-point loss) followed by a much more gradual decline thereafter (62%→34% over the next four weeks, a smaller 28-point loss spread across nearly a month).

(b) Because the largest share of forgetting happens **soon after learning**, a review session scheduled within the first hour to first day would intercept the steepest part of the curve and preserve the most information; reviewing again at longer intervals afterward addresses the slower, ongoing decline (consistent with using the spacing effect to schedule review sessions).

(c) Besides storage decay, **interference** (e.g., retroactive interference from other material learned in the intervening weeks) could also account for some of the measured loss, as could **encoding failure** for the portion of the list that was never deeply processed in the first place.

Bài tập luyện tập

A student learned Spanish vocabulary years ago and is now struggling to recall it because newly learned French vocabulary keeps coming to mind instead. This is an example of:

(A) Proactive interference

(C) Encoding failure

(B) Retroactive interference

(D) Source amnesia

Lời giải chi tiết

The **newer** learning (French) is disrupting recall of the **older** learning (Spanish) — new information interfering "backward" onto old information is the defining pattern of **retroactive interference**. (If instead old Spanish vocabulary were intruding on attempts to recall new French vocabulary, that would be proactive interference.) (B).

Research design / critique. A researcher shows 120 participants an identical video of a traffic accident. Immediately afterward, participants are randomly assigned to answer one of two versions of a single question: "About how fast was the car going when it *smashed into* the other car?" or "About how fast was the car going when it *contacted* the other car?" One week later, all participants are unexpectedly asked whether they recall seeing broken glass at the accident scene (there was none in the video). (a) Identify the independent and dependent variables. (b) Predict the result based on Loftus's misinformation-effect research. (c) Identify one design feature that strengthens this study's ability to isolate a genuine memory-distortion effect (rather than mere guessing), and one limitation.

Lời giải chi tiết

(a) The **independent variable** is the verb used in the immediate post-event question ("smashed into" vs. "contacted"). The **dependent variables** are (i) participants' estimated speed and (ii) whether participants falsely report having seen broken glass one week later.

(b) Consistent with Loftus's classic findings, participants who received the more violent-sounding verb ("smashed into") should give **higher** speed estimates and should be **more likely**

to falsely recall broken glass one week later than participants who received the neutral verb ("contacted") – even though every participant watched the exact same video with no broken glass in it.

(c) **Strength:** random assignment to question wording ensures the two groups are comparable at the outset, so any difference in later recall can be attributed to the wording manipulation rather than to pre-existing differences between participants; testing recall after a one-week **delay** (rather than immediately) also gives the misleading information time to be integrated into memory, which is when misinformation effects are typically strongest. **Limitation:** participants know they are in a psychology study and may be affected by demand characteristics (guessing what the "expected" answer is) rather than by genuine memory distortion; a stronger design would also measure confidence ratings and include a condition with no leading question at all, to separate memory change from simple compliance or guessing.

Bài tập luyện tập

A witness correctly remembers a specific detail about a crime but mistakenly believes she personally observed it at the scene, when she actually only read about that detail in a newspaper article the next day. This is an example of:

- | | |
|------------------------------|--------------------------------|
| (A) Retroactive interference | (C) The serial position effect |
| (B) Source amnesia | (D) State-dependent memory |

Lời giải chi tiết

The content of the memory itself is accurate, but its **source** has been misattributed (crime scene vs. newspaper article) – this is the defining feature of **source amnesia** (source misattribution), a mechanism that can make eyewitness testimony unreliable even when the remembered detail itself is technically correct. **(B)**.

Bài tập luyện tập

Explain why flashbulb memories are described as vivid and confidently held, but not necessarily accurate.

Lời giải chi tiết

Flashbulb memories (vivid, detailed memories of the circumstances surrounding a highly emotional or surprising public event) are held with strong subjective confidence, and people often report a feeling of certainty about even small details. However, controlled follow-up research (comparing accounts given shortly after an event with accounts given by the same people years later) shows that flashbulb memories can drift, lose detail, or be distorted over time just as ordinary memories can – the memory is still **reconstructed** at each retrieval, and emotional intensity and subjective confidence do not immunize it against the same construction and distortion processes that affect memory generally.

Bài tập luyện tập

Which brain structure is most directly responsible for forming new explicit (declarative) long-term memories, such that its removal produces severe anterograde amnesia, as seen in patient H.M.?

- (A) Amygdala
- (B) Hippocampus

- (C) Cerebellum
- (D) Broca's area

Lời giải chi tiết

The hippocampus is critical for consolidating new explicit/declarative memories; H.M.'s bilateral surgical removal of the hippocampus (and surrounding medial temporal lobe tissue) left him unable to form new explicit memories (severe anterograde amnesia), even though his procedural learning remained intact. The amygdala is more specifically tied to emotional memory. **(B)**.

Bài tập luyện tập

Explain what H.M.'s ability to improve at a mirror-tracing task across repeated sessions — despite having no conscious memory of practicing it before — reveals about the organization of long-term memory in the brain.

Lời giải chi tiết

H.M.'s steady, session-to-session improvement on the mirror-tracing task, combined with his complete lack of conscious memory of ever having performed it, shows that **explicit** memory (which requires the hippocampus, severely damaged in H.M.) and **implicit/procedural** memory (which relies on other structures, such as the cerebellum and basal ganglia, that remained intact) are **separable memory systems**. A single case can show one system severely impaired while the other functions normally, which is strong evidence that they are not simply two aspects of one unified memory system but are supported by at least partially distinct brain circuits.

Bài tập luyện tập

Long-term potentiation (LTP) is best described as:

- (A) The gradual fading of a memory trace over time if it is not accessed
- (B) A strengthening of the synaptic connection between two neurons that fire together repeatedly
- (C) The process by which sensory memory is converted into short-term memory
- (D) A form of interference between two competing memories

Lời giải chi tiết

LTP refers to the strengthening of a synaptic connection that results when two connected neurons are repeatedly and simultaneously active — "neurons that fire together, wire together" — and is considered the cellular/neural basis of learning and memory. Fading over time describes storage decay, not LTP. **(B)**.

Bài tập luyện tập

A person unexpectedly encounters a loud noise resembling a car crash and immediately feels intense fear and forms an especially vivid memory of the moment. Which brain structure most directly explains the intensified emotional memory formation in this case?

(A) Hippocampus

(B) Amygdala

(C) Wernicke's area

(D) Suprachiasmatic nucleus

Lời giải chi tiết

The amygdala is central to emotional memory, especially fear-related learning, and enhances the consolidation of memories for emotionally arousing events — which is why frightening or emotionally intense experiences are often remembered more vividly than neutral ones. **(B)**.

Applying a cognitive bias. After reading extensive, highly publicized news coverage of a small number of shark attacks over the summer, a swimmer becomes convinced that shark attacks are one of the most common causes of death for ocean swimmers and refuses to enter the water, even though statistically, drowning and rip currents are far more dangerous. (a) Name the heuristic responsible for this belief. (b) Explain the underlying cognitive mechanism. (c) Describe one real-world consequence of this heuristic operating at a large, societal scale (for example, in response to media coverage of rare but dramatic events).

Lời giải chi tiết

(a) This illustrates the **availability heuristic**.

(b) The availability heuristic leads people to judge the frequency or likelihood of an event by **how easily examples come to mind**, rather than by actual statistical frequency. Because shark attacks are vivid, dramatic, and heavily covered by media, examples of them come to mind very easily, causing their perceived frequency/danger to be **overestimated** relative to less dramatic but statistically far more common risks, such as drowning, which receive comparatively little vivid media coverage.

(c) At a societal scale, the availability heuristic driven by media coverage can distort public risk perception and policy priorities — for example, public fear and precautionary behavior (or public spending) directed at rare, vivid threats (terrorism, shark attacks, plane crashes) can outpace the actual statistical risk they pose, while more common but less dramatic risks (heart disease, car accidents, seasonal flu) receive comparatively less public concern or resource allocation despite causing far more harm overall.

Bài tập luyện tập

A hiring manager, after learning that a job candidate has a quiet, meticulous, detail-oriented personality, concludes the candidate is more likely to be an accountant than a salesperson — even after being told that, in the applicant pool, salespeople outnumber accountants by ten to one. This judgment illustrates:

(A) The availability heuristic

(B) The representativeness heuristic, with base-rate neglect

(C) The anchoring effect

(D) The gambler's fallacy

Lời giải chi tiết

The manager is judging category membership by how closely the candidate's traits **resemble** the stereotype/prototype of an accountant, while largely ignoring the statistical **base rate** (salespeople outnumber accountants ten to one in this pool) — the defining combination of

the **representativeness heuristic** and base-rate neglect. **(B)**.

Bài tập luyện tập

In a salary negotiation, the first number mentioned by either party tends to strongly influence the final agreed-upon salary, even when that number was somewhat arbitrary. This best illustrates:

- | | |
|--------------------------|--------------------------|
| (A) The framing effect | (C) Functional fixedness |
| (B) The anchoring effect | (D) Confirmation bias |

Lời giải chi tiết

Relying too heavily on the first piece of information encountered (here, the first number mentioned) when making subsequent judgments or estimates is the defining feature of the **anchoring effect**. The framing effect instead concerns how the same information is worded (e.g., gains vs. losses), not which number is mentioned first. **(B)**.

Bài tập luyện tập

In Karl Duncker's candle problem, why do participants who are given the tacks already poured out beside the box (rather than inside the closed box) tend to solve the problem faster?

Lời giải chi tiết

When the tacks are inside the box, participants perceive the box only in its familiar role as a **container**, a case of **functional fixedness** that blocks recognition of its alternative use as a **platform** that can be tacked to the wall to hold the candle. When the tacks are already emptied out beside the box, the box is not perceptually tied to its usual container function at that moment, making participants more likely to notice and use its alternative function — leading to faster solutions.

Bài tập luyện tập

A sports commentator says, after a last-second underdog victory, "You could see this coming from a mile away — it was obvious the whole game." Statistical betting records show almost nobody predicted this outcome beforehand. This comment best illustrates:

- | | |
|---------------------------|--------------------------------|
| (A) The gambler's fallacy | (C) The availability heuristic |
| (B) Hindsight bias | (D) Belief perseverance |

Lời giải chi tiết

After learning the outcome, the commentator now believes (and claims) the result was obvious and predictable all along, despite the fact that almost no one actually predicted it beforehand — the classic "I knew it all along" pattern of **hindsight bias**, which distorts memory of one's own earlier, genuine uncertainty. **(B)**.

Bài tập luyện tập

Explain why believing that a roulette wheel is "due" to land on red after five consecutive spins of black is a fallacy, using the concept of statistical independence.

Lời giải chi tiết

This is the **gambler's fallacy**: the mistaken belief that the outcome of an independent random event is influenced by a streak of past outcomes. Each spin of a fair roulette wheel is **statistically independent** of every previous spin – the wheel has no memory of past results, and the physical probability of landing on red versus black remains the same on every single spin, regardless of how many times black has come up in a row. Believing red is "due" incorrectly assumes some corrective mechanism must balance out a short-term streak, when in a truly random, independent process no such mechanism exists.

Bài tập luyện tập

Which type of thinking generates many possible solutions or ideas from a single starting point, and is most closely associated with creativity?

- | | |
|-------------------------|--------------------------|
| (A) Convergent thinking | (C) Algorithmic thinking |
| (B) Divergent thinking | (D) Mental set |

Lời giải chi tiết

Divergent thinking generates multiple possible solutions or ideas branching out from a single starting point and is the type of thinking most closely associated with creativity. Convergent thinking instead narrows multiple possibilities down to one correct or optimal answer. **(B)**.

Bài tập luyện tập

Spearman's concept of a general intelligence factor (g) is most directly challenged by which of the following theorists?

- | | |
|---|--------------------|
| (A) Lewis Terman | (C) Alfred Binet |
| (B) Howard Gardner, with his theory of multiple, relatively independent intelligences | (D) David Wechsler |

Lời giải chi tiết

Gardner's theory of multiple intelligences directly challenges Spearman's single- g view by proposing several relatively independent intelligences (linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, naturalistic), each with a separate basis, rather than one general ability underlying all cognitive performance. Terman and Wechsler focused on test construction; Binet created the first practical intelligence test. **(B)**.

Bài tập luyện tập

A 6-year-old child performs on an intelligence test at a level typical of a 9-year-old. Using the original ratio IQ formula, calculate this child's IQ.

Lời giải chi tiết

$$\text{IQ} = \frac{\text{mental age}}{\text{chronological age}} \times 100 = \frac{9}{6} \times 100 = 150.$$

This child's ratio IQ is **150**, indicating performance well above average for their chronological age group.

Bài tập luyện tập

A test-maker finds that scores on a new test correlate strongly with scores from a retest given to the same participants three months later. This finding most directly supports the test's:

- (A) Content validity (C) Reliability
(B) Predictive validity (D) Construct validity

Lời giải chi tiết

A strong correlation between an initial test score and a retest score for the same people is precisely how **test-retest reliability** – a form of reliability – is assessed; it demonstrates consistency of measurement over time, not necessarily that the test measures the correct construct or predicts a future outcome. (C).

Data interpretation. A twin-study researcher compiles the following average IQ correlations from a large sample:

Pair type	Average IQ correlation
Identical (monozygotic) twins reared together	0.86
Identical (monozygotic) twins reared apart	0.72
Fraternal (dizygotic) twins reared together	0.60
Biologically unrelated adoptive siblings reared together	0.32

(a) What do these data suggest about the relative contributions of genetics and shared environment to IQ? (b) Explain why the comparison between identical twins reared *apart* and fraternal twins reared *together* is especially informative. (c) State one important limitation on interpreting these correlations as precise, generalizable "percentages" of genetic influence.

Lời giải chi tiết

(a) Because **identical** twins (who share 100% of their genes) show consistently higher IQ correlations than **fraternal** twins (who share on average 50% of their genes) regardless of rearing condition, and because even unrelated adoptive siblings sharing only environment show a positive but much weaker correlation (0.32), the data suggest that genetics makes a substantial contribution to individual differences in IQ, while shared environment also contributes but somewhat less strongly on its own.

(b) Identical twins reared **apart** (0.72) still show a notably higher correlation than fraternal twins reared **together** (0.60), even though the "reared apart" identical twins did not share a

common rearing environment while the fraternal twins did. This comparison helps isolate the genetic contribution from the shared-environment contribution, because it holds "shared environment" roughly constant at a low level for one group while genetic relatedness differs — and shows that genetic similarity alone, even without shared environment, still predicts substantial IQ similarity.

(c) A key limitation is that **heritability estimates apply only within the specific population studied** and describe the proportion of **variance** in a trait attributable to genetic differences **within that group under those environmental conditions** — they cannot be used to explain **differences between two separate groups** (e.g., between different socioeconomic or ethnic groups), since between-group differences could be driven entirely by systematic environmental differences between the groups, regardless of how heritable the trait is within each group.

Bài tập luyện tập

The Flynn effect refers to the observation that:

- (A) IQ scores decline steadily with each new generation due to increasing screen time
- (B) Average IQ scores have risen substantially across generations, largely due to environmental factors
- (C) Identical twins always have identical IQ scores
- (D) IQ scores are unrelated to any environmental factor

Lời giải chi tiết

The Flynn effect describes a substantial **rise** in average IQ scores across successive generations over the twentieth century, a pattern too rapid to reflect genetic change and instead attributed to environmental factors such as improved nutrition, increased education, and greater familiarity with abstract test-taking. **(B)**.

Bài tập luyện tập

Before taking a standardized math test, a group of female students is reminded that "women historically score lower than men on this type of test," while a comparison group of female students receives no such reminder. Predict and explain the likely effect on the reminded group's performance, based on stereotype threat research.

Lời giải chi tiết

Based on Claude Steele's research on **stereotype threat**, the group reminded of the negative stereotype should perform **worse** on the test than the comparison group, even though the two groups do not differ in actual underlying math ability. Awareness of a negative stereotype about one's own group creates anxiety and diverts cognitive resources toward self-monitoring and worry about confirming the stereotype, which directly impairs performance on the task the stereotype concerns. This demonstrates that at least part of a measured group difference in test performance can be produced by the immediate testing situation itself (the stereotype reminder), not by any genuine underlying difference in ability between the groups.

Bài tập luyện tập

Identify the smallest unit of *sound* and the smallest unit of *meaning* in language, and give one example of each.

Lời giải chi tiết

The smallest distinct unit of **sound** in a language is a **phoneme** (e.g., the three sounds /k/, /æ/, /t/ that combine to form the word "cat"). The smallest unit of **meaning** in a language is a **morpheme**, which may be a whole word (e.g., "walk") or a meaningful word part such as a prefix or suffix (e.g., the "-ed" in "walked," adding the meaning "past tense").

Bài tập luyện tập

Which theorist proposed that children are born with an innate "Language Acquisition Device" that allows them to rapidly extract the grammatical rules of any language they are exposed to?

- | | |
|------------------|----------------------|
| (A) B.F. Skinner | (C) Elizabeth Loftus |
| (B) Noam Chomsky | (D) Howard Gardner |

Lời giải chi tiết

Noam Chomsky's nativist theory proposes an innate Language Acquisition Device (LAD) and universal grammar, allowing children to acquire complex grammatical rules far faster than reinforcement and imitation alone (Skinner's behaviorist account) could plausibly explain. **(B)**.

Bài tập luyện tập

Explain why the case of "Genie" — a child isolated from language exposure until age 13 who later acquired vocabulary but never mastered normal grammar — is used as evidence for a critical period in language acquisition, and identify one reason this evidence is not fully conclusive.

Lời giải chi tiết

Genie's pattern of substantial vocabulary learning alongside persistently incomplete grammar, despite years of dedicated later instruction, is consistent with the idea that there is a biologically limited **critical period**, roughly from early childhood through puberty, during which grammar in particular must be acquired for full, normal development; exposure beginning only after that window (age 13) produced an incomplete outcome specifically in the grammatical component of language. This evidence is not fully conclusive because Genie's case is an uncontrolled single case study confounded by severe abuse, neglect, and malnutrition during her isolation — any of which could independently have impaired her language development, making it impossible to cleanly attribute her outcome to the timing of language exposure alone.

Bài tập luyện tập

A patient speaks fluently, with normal sentence rhythm and grammar, but the content of their speech is largely nonsensical, and they cannot correctly follow simple spoken instructions. Which condition and brain area are most likely involved?

- | | |
|--|--|
| (A) Broca's aphasia; damage to Broca's area in the frontal lobe | (C) Retrograde amnesia; damage to the hippocampus |
| (B) Wernicke's aphasia; damage to Wernicke's area in the temporal lobe | (D) Cataplexy; damage to the suprachiasmatic nucleus |

Lời giải chi tiết

Fluent but nonsensical speech ("word salad") combined with poor comprehension is the classic pattern of **Wernicke's aphasia**, associated with damage to **Wernicke's area** in the temporal lobe. Broca's aphasia instead produces slow, labored, non-fluent speech with comprehension largely intact — the opposite fluency/comprehension pattern. **(B)**.

Bài tập luyện tập

Summarize, in two or three sentences, the strong and weak versions of the linguistic relativity (Sapir-Whorf) hypothesis, and state which version has more empirical support.

Lời giải chi tiết

The **strong** version of the linguistic relativity hypothesis claims that language fully **determines** the boundaries of thought — that speakers of different languages are constrained to think in fundamentally different, language-bound ways. The **weak** version claims only that language **influences** certain habitual patterns of thought and attention (for example, which perceptual distinctions a person notices most readily) without rigidly determining what a person is capable of thinking. Contemporary research supports the **weak** version considerably more than the strong version, particularly since preverbal infants and nonhuman animals show meaningful cognition despite lacking language altogether.

Bài tập luyện tập

A newborn infant spends a much larger proportion of total sleep time in REM sleep than a healthy older adult does. Which explanation is most consistent with current theory?

- | | |
|---|--|
| (A) REM sleep is unnecessary in adulthood and serves no ongoing function | opmental role |
| (B) REM sleep is believed to support early brain development, so a larger REM proportion in infancy fits its proposed development | (C) Older adults do not experience any REM sleep at all |
| | (D) REM proportion is unrelated to age and varies only with room temperature |

Lời giải chi tiết

REM sleep occupies an unusually large share of total sleep time in newborns, consistent with theoretical accounts that emphasize REM's role in early brain development; the proportion of REM (and of slow-wave sleep) generally declines across the lifespan, though REM continues to occur throughout adulthood and old age, just in a smaller proportion. **(B)**.

Bài tập luyện tập

Explain, using the concept of sleep debt, why a person who sleeps only 5 hours a night for a full workweek (5 nights) cannot fully "catch up" with a single 9-hour night of sleep on the weekend.

Lời giải chi tiết

If the person needs roughly 8 hours nightly, each of the 5 short nights creates a 3-hour deficit, for a total accumulated **sleep debt** of $5 \times 3 = 15$ hours by the end of the workweek. A single 9-hour recovery night provides only 1 extra hour beyond the person's normal 8-hour need,

repaying just 1 of the 15 accumulated hours of debt. Because sleep debt accumulates across multiple nights and each single night of extended sleep only repays a small fraction of it, one long night cannot fully restore attention, mood, and memory consolidation to a non-sleep-deprived baseline; several nights of adequate or extended sleep are typically required.

Bài tập luyện tập

Which of the following is a well-documented, practical application of hypnosis supported by research?

- (A) Reliably recovering fully accurate memories of forgotten childhood events
- (B) Reducing the perceived intensity of some forms of chronic or procedural pain
- (C) Permanently altering a person's core personality traits
- (D) Making a person perform actions completely contrary to their own values, simply because they were commanded to

Lời giải chi tiết

Hypnosis has reasonable research support for reducing the perceived intensity of certain types of pain (hypnotic analgesia) in willing, suggestible individuals. It does not reliably improve memory accuracy (and can increase the risk of false memories), does not permanently alter core personality, and does not compel behavior that violates a person's own values or willingness to comply. (B).

Bài tập luyện tập

An eyewitness to an armed robbery pays intense attention to the gun and, when questioned afterward, cannot accurately describe the robber's face. This best illustrates:

- (A) The weapon focus effect
- (B) The cross-race effect
- (C) State-dependent memory
- (D) The serial position effect

Lời giải chi tiết

When a weapon is present, witnesses' attention narrows toward the weapon itself at the cost of encoding other details such as the perpetrator's face — the defining pattern of the **weapon focus effect**, which reliably reduces the accuracy of later facial identification. (A).

Research design. A police department wants to test whether sequential lineups produce fewer false identifications than simultaneous lineups. Researchers show 200 participants a video of a staged theft; none of the actual "suspects" later shown to participants is the true thief. Participants are randomly assigned to view either a simultaneous six-person lineup or a sequential lineup (same six people, one at a time) and are asked to identify the thief if present. (a) Identify the independent and dependent variables. (b) Explain why it is important that the true thief is absent from every lineup shown. (c) State the result predicted by lineup research.

Lời giải chi tiết

(a) The **independent variable** is lineup format (simultaneous vs. sequential presentation of the same six lineup members). The **dependent variable** is whether each participant makes a false

identification (incorrectly selects one of the six innocent lineup members as the thief).

(b) Because the true thief is absent from every lineup, any identification made is necessarily a **false** identification of an innocent person; this design isolates the false-identification rate cleanly, without needing to also track (and disentangle it from) correct identifications of a present true culprit.

(c) Based on lineup research, the **simultaneous** lineup group should produce a **higher** rate of false identifications than the **sequential** lineup group, because simultaneous presentation encourages witnesses to use relative judgment (picking whoever looks most similar to their memory among the choices shown) rather than an absolute judgment of each individual.

Bài tập luyện tập

A witness who was highly confident in identifying a suspect turns out to have identified the wrong person. This outcome is most consistent with which established finding in eyewitness research?

- | | |
|--|---|
| (A) Confidence and accuracy are always strongly and reliably correlated | identification feedback |
| (B) Confidence is, at best, only weakly related to accuracy, especially when confidence has been influenced by post- | (C) Highly confident witnesses are never wrong |
| | (D) Confidence only matters in cases involving a weapon |

Lời giải chi tiết

Eyewitness research consistently finds that a witness's subjective confidence is only weakly related to actual accuracy, and confidence can be artificially inflated after an identification is made (e.g., through confirming feedback), further weakening any link between confidence and accuracy. (B).

Bài tập luyện tập

A chess novice tries every single legal move in a position, one by one, checking each for whether it leads to checkmate, until a winning move is found. This strategy is an example of:

- | | |
|------------------|--------------------------------|
| (A) A heuristic | (C) The availability heuristic |
| (B) An algorithm | (D) Functional fixedness |

Lời giải chi tiết

Systematically checking every possible option according to a fixed procedure until the correct answer is guaranteed to be found is the defining feature of an **algorithm** — slower than a heuristic shortcut, but guaranteed to succeed if a solution exists among the options checked. (B).

Bài tập luyện tập

Explain how confirmation bias and belief perseverance can combine to make an initially inaccurate first impression of a person very difficult to correct over time.

Lời giải chi tiết

Once an initial impression forms, **confirmation bias** causes a person to notice, seek out, and more easily remember information that fits the existing impression, while overlooking or discounting contradicting information — steadily building up what feels like a growing body of “supporting evidence” even if the impression was wrong from the start. Because this apparent evidence accumulates over time, the belief becomes more strongly held and more resistant to change; even when strong, clear contradictory evidence eventually appears, **belief perseverance** can cause the original impression to persist anyway, since a belief that already feels well-supported by (biased) experience is harder to dislodge than a newly formed one.

Bài tập luyện tập

In an adoption study, adopted children’s IQ scores correlate more strongly with their biological parents (with whom they have had no contact) than with their adoptive parents (who raised them). This finding provides evidence for:

- (A) A purely environmental explanation of IQ (C) The Flynn effect
(B) A genetic contribution to individual differences in IQ (D) Stereotype threat

Lời giải chi tiết

A stronger IQ correlation with biological parents (genetically related, but not responsible for rearing) than with adoptive parents (responsible for rearing, but not genetically related) points toward a genetic contribution to IQ, since genes are what the child shares with the biological parents despite the lack of contact. The Flynn effect concerns generational score shifts over time, and stereotype threat concerns situational performance effects — neither is what this correlation pattern demonstrates. **(B)**.

Bài tập luyện tập

Raven’s Progressive Matrices is often described as a “culture-fair” intelligence test. Explain what this means and why even such a test may not be entirely free of cultural influence.

Lời giải chi tiết

Raven’s Progressive Matrices uses abstract visual pattern-completion items rather than language-based or culturally specific content, in an attempt to measure reasoning ability with minimal dependence on a test-taker’s particular linguistic or cultural background — this is what makes it “culture-fair” relative to more heavily language- or knowledge-dependent tests. However, even this test is not entirely free of cultural influence: performance can still be affected by a test-taker’s familiarity with the general format of standardized, timed testing itself, with sitting for extended abstract reasoning tasks, and with test-taking strategies more common in some educational systems than others — factors that are themselves shaped by culture and educational opportunity, even though the item content is not explicitly language- or knowledge-based.

Bài tập luyện tập

A trained chimpanzee reliably uses a sign for “banana” whenever it wants a banana, and can combine signs such as “more” and “tickle” to request more tickling. A researcher argues this

does NOT demonstrate full human-like language. Which missing feature is most central to this argument?

- (A) The chimpanzee cannot make any sounds at all
- (B) The chimpanzee's combinations show little evidence of productive, rule-governed syntax for generating novel meanings
- (C) Chimpanzees cannot see the signs being made
- (D) The chimpanzee has too small a vocabulary to communicate anything

Lời giải chi tiết

The central scientific objection to calling ape sign use "language" in the full human sense is the apparent absence of productive **syntax** — a systematic grammatical rule system that would let the animal generate an open-ended range of genuinely novel, rule-governed combinations, the way human children spontaneously do. Learning many individual sign-meaning associations (a large vocabulary) is not disputed, but vocabulary size alone does not establish grammatical language. (B).

Bài tập luyện tập

Research comparing lifelong bilingual and monolingual adults on tasks requiring switching between competing task rules most often finds:

- (A) No difference of any kind between the two groups
- (B) A large, universal advantage for bilinguals on every cognitive task tested
- (C) A modest advantage for bilinguals on certain executive-function tasks, such as cognitive flexibility and inhibitory control
- (D) A significant disadvantage for bilinguals on all measures of executive function

Lời giải chi tiết

Research generally finds a modest bilingual advantage specifically on certain executive-function tasks — particularly those requiring cognitive flexibility (switching between competing rules) and inhibitory control (suppressing an irrelevant response) — plausibly reflecting the ongoing practice bilinguals get managing two active language systems; the effect is real but modest, and does not appear on every single executive-function measure tested. (C).

Bài tập luyện tập

Distinguish maintenance rehearsal from elaborative rehearsal, and explain which one the self-reference effect and method-of-loci mnemonic both rely on.

Lời giải chi tiết

Maintenance rehearsal is simple repetition of information in its original form, which keeps it active in short-term memory but produces relatively weak long-term retention. **Elaborative rehearsal** involves linking new information to existing knowledge or to its meaning, producing much stronger long-term retention. Both the **self-reference effect** (relating information to oneself) and the **method of loci** (linking items to a richly meaningful, familiar spatial route) work by creating meaningful associative links between new material and well-established existing knowledge — both are therefore forms of **elaborative**, not maintenance, rehearsal.

Bài tập luyện tập

A researcher records EEG activity across a full night of sleep for a healthy adult and finds four complete cycles, each showing progressively less time in slow-wave sleep (NREM 3) and progressively more time in REM sleep as the night goes on. This pattern is:

- (A) Highly unusual and suggests a sleep disorder
- (B) The typical, expected pattern across a normal night of human sleep
- (C) Evidence that the person did not enter REM sleep at all
- (D) Only seen in people who consume caffeine before bed

Lời giải chi tiết

A typical night of human sleep consists of roughly four to six 90-minute cycles, with slow-wave (NREM 3) sleep concentrated in the earlier cycles and REM periods becoming progressively longer later in the night. The pattern described is therefore the normal, expected architecture of a healthy night's sleep, not a sign of disorder. **(B).**

Bài tập luyện tập

Explain why Baddeley's working memory model is considered an improvement over simply calling short-term memory a single, undifferentiated "box," using evidence from dual-task studies.

Lời giải chi tiết

Dual-task studies show that two tasks drawing on *different* components of working memory (e.g., a verbal task using the phonological loop and a visual/spatial task using the visuospatial sketchpad) can often be performed simultaneously with only mild interference, while two tasks drawing on the *same* component (e.g., two verbal tasks, both competing for the phonological loop) interfere with each other much more strongly. A single undifferentiated "short-term memory box" model predicts that any two simultaneous mental tasks should interfere similarly, since they would be competing for the same one limited resource. The selective pattern of interference — strong within a component, weak across components — instead supports Baddeley's view that working memory is composed of several partially independent subsystems (phonological loop, visuospatial sketchpad, central executive, episodic buffer), each with its own limited capacity.

Bài tập luyện tập

Which of the following best distinguishes episodic memory from semantic memory, both of which are subtypes of explicit memory?

- (A) Episodic memory is unconscious; semantic memory is conscious
- (B) Episodic memory stores personally experienced events; semantic memory stores general facts and knowledge not tied to a specific personal experience
- (C) Episodic memory is a type of implicit memory; semantic memory is a type of procedural memory
- (D) There is no meaningful distinction between the two

Lời giải chi tiết

Episodic memory stores personally experienced events tied to a specific time and place (e.g., a particular birthday), while semantic memory stores general facts and knowledge about the world that are not tied to any specific personal experience (e.g., knowing a country's capital city). Both are explicit/declarative and therefore consciously accessible, ruling out the "unconscious" and "implicit/procedural" options. **(B)**.

Applying a cognitive bias. A hospital administrator reviewing a new surgical protocol focuses her search for information almost entirely on studies and colleagues that support adopting the protocol, while dismissing as "flawed" the handful of studies suggesting complications. When a comprehensive independent review later shows the protocol has a higher complication rate than the standard approach, she continues to defend her original decision, citing the same earlier studies. (a) Identify the two biases displayed, in order. (b) Propose one concrete procedural change to hospital decision-making that could reduce the influence of these biases in future protocol reviews.

Lời giải chi tiết

(a) The administrator's selective search for and acceptance of supporting evidence, while dismissing contradicting evidence as "flawed," illustrates **confirmation bias**. Her continued defense of the original decision even after a comprehensive independent review contradicts it illustrates **belief perseverance**.

(b) A concrete safeguard would be to require that any major protocol decision be reviewed by an independent panel that conducts a structured, pre-registered search of **all** relevant published evidence (not just evidence the original decision-maker selects), and that explicitly documents and weighs disconfirming evidence before a final decision is finalized — a process designed specifically to counteract the natural tendency toward one-sided, confirmation-biased evidence gathering.

Bài tập luyện tập

A hormone secreted by the pineal gland, promoting drowsiness as darkness falls and suppressed by morning light, is:

(A) Endorphin

(C) Acetylcholine

(B) Melatonin

(D) Dopamine

Lời giải chi tiết

Melatonin is the hormone released by the pineal gland under the regulation of the suprachiasmatic nucleus; it rises in darkness to promote drowsiness and falls with morning light exposure. Endorphins relate to pain/pleasure, acetylcholine to memory and muscle activation, and dopamine to reward and movement. **(B)**.

Bài tập luyện tập

Explain why a person who has taken a sedative-hypnotic drug (such as a barbiturate) at high doses combined with alcohol faces a significantly elevated risk of fatal respiratory depression, using the concept of depressant drugs acting on the central nervous system.

Lời giải chi tiết

Both alcohol and barbiturates are **depressants** that slow central nervous system activity, including the brainstem circuits that regulate automatic breathing. Because both drugs suppress the same class of neural activity through related (GABA-enhancing) mechanisms, combining them produces an **additive, and often synergistic (greater-than-additive), depressant effect** on the respiratory control centers of the brainstem — slowing breathing far more than either drug would alone at the same dose. At sufficiently high combined doses, this suppression can become severe enough to stop breathing altogether, which is why combining CNS depressants is especially dangerous compared with taking either one alone.

Bài tập luyện tập

A memory researcher wants to determine whether emotionally arousing images are remembered better than neutral images, and suspects the amygdala plays a causal role. Which finding would MOST strongly support a causal role for the amygdala specifically (rather than just showing that emotional memories are generally stronger)?

- | | |
|--|--|
| (A) Participants recall more details about emotional images than neutral images | substantially reduced (or absent) memory advantage for emotional over neutral images, compared to patients with intact amygdalae |
| (B) Patients with amygdala damage show a normal memory advantage for emotional over neutral images | (D) Participants report feeling more emotional while viewing the emotional images |
| (C) Patients with amygdala damage show a | |

Lời giải chi tiết

To support a specifically **causal** role for the amygdala (rather than simply confirming that emotional memories are generally better remembered), the strongest evidence would come from a comparison showing that when the amygdala is damaged, the normal emotional memory advantage is reduced or eliminated relative to people with an intact amygdala. This kind of lesion-based dissociation — removing/damaging a structure and observing the predicted function disappear — is a classic way biological psychologists establish that a structure plays a causal, not merely correlational, role. **(C)**.

Bài tập luyện tập

Identify which memory-encoding strategy is being used in each case: (a) a student repeats "the mitochondria is the powerhouse of the cell" ten times without connecting it to anything else; (b) a student imagines walking through their childhood home and mentally placing one vocabulary word in each room; (c) a student relates a new psychology concept to a personal experience from their own life.

Lời giải chi tiết

- (a) **Maintenance rehearsal** — simple repetition without elaboration, producing weak long-term retention.
- (b) The **method of loci** — a mnemonic device that anchors items to a familiar, well-organized spatial route.
- (c) The **self-reference effect** — relating new material to oneself personally, a form of elaborative

rehearsal that tends to produce strong retention.

Bài tập luyện tập

A study finds that participants recall a list of words better when tested in the same room where they studied than when tested in a different room. This illustrates:

- (A) State-dependent memory
- (B) Context-dependent memory
- (C) The misinformation effect
- (D) Source amnesia

Lời giải chi tiết

Better retrieval when the external physical environment (the room) matches between encoding and retrieval is the defining pattern of **context-dependent memory**. State-dependent memory instead concerns matching an internal physiological/emotional state (e.g., mood), not the external environment. **(B)**.

Bài tập luyện tập

Which of the following would most directly demonstrate that a memory is stored implicitly (procedurally) rather than explicitly, in a patient with severe amnesia?

- (A) The patient can recite their childhood address
- (B) The patient improves at a motor-skill task across repeated practice sessions despite reporting no memory of ever practicing it
- (C) The patient can describe, in detail, a vacation from ten years ago
- (D) The patient recognizes a photograph of a family member and states when and where it was taken

Lời giải chi tiết

Improvement on a motor/procedural task across repeated sessions, in the complete absence of any conscious/explicit memory of having practiced before, is the classic dissociation demonstrating an intact **implicit/procedural** memory system operating independently of the (in this case impaired) **explicit** memory system – exactly the pattern documented in patient H.M. The other options all involve consciously reportable (explicit) memories. **(B)**.

Bài tập luyện tập

A student argues: "Since my identical twin and I have nearly identical IQ scores, and we were raised in the same household by the same parents, this proves IQ is almost entirely genetic." Identify the flaw in this reasoning.

Lời giải chi tiết

This reasoning is flawed because identical twins raised **together** share both nearly 100% of their genes *and* a highly similar rearing environment, so a high IQ correlation between them cannot, by itself, separate the contribution of genes from the contribution of shared environment – both explanations are equally consistent with the data. To isolate the genetic contribution more cleanly, researchers instead compare identical twins reared **apart** (same genes, different environments) to fraternal twins reared **together** (different genes, similar environments), or use adoption studies comparing correlations with biological versus adoptive

parents. A single pair of identical twins reared together cannot support a strong claim about the relative size of genetic versus environmental influence.

Bài tập luyện tập

A person who has never seen or heard about a particular animal is nonetheless able to quickly judge, upon seeing it for the first time, whether it is "bird-like." This ability is best explained by which concept?

- (A) Algorithmic processing
- (B) Prototype-based categorization
- (C) The availability heuristic
- (D) Retroactive interference

Lời giải chi tiết

People readily categorize novel objects by comparing them to a stored mental **prototype** — the most typical example of a category — rather than by checking the object against a rigid list of defining features; a highly bird-like novel animal will closely resemble the "bird" prototype and be categorized quickly and confidently, even without a defining checklist. **(B)**.

Bài tập luyện tập

Explain the difference between content validity and predictive validity, and give one example of a test that could have strong content validity but weak predictive validity.

Lời giải chi tiết

Content validity concerns whether a test's items adequately sample the full range of the behavior/domain it claims to measure (e.g., a comprehensive final exam that covers every topic taught during the semester has strong content validity for "course mastery"). **Predictive validity** concerns whether test scores successfully forecast a relevant future outcome (e.g., whether the exam score predicts performance in an advanced follow-up course). A test could have strong content validity (thoroughly covering the intended material) while still having weak predictive validity if performance on that specific content, for whatever reason, does not translate into the future outcome of interest — for example, a written driving-knowledge test might thoroughly cover traffic laws (strong content validity) yet only weakly predict actual on-road driving safety (weak predictive validity), since safe driving depends heavily on skills the written test does not directly assess.

Bài tập luyện tập

Which of the following speech samples is most consistent with Wernicke's aphasia rather than Broca's aphasia?

- (A) "Want... go... store... need..." spoken slowly with visible effort
- (B) "The zibbers are flanning quite nicely by the windop today," spoken fluently and with normal intonation
- (C) Complete inability to produce any sound at all
- (D) Speech that is fluent, grammatically correct, and fully meaningful

Bài tập luyện tập

Explain why "practice makes perfect" for a skill like typing is best understood using the concept of procedural memory rather than semantic memory.

Lời giải chi tiết

Typing quickly and accurately is a learned **motor skill** performed automatically, without consciously recalling each individual keystroke rule — the defining feature of **procedural memory**, a form of implicit/nondeclarative memory. **Semantic memory** instead stores consciously accessible general facts and knowledge (e.g., knowing that "Q" and "W" are adjacent on a QWERTY keyboard), which is a separate kind of knowledge from the smooth, automatic motor execution built up through repeated typing practice. A skilled typist can execute the skill fluently while being unable to consciously state, in real time, which finger moves to which key for every letter — showing that the procedural skill and any semantic facts about the keyboard are at least partially separable.

Bài tập luyện tập

A person estimates that lottery jackpots are won relatively often because news coverage of lottery winners is frequent and memorable, even though the actual odds of winning are extremely low. This best illustrates:

- | | |
|--------------------------------------|--------------------------|
| (A) The representativeness heuristic | (C) The anchoring effect |
| (B) The availability heuristic | (D) Functional fixedness |

Lời giải chi tiết

Judging the frequency of an event (winning the lottery) by how easily examples come to mind (memorable news coverage of winners), rather than by the true statistical probability, is the defining pattern of the **availability heuristic**. (B).

Bài tập luyện tập

Summarize, in one or two sentences each, the distinct contribution of Spearman, Thurstone, Gardner, and Sternberg to theories of intelligence.

Lời giải chi tiết

Spearman proposed a single general intelligence factor (*g*) underlying performance across diverse cognitive tasks. **Thurstone** rejected a single general factor, instead identifying seven distinct primary mental abilities. **Gardner** proposed multiple, relatively independent intelligences (linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, naturalistic), each rooted in different capacities valued differently across cultures. **Sternberg** proposed a triarchic theory distinguishing analytical (academic/abstract), creative (novel-situation), and practical ("street smart") intelligence.

Bài tập luyện tập

Which pair correctly matches a memory disorder/phenomenon with its defining feature?

- (A) Anterograde amnesia — inability to recall events from before a brain injury (C) Anterograde amnesia — inability to form new explicit memories after a brain injury
- (B) Retrograde amnesia — inability to form new memories after a brain injury (D) Source amnesia — complete inability to remember any content at all

Lời giải chi tiết

Anterograde amnesia is the inability to form new (explicit) memories following a brain injury or surgery, as seen in patient H.M. **Retrograde amnesia** is instead the loss of memories from *before* the injury. Source amnesia involves remembering content correctly but misattributing its source, not a total inability to remember. (C).

Bài tập luyện tập

A student needs to memorize the order of operations in mathematics and creates the phrase "Please Excuse My Dear Aunt Sally" (Parentheses, Exponents, Multiplication, Division, Addition, Subtraction) to remember it. This is an example of:

- (A) The method of loci (C) State-dependent memory
- (B) An acronym-based mnemonic device (D) The misinformation effect

Lời giải chi tiết

Using the first letters of a list to construct a memorable phrase is a classic **acronym-based mnemonic device**, a form of elaborative encoding that imposes helpful organization on otherwise arbitrary, hard-to-remember material. (B).

Applying bias to a scenario. A hiring committee interviews a candidate for a leadership role and, immediately after the interview, one committee member remarks, "I could tell within the first thirty seconds that she would be perfect for this job — everything after that just confirmed it." The candidate is hired and later performs poorly. (a) Identify a bias that may have shaped the committee member's interview experience. (b) Explain, referencing the concept, how this bias could have caused disconfirming signals during the interview to be overlooked.

Lời giải chi tiết

- (a) The remark that everything after the first thirty seconds "just confirmed" an instant judgment is a strong indicator of **confirmation bias** shaping the remainder of the interview.
- (b) Once the interviewer formed a strong, favorable first impression within the first thirty seconds, confirmation bias would predispose them to notice and weight information consistent with "she would be perfect" (confident answers, articulate phrasing) more heavily, while overlooking, downplaying, or reinterpreting favorably any signals inconsistent with that impression (hesitations, thin answers on technical questions, vague responses about past failures) — so that by the end of the interview, the accumulated "evidence" felt overwhelmingly confirmatory even though it had been filtered through a biased lens from the very first moments.

Bài tập luyện tập

Which structure's damage would be expected to impair a person's ability to consolidate a new explicit memory of a conversation they just had, while leaving their ability to learn a new physical skill relatively intact?

- | | |
|---------------------|-----------------------------|
| (A) Wernicke's area | (C) Suprachiasmatic nucleus |
| (B) Hippocampus | (D) Broca's area |

Lời giải chi tiết

The hippocampus is necessary for consolidating new explicit/declarative memories (such as a conversation just had), while implicit/procedural learning (physical skills) relies more on other structures (e.g., cerebellum, basal ganglia) and can remain relatively intact even with hippocampal damage — the same dissociation documented in patient H.M. **(B)**.

Bài tập luyện tập

Explain why a well-designed psychology experiment testing the misinformation effect should include random assignment to the "leading question" and "neutral question" conditions, rather than letting participants choose which condition to be in.

Lời giải chi tiết

Random assignment ensures that, on average, the two groups start out equivalent on every factor that could affect memory accuracy (e.g., baseline memory ability, attentiveness, prior experience with similar videos), so that any resulting difference in later recall can be attributed specifically to the wording manipulation (leading vs. neutral question) rather than to pre-existing differences between the kinds of people who would choose each condition. If participants were allowed to self-select their condition, any observed difference in recall could instead simply reflect systematic differences between the types of people drawn to each option (a confound), making it impossible to draw a clean causal conclusion about the misinformation effect itself.

Bài tập luyện tập

A person who has learned to associate the smell of a hospital with anxiety, after several unpleasant medical visits, still feels a spike of anxiety upon smelling a similar antiseptic odor years later in an unrelated setting, without consciously recalling any specific past visit. This is best classified as:

- | | |
|---------------------|--|
| (A) Semantic memory | (C) An implicit, classically conditioned association |
| (B) Episodic memory | (D) Source amnesia |

Lời giải chi tiết

An emotional/physiological response triggered by a previously conditioned stimulus, occurring without conscious recollection of the specific learning episodes that produced it, is a classically conditioned **implicit** association — a subtype of nondeclarative long-term memory. **(C)**.

Bài tập luyện tập

Explain why Karl Duncker's candle problem is considered a classic demonstration of functional fixedness rather than simply a demonstration that some problems are "harder" than others.

Lời giải chi tiết

The candle problem is specifically designed so that the objectively necessary materials (the box) are already present in the room; the difficulty is not a lack of resources or excessive logical complexity, but a **perceptual/conceptual block**: participants who see the box already serving its ordinary function as a tack container struggle to mentally "repurpose" it as a candle platform. This selectively targets the specific cognitive obstacle of functional fixedness — seeing an object only in terms of its familiar use — rather than testing general problem difficulty, which is why manipulating how the tacks are presented (inside vs. beside the box) reliably changes solution rates without changing the objective difficulty of the underlying spatial/mechanical problem at all.

Bài tập luyện tập

Which best describes the relationship between algorithms, heuristics, and the concept of cognitive "shortcuts"?

- (A) Algorithms are a type of heuristic that always works quickly
- (B) Heuristics are mental shortcuts that trade guaranteed accuracy for speed; algorithms trade speed for guaranteed accuracy
- (C) Algorithms and heuristics are simply two names for the same cognitive process
- (D) Heuristics are only used by trained experts, while algorithms are only used by novices

Lời giải chi tiết

Heuristics are fast, low-effort mental shortcuts that do not guarantee a correct answer, while algorithms are slower, step-by-step procedures that are guaranteed to produce a correct answer if followed correctly — the two represent a genuine trade-off between speed and guaranteed accuracy, not two labels for the same process, and both are used by novices and experts alike depending on the task and time pressure involved. **(B)**.

Bài tập luyện tập

A child who has never been explicitly taught the grammatical rule for forming past tense nonetheless produces a novel sentence such as "I goed to the park" (an overregularized error, rather than something heard verbatim from an adult). Which theoretical position does this observation most strongly support?

- (A) Skinner's behaviorist view that language is learned entirely through imitation of adult speech
- (B) Chomsky's nativist view that children apply innate grammatical rules productively, even to generate forms they were never directly taught
- (C) The linguistic relativity hypothesis
- (D) The activation-synthesis theory of dreaming

Lời giải chi tiết

A child producing a novel, rule-based error like "goed" (correctly applying the regular "add -ed" past-tense rule to an irregular verb) could not have simply imitated this exact form from adult speech, since adults do not say "goed." This is strong evidence that the child has internalized a productive **grammatical rule** and is applying it generatively — support for Chomsky's nativist emphasis on an innate capacity for extracting and applying grammatical structure, a pattern that pure imitation-based behaviorist accounts struggle to explain as easily. **(B)**.

Bài tập luyện tập

Explain why a positive correlation between hours of sleep and standardized test performance in a sample of high school students does not, by itself, prove that more sleep causes better test performance.

Lời giải chi tiết

A correlation only establishes that two variables (sleep hours and test performance) tend to rise and fall together; it cannot, by itself, establish the **direction of causation** or rule out other explanations. It remains possible that better test performance (or the underlying traits that produce it, such as strong time-management skills) allows students to also get more sleep (reverse causation), or that some third variable — such as lower stress levels, fewer outside work obligations, or a more supportive home environment — independently causes both more sleep and better test performance (a confound), without either variable directly causing the other. Establishing a causal claim would require a controlled experiment that manipulates sleep duration directly (e.g., randomly assigning students to sleep-extension versus normal-sleep conditions) while holding other factors constant.

Bài tập luyện tập

A person who has taken a stimulant drug such as cocaine repeatedly over several months now needs a substantially larger dose to achieve the euphoric effect they once got from a much smaller amount. This change is best explained by:

(A) Withdrawal

(C) Psychological dependence only, with no physiological change

(B) Tolerance

(D) The framing effect

Lời giải chi tiết

Needing progressively larger doses over repeated use to achieve the same effect is the defining feature of **tolerance**, reflecting physiological adaptation (e.g., changes in receptor number or sensitivity) to repeated drug exposure. Withdrawal instead refers to symptoms that appear when the drug is stopped, not to the dose needed while still using it. **(B)**.

Bài tập luyện tập

Explain, using the concept of levels of processing, why writing a summary of a textbook chapter in your own words tends to produce better long-term retention than simply highlighting sentences in the original text.

Lời giải chi tiết

Writing a summary in one's own words requires actively engaging with the **meaning** of the material — deciding what is most important, restating ideas in different words, and connecting them to what one already understands — which is a form of **deep/semantic processing** in Craik and Lockhart's levels-of-processing framework. Highlighting sentences, by contrast, requires only a shallow, largely visual/structural judgment about which lines look important, with little to no engagement with underlying meaning. Because deeper (semantic) processing produces more durable long-term retention than shallow (structural) processing, summarizing in one's own words should produce meaningfully better retention than highlighting alone, even though highlighting can feel like a more active study strategy.

Bài tập luyện tập

A defense attorney argues that because the eyewitness in a trial was extremely confident and provided vivid, detailed testimony, the identification must be accurate. Using the concepts of reconstructive memory and the confidence-accuracy relationship, evaluate this argument.

Lời giải chi tiết

This argument overstates what confidence and vividness can establish. Memory is **reconstructive** — each retrieval rebuilds the memory from fragments, general knowledge, and expectations, and can incorporate post-event information (e.g., media coverage, conversations with others, or suggestive questioning during the investigation) without the witness being aware that any alteration has occurred. Furthermore, research on the **confidence-accuracy relationship** shows that subjective confidence is only weakly related to actual accuracy, and confidence can be inflated after the fact by feedback unrelated to the accuracy of the original identification. A vivid, confidently delivered account is therefore not, by itself, strong evidence of accuracy; it is entirely possible for an eyewitness to be highly confident, detailed, and sincere while still being factually wrong, which is precisely why corroborating physical evidence and properly conducted (e.g., sequential) identification procedures matter so much in legal contexts.

Research design. A cognitive psychologist wants to determine whether items processed semantically (for meaning) are recalled better than items processed structurally (for appearance), following Craik and Lockhart's levels-of-processing framework. Participants study a list of 40 words under one of two randomly assigned instructions: Group A judges whether each word is printed in capital or lowercase letters (structural processing); Group B judges whether each word fits meaningfully into a given sentence (semantic processing). Neither group is told a memory test will follow. After the study phase, both groups take an identical, unannounced recall test. (a) Identify the independent and dependent variables. (b) Explain why the test is described as "unannounced," and what this design feature controls for. (c) State the result predicted by the levels-of-processing framework.

Lời giải chi tiết

(a) The **independent variable** is the type of processing instruction given during study (structural: judging letter case, vs. semantic: judging sentence fit). The **dependent variable** is the number of words correctly recalled on the later test.

(b) The test is unannounced (an **incidental learning** design) so that participants in both groups

process the words only according to the assigned instruction, without any group gaining an advantage from deliberately trying to memorize the words for an anticipated test; this isolates the effect of processing depth itself, rather than confounding it with differences in conscious memorization effort between groups.

(c) Consistent with the levels-of-processing framework, Group B (semantic/deep processing) should recall significantly more words than Group A (structural/shallow processing), even though neither group intentionally tried to memorize the list and both groups spent the same amount of time studying the same words.

Development and Learning

Mục tiêu Unit: Các mô hình nghiên cứu phát triển (nghiên cứu dọc, nghiên cứu cắt ngang, nghiên cứu kết hợp và hiệu ứng thể hệ); phát triển trước sinh và trẻ sơ sinh (các giai đoạn thai kỳ, chất gây quái thai, hội chứng nhiễm độc rượu bào thai, phản xạ bẩm sinh, khí chất); lý thuyết phát triển nhận thức của Piaget (sơ đồ nhận thức, đồng hoá, điều ứng, bốn giai đoạn phát triển) và lý thuyết văn hoá – xã hội của Vygotsky (vùng phát triển gần nhất, giàn giáo hỗ trợ); sự gắn bó (Harlow, Lorenz, Bowlby, Ainsworth) và các phong cách nuôi dạy con (Baumrind); tám giai đoạn phát triển tâm lý – xã hội của Erikson; lý thuyết phát triển đạo đức của Kohlberg và phê phán của Gilligan; tuổi vị thành niên và tuổi trưởng thành (dậy thì, bản ngã vị thành niên, trí thông minh kết tinh và trí thông minh linh hoạt, các giai đoạn đối diện với cái chết của Kübler-Ross); điều kiện hoá cổ điển (Pavlov, Watson) và điều kiện hoá thao tác (Thorndike, Skinner, các loại củng cố/trừng phạt, lịch trình củng cố, ràng buộc sinh học của Garcia và Breland, học tập nhận thức của Tolman và Köhler); và học tập qua quan sát theo lý thuyết nhận thức xã hội của Bandura.

3.1 Foundations of Developmental Psychology

3.1.1 Nature, Nurture, and the Study of Change Over the Lifespan

Developmental psychology studies how people change — physically, cognitively, socially, and emotionally — across the entire lifespan, from conception to death. A question that runs through every topic in this unit is the **nature–nurture** question: how much of development is driven by heredity (genes, biological maturation, prenatal biology) versus by environment (family, culture, learning experiences, life events)? Contemporary developmental psychology treats this less as an either/or debate and more as a question of **interaction**: genes set a range of possible outcomes and give rise to a predisposed temperament or capacity, while environment and experience determine which of those possibilities is actually expressed, and how. A child's genetically influenced temperament, for example, shapes how caregivers respond, which in turn shapes further development — nature and nurture are constantly feeding back into each other rather than acting independently.

Nature × nurture interaction

Virtually no developmental outcome is purely genetic or purely environmental. Height is heavily genetic but still depends on nutrition; intelligence test scores show strong heritability but are also moved substantially by schooling, enrichment, and stress; even something as biologically rooted as language acquisition requires exposure to a language community during a sensitive window. The modern default assumption in developmental psychology is **gene–environment interaction**, not a simple percentage split between the two.

GIẢI THÍCH TIẾNG VIỆT

VN

Câu hỏi **bản chất (di truyền) và nuôi dưỡng (môi trường)** — tiếng Anh gọi là *nature vs. nurture* — không còn được xem là một cuộc tranh luận “cái nào quan trọng hơn”, mà là câu hỏi về cách hai yếu tố này **tương tác** với nhau. Gen quy định một phạm vi khả năng, còn môi trường quyết định khả năng nào trong phạm vi đó thực sự được biểu hiện ra. Ví dụ, khí chất bẩm sinh của một đứa trẻ (yếu tố di truyền) ảnh hưởng đến cách cha mẹ đối xử với trẻ (yếu tố môi trường), và cách đối xử đó lại tiếp tục định hình sự phát triển của trẻ — đây là một vòng phản hồi hai

chiều liên tục, không phải một chiều.

3.1.2 Continuity versus Discontinuity; Stability versus Change

A second organizing debate concerns *how* development unfolds. The **continuity view** holds that development is a gradual, cumulative process — like a smoothly rising ramp — in which the same underlying processes operate throughout life and change occurs in small, continuous increments. The **discontinuity (stage) view** holds that development instead proceeds through a series of distinct, qualitatively different **stages**, each with its own characteristic way of thinking, feeling, or behaving — like climbing a staircase, where a person is in one stage or another, with a relatively abrupt shift between them. Several of the major theories in this unit (Piaget, Erikson, Kohlberg) are classic **stage theories**: they claim that everyone progresses through the same fixed sequence of qualitatively distinct stages, usually in the same order, though not necessarily at the same rate or age.

A related question is **stability versus change**: do the personality traits and dispositions we show early in life persist essentially unchanged into adulthood (stability), or do people meaningfully change with experience over time (change)? Longitudinal research on temperament and personality generally finds *moderate* long-term stability — early individual differences are correlated with, but do not rigidly determine, later personality — alongside genuine potential for change driven by life experience.

GIẢI THÍCH TIẾNG VIỆT

VN

Có hai quan điểm lớn về **cách** phát triển diễn ra: **quan điểm liên tục (continuity)** cho rằng phát triển là một quá trình tích lũy dần dần, giống như đi lên một con dốc thoải thoải; **quan điểm gián đoạn / theo giai đoạn (discontinuity/stage)** cho rằng phát triển trải qua các **giai đoạn** khác biệt về chất, giống như leo cầu thang — mỗi giai đoạn có cách suy nghĩ/hành vi đặc trưng riêng, và sự chuyển tiếp giữa các giai đoạn diễn ra khá đột ngột. Các lý thuyết lớn trong chương này (Piaget, Erikson, Kohlberg) đều là **lý thuyết giai đoạn**. Ngoài ra còn có câu hỏi về **tính ổn định và sự thay đổi**: các đặc điểm tâm lý sớm có tiếp tục kéo dài đến khi trưởng thành hay không — nghiên cứu cho thấy có sự ổn định vừa phải, không tuyệt đối.

3.1.3 The Lifespan Perspective

Paul **Baltes** articulated a broad set of assumptions, now widely shared among developmental psychologists, for how development across the entire lifespan should be understood.

The **lifespan perspective** on development holds that development is: (1) **lifelong** — meaningful change continues from conception through old age, not just during childhood; (2) **multidimensional** — physical, cognitive, social, and emotional development are separate but interacting dimensions, not one single unified track; (3) **multidirectional** — some abilities increase while others decrease at the very same age (e.g., crystallized intelligence rising while fluid intelligence falls in later adulthood); (4) **plastic** — many capacities retain some potential for change and compensation throughout life, though the degree of plasticity varies; and (5) **contextual** — development is shaped by the interaction of the individual's biology, unique life history, and historical/cultural context, so no two people's developmental pathways are identical even when the broad sequence of milestones is similar.

GIẢI THÍCH TIẾNG VIỆT

VN

Quan điểm trọn đời (lifespan perspective) của Paul Baltes tổng hợp các giả định nền tảng của tâm lý học phát triển hiện đại: phát triển là (1) **suốt đời** — thay đổi có ý nghĩa tiếp diễn từ khi sinh đến khi già, không chỉ ở thời thơ ấu; (2) **đa chiều** — các mặt thể chất, nhận thức, xã hội, cảm xúc là những chiều riêng biệt nhưng có tương tác với nhau; (3) **đa hướng** — một số khả

năng tăng lên trong khi khả năng khác giảm đi ở cùng một giai đoạn tuổi (VD trí thông minh kết tinh tăng khi trí thông minh linh hoạt giảm ở tuổi già); (4) **có tính dẻo** — nhiều khả năng vẫn có thể thay đổi/bù đắp được trong suốt đời, dù mức độ khác nhau; và (5) **chịu ảnh hưởng bối cảnh** — phát triển được định hình bởi sự tương tác giữa sinh học, lịch sử cá nhân, và bối cảnh lịch sử – văn hoá, nên không có hai người nào có con đường phát triển hoàn toàn giống nhau.

3.1.4 Research Designs in Developmental Psychology

Because developmental psychologists want to describe how people change with **age**, they face a special methodological challenge: age is always tangled together with the historical period a person was born into. Three research designs handle this differently.

Longitudinal, cross-sectional, and cross-sequential designs

A **longitudinal design** studies the *same group* of participants repeatedly over an extended period of time (months, years, or decades), tracking actual change within individuals as they age.

A **cross-sectional design** studies *different age groups* of participants all at a single point in time, comparing them to estimate age-related differences.

A **cross-sequential (sequential) design** combines both approaches: it follows multiple cohorts (age groups) longitudinally over time, while also making cross-sectional comparisons among them at each testing point.

Design	Strengths	Weaknesses
Longitudinal	Tracks true individual change over time; no cohort confound	Expensive, slow (can take decades); participant attrition (drop-out); practice effects from repeated testing
Cross-sectional	Fast, inexpensive, no attrition problem	Confounded by cohort effects — differences between groups may reflect generational/historical experience, not age itself
Cross-sequential	Can separate true age effects from cohort effects; faster than a single full-span longitudinal study	Still complex and resource-intensive; some attrition still possible within each cohort

A **cohort effect** is a difference between age groups that is caused by the different historical/-cultural experiences of the generations being compared, rather than by the aging process itself. Cohort effects are the single biggest threat to interpreting cross-sectional developmental data.

Ví dụ mẫu · Diagnosing a cohort effect

A researcher compares vocabulary test scores of 20-year-olds and 70-year-olds tested in the same year and concludes that vocabulary declines sharply with age. A colleague objects that the 70-year-olds grew up with far less access to formal schooling than the 20-year-olds did. Explain the flaw in the original conclusion and propose a better design.

The original design is **cross-sectional**: it compares different people of different ages at one moment in time. The colleague is pointing out a likely **cohort effect** — the two groups differ not only in age but in the historical era (and associated educational opportunities) they grew up in, so the observed score gap could reflect generational differences in schooling rather than a true effect of aging on vocabulary. A stronger design would be **longitudinal**: test the *same group* of people at age 20 and follow them until age 70, so that any change observed is

unconfounded by cohort, or a **cross-sequential** design that follows several cohorts over time and can statistically separate age effects from cohort effects.

(!) **Lỗi thường gặp:** Học sinh thường nhầm **nguyên cứu cắt ngang (cross-sectional)** là "nhanh hơn nên chính xác hơn" — thực ra nó dễ bị sai lệch bởi **hiệu ứng thế hệ (cohort effect)**: sự khác biệt giữa các nhóm tuổi có thể do họ lớn lên trong bối cảnh lịch sử/văn hoá khác nhau, chứ không hẳn do tuổi tác. Ngược lại, đừng nghĩ **nguyên cứu dọc (longitudinal)** là hoàn hảo — nó tốn thời gian, chi phí cao, và bị ảnh hưởng bởi việc người tham gia bỏ cuộc giữa chừng (attrition) cũng như hiệu ứng luyện tập do làm bài kiểm tra nhiều lần. **Nguyên cứu kết hợp (cross-sequential)** được thiết kế để khắc phục nhược điểm của cả hai, bằng cách theo dõi nhiều nhóm tuổi (cohort) qua thời gian.

3.1.5 Behavioral Genetics: Twin and Adoption Studies

How do developmental psychologists actually estimate the relative contributions of genes and environment to a given trait? **Behavioral genetics** approaches this using two classic comparison designs. **Twin studies** compare **monozygotic (identical) twins**, who share essentially 100% of their genes, with **dizygotic (fraternal) twins**, who share on average only about 50% of their genes (the same as any full siblings) — if identical twins resemble each other on some trait *more* than fraternal twins do, that extra resemblance is attributed to shared genetics rather than shared environment, since both twin types typically share a similarly close-in-time family environment. **Adoption studies** compare adopted children to both their biological parents (with whom they share genes but not a rearing environment) and their adoptive parents (with whom they share a rearing environment but not genes) — resemblance to biological parents implicates genetic influence, while resemblance to adoptive parents implicates environmental influence.

A **heritability estimate** describes what proportion of the *variation* in a trait *within a specific population* is statistically associated with genetic differences among individuals in that group. Heritability is not a fixed property of a trait in general, and it says nothing about any single individual — a trait can be highly heritable within a population and still be substantially changeable by altering the environment for everyone in that population (for example, a population-wide improvement in nutrition can raise everyone's height without changing the heritability estimate for height at all).

(!) **Lỗi thường gặp:** Một sai lầm nghiêm trọng và có thật trong lịch sử là dùng hệ số di truyền trong một nhóm dân số để suy luận sai lệch về nguyên nhân của sự **khác biệt giữa hai nhóm dân số khác nhau** (VD giữa hai quốc gia, hai chủng tộc, hai tầng lớp kinh tế – xã hội). Hệ số di truyền được tính trong một bối cảnh môi trường cụ thể; nó KHÔNG cho biết nguyên nhân của sự khác biệt **giữa** các nhóm sống trong môi trường khác nhau — sự khác biệt giữa nhóm hoàn toàn có thể do khác biệt môi trường (dinh dưỡng, giáo dục, cơ hội kinh tế) chứ không phải do gen, ngay cả khi đặc điểm đó có hệ số di truyền cao trong mỗi nhóm riêng lẻ. Việc diễn giải sai khái niệm này từng bị lợi dụng để cổ vũ cho các tư tưởng phân biệt chủng tộc/thuyết ưu sinh (eugenics) — một lý do quan trọng khiến các nhà tâm lý học luôn nhấn mạnh giới hạn diễn giải của hệ số di truyền.

GIẢI THÍCH TIẾNG VIỆT

VN

Di truyền học hành vi (behavioral genetics) dùng hai thiết kế nghiên cứu chính để tách ảnh hưởng của gen và môi trường: **nguyên cứu cặp song sinh (twin studies)** — so sánh **song sinh**

cùng trứng (monozygotic) (chung gần 100% gen) với **song sinh khác trứng (dizygotic)** (chung khoảng 50% gen, như anh chị em thường) — nếu song sinh cùng trứng giống nhau về một đặc điểm **hiều hơn** song sinh khác trứng, sự khác biệt đó được quy cho yếu tố di truyền; và **nguyên cứu nhận con nuôi (adoption studies)** — so sánh trẻ được nhận nuôi với cả cha mẹ ruột (chung gen, không chung môi trường) và cha mẹ nuôi (chung môi trường, không chung gen). **Hệ số di truyền (heritability)** chỉ cho biết tỷ lệ **biến thiên** của một đặc điểm **trong một nhóm dân số cụ thể** có liên quan đến sự khác biệt về gen — nó **KHÔNG** áp dụng cho một cá nhân riêng lẻ, và một đặc điểm có hệ số di truyền cao vẫn có thể thay đổi được nếu môi trường của toàn bộ nhóm dân số đó thay đổi.

A newer field, **epigenetics**, adds further nuance to the nature–nurture interaction: environmental factors (stress, nutrition, toxin exposure, even prenatally) can chemically attach or remove small molecular tags on DNA that turn genes “on” or “off” without altering the underlying genetic sequence itself. This means the environment can directly shape *which* of an organism’s genes are actively expressed, and some of these epigenetic changes have been shown to persist and potentially even be passed on to offspring — a mechanism that helps explain how environmental experience can leave a lasting, biologically embedded mark on development, further blurring any sharp line between “nature” and “nurture.”

GIẢI THÍCH TIẾNG VIỆT

VN

Di truyền biểu sinh (epigenetics) là một hướng nghiên cứu mới cho thấy các yếu tố môi trường (stress, dinh dưỡng, tiếp xúc độc tố, kể cả từ trong bụng mẹ) có thể gắn/loại bỏ các “nhãn” hoá học nhỏ trên DNA, làm một gen được “bật” hoặc “tắt” mà **KHÔNG** làm thay đổi trình tự gen. Điều này có nghĩa là môi trường có thể trực tiếp ảnh hưởng đến việc gen nào được biểu hiện ra, và một số thay đổi biểu sinh này có thể tồn tại lâu dài, thậm chí truyền lại cho thế hệ sau — cho thấy ranh giới giữa “bản chất” và “nuôi dưỡng” càng trở nên mờ nhạt hơn nữa.

3.1.6 Critical Periods and Sensitive Periods

A related concept that recurs throughout this unit — in prenatal development, in imprinting, and in language acquisition — is the idea of a developmental time window during which an organism is especially receptive to a particular kind of environmental input or especially vulnerable to a particular disruption.

Critical period vs. sensitive period

A **critical period** is a relatively rigid, narrow window during which a specific kind of development *must* occur for it to occur normally at all; outside that window, the normal developmental outcome becomes difficult or impossible to achieve (Lorenz’s imprinting in geese, discussed later in this unit, is the classic example — imprinting essentially cannot occur outside its brief critical period).

A **sensitive period** is a somewhat broader, more flexible window during which an organism is especially *responsive* to a particular kind of input, and learning during that window tends to be easier or more complete — but the same learning often remains possible, just more effortful, outside that window (human language acquisition is the classic example: children acquire language much more easily and completely than adults do, but adults can still learn new languages, just typically with more effort and a stronger accent).

GIẢI THÍCH TIẾNG VIỆT

VN

Giai đoạn nhạy cảm/tới hạn (critical period) là một khoảng thời gian hẹp và khá cứng nhắc mà nếu không có kích thích phù hợp trong khoảng đó, sự phát triển bình thường sẽ khó hoặc

không thể xảy ra được nữa (VD: hiện tượng in vết ở ngỗng của Lorenz — nếu không xảy ra trong giai đoạn tới hạn ngắn sau khi nở, con vật sẽ khó hình thành gắn bó theo cách đó). **Giai đoạn nhạy cảm (sensitive period)** là một khoảng thời gian rộng hơn và linh hoạt hơn, khi sinh vật đặc biệt dễ tiếp thu một loại kích thích nào đó, nhưng việc học vẫn có thể xảy ra (khó hơn) ngay cả sau khi giai đoạn đó kết thúc (VD: trẻ nhỏ học ngôn ngữ dễ và trọn vẹn hơn người lớn, nhưng người lớn vẫn học được ngôn ngữ mới, chỉ tốn nhiều công sức hơn).

3.2 Prenatal Development and the Newborn

3.2.1 Stages of Prenatal Development

Prenatal development from conception to birth (roughly 38–40 weeks in humans) is traditionally divided into three periods.

The three prenatal periods

Germinal period (conception through week 2): the fertilized egg (zygote) undergoes rapid cell division as it travels down the fallopian tube, forming a blastocyst that implants in the uterine wall.

Embryonic period (weeks 3–8): now called an **embryo**, the developing organism forms the foundation of virtually every major organ and body structure (organogenesis) — the heart begins to beat, and limb buds, facial features, and the neural tube appear. Because so many structures are being laid down for the first time, this is the period of **greatest vulnerability** to disruption.

Fetal period (week 9 until birth): now called a **fetus**, the organism grows dramatically in size and its organ systems continue to mature and become functional, reaching **viability** (the ability to survive outside the womb, with medical support) by roughly 22–24 weeks.

GIẢI THÍCH TIẾNG VIỆT

VN Ba giai đoạn phát triển trước sinh: **giai đoạn mầm (germinal)** — 2 tuần đầu, hợp tử phân chia nhanh và làm tổ trong tử cung; **giai đoạn phôi (embryonic)** — tuần 3 đến 8, hầu hết các cơ quan chính bắt đầu hình thành (tim, chi, mặt, ống thần kinh) nên đây là giai đoạn **dễ tổn thương nhất**; **giai đoạn thai (fetal)** — từ tuần 9 đến khi sinh, cơ thể tăng trưởng mạnh về kích thước và các cơ quan hoàn thiện chức năng, đạt **khả năng sống sót độc lập (viability)** vào khoảng tuần 22–24 nếu có hỗ trợ y tế.

3.2.2 Teratogens and Fetal Alcohol Syndrome

A **teratogen** is any external agent — a drug, chemical, virus, or form of radiation — that can cross the placental barrier and cause harm to the developing embryo or fetus, ranging from minor physical anomalies to severe structural defects, intellectual disability, or pregnancy loss, depending on the agent, the dose, and critically, the **timing** of exposure (with the embryonic period generally the most sensitive). Common examples include alcohol, nicotine, certain prescription and recreational drugs, and infections such as rubella.

Fetal alcohol syndrome (FAS)

Fetal alcohol syndrome is caused by heavy maternal alcohol consumption during pregnancy and is one of the leading preventable causes of intellectual disability. Alcohol crosses the placenta freely and is directly toxic to developing neurons. Characteristic features include distinctive facial abnormalities (small, widely spaced eye openings, a thin upper lip, a smooth or flattened philtrum — the groove between nose and upper lip), growth deficiencies, and lasting

central nervous system impairment (intellectual disability, attention and learning difficulties, poor impulse control).

Ví dụ mẫu · Reasoning about timing of teratogen exposure

A pregnant woman is exposed to a teratogenic virus during week 6 of pregnancy, and a different pregnant woman is exposed to the identical virus during week 30. Predict which exposure is more likely to produce severe structural birth defects, and explain why using the concept of prenatal periods.

The week-6 exposure falls within the **embryonic period** (weeks 3–8), when the foundations of nearly every major organ system are being laid down for the first time (organogenesis); a disruption at this stage can derail the basic formation of a structure, producing severe or irreversible structural defects. The week-30 exposure falls within the **fetal period**, when major organs are already formed and are instead maturing and growing; a teratogen at this later stage is more likely to affect growth, organ function, or brain development than to cause major structural malformations. This is why the embryonic period is described as the period of greatest vulnerability to teratogens.

GIẢI THÍCH TIẾNG VIỆT

VN

Chất gây quái thai (teratogen) là bất kỳ tác nhân bên ngoài nào (thuốc, hoá chất, virus, phóng xạ) có thể đi qua nhau thai và gây hại cho phôi/thai — mức độ tổn hại phụ thuộc vào loại tác nhân, liều lượng, và đặc biệt là **thời điểm** tiếp xúc (giai đoạn phôi là nhạy cảm nhất). **Hội chứng nhiễm độc rượu bào thai (fetal alcohol syndrome)** do người mẹ uống nhiều rượu trong thai kỳ gây ra, là một trong những nguyên nhân hàng đầu có thể phòng ngừa được của khuyết tật trí tuệ — biểu hiện gồm các bất thường trên khuôn mặt (khe mắt nhỏ, môi trên mỏng, nhân trung phẳng), chậm tăng trưởng, và các vấn đề thần kinh lâu dài (khuyết tật trí tuệ, khó tập trung, kém kiểm soát xung động).

3.2.3 Newborn Reflexes

Human newborns arrive with a repertoire of automatic, unlearned motor responses — **reflexes** — that promote survival and feeding before voluntary motor control develops.

Reflex	Trigger and response	Function
Rooting	Stroking the infant's cheek → infant turns head toward the touch, mouth open	Helps infant locate the nipple/bottle for feeding
Sucking	Object placed in the infant's mouth → rhythmic sucking	Enables feeding
Grasping (palmar)	Object pressed into the infant's palm → fingers curl tightly around it	Reflexive precursor to voluntary grasping
Moro (startle)	Loud noise or sudden loss of support → arms fling outward, then pull back in as if embracing	Ancestral protective/clinging response

GIẢI THÍCH TIẾNG VIỆT

VN

Trẻ sơ sinh có sẵn một số **phản xạ bẩm sinh**: **phản xạ tìm vú (rooting)** — quay đầu về phía má bị chạm; **phản xạ bú (sucking)** — mút khi có vật đưa vào miệng; **phản xạ nắm (grasping)** — nắm chặt vật đặt vào lòng bàn tay; **phản xạ giật mình (Moro/startle)** — khi giật mình hoặc mất điểm tựa đột ngột, trẻ dang rộng hai tay rồi co lại như đang ôm. Đây đều là các hành vi **không học được**, có vai trò sinh tồn (bú mẹ, bám vú) và thường biến mất khi hệ thần kinh trưởng thành.

hơn, được thay thế bằng vận động có chủ ý.

These reflexes are not merely curiosities — pediatricians use them as basic screening tools for neurological health. Because each reflex is expected to appear at birth and then disappear on a fairly predictable timetable as higher brain centers mature and take over voluntary control (most of the reflexes above fade within the first 4–6 months), a reflex that is **absent** when it should be present, **asymmetric** (present on only one side of the body), or **persists well past** its expected disappearance window can be an early clinical sign of a neurological or developmental problem, prompting further medical evaluation.

GIẢI THÍCH TIẾNG VIỆT

VN

Các phản xạ sơ sinh không chỉ là hiện tượng thú vị mà còn được bác sĩ nhi khoa dùng làm công cụ **sàng lọc thần kinh** cơ bản. Vì mỗi phản xạ có một khung thời gian xuất hiện và biến mất khá dự đoán được (đa số các phản xạ trên biến mất trong 4–6 tháng đầu khi vùng não cao hơn trưởng thành và kiểm soát vận động có chủ ý), việc một phản xạ **không xuất hiện** khi cần, xuất hiện **không đối xứng** (chỉ một bên cơ thể), hoặc **tồn tại quá lâu** so với thời điểm dự kiến biến mất có thể là dấu hiệu sớm của vấn đề thần kinh hoặc phát triển, cần được bác sĩ đánh giá thêm.

3.2.4 Temperament: Early, Biologically-Based Individual Differences

Temperament refers to a person's characteristic, biologically based style of emotional reactivity and self-regulation — how intensely and how quickly a person reacts to stimulation, and how easily they settle. Temperament appears very early in infancy (evidence of substantial genetic and prenatal-biological influence) and shows moderate stability into later personality.

Thomas and Chess: three temperament types

Based on their New York Longitudinal Study, Alexander **Thomas** and Stella **Chess** classified infants into three broad temperament categories:

Easy (roughly 40% of infants): regular routines (eating, sleeping), generally positive mood, adapts readily to new situations.

Difficult (roughly 10%): irregular routines, intense and often negative emotional reactions, slow to adapt to new situations or people.

Slow-to-warm-up (roughly 15%): low activity level, initially withdraws from or reacts mildly negatively to new stimuli, but gradually warms up and adjusts with repeated, low-pressure exposure.

(The remaining infants show a mixed profile that does not fit neatly into a single category.)

Ví dụ mẫu · Classifying temperament from behavior

A 6-month-old infant cries loudly when placed in an unfamiliar room, refuses to be comforted by a stranger, has an irregular sleep schedule, and takes much longer than other infants to calm down after being upset. Classify this infant's temperament and explain your reasoning.

This profile matches the **difficult** temperament type: irregular biological routines (sleep schedule), intense negative emotional reactions (loud, hard-to-soothe crying), and slow adaptation to new situations (the unfamiliar room, the stranger). This is distinct from a slow-to-warm-up infant, who would show a milder, more passive withdrawal rather than intense distress, and would gradually adjust with repeated gentle exposure rather than remain difficult to soothe.

(!) **Lỗi thường gặp:** Đừng nhầm khí chất "**chậm thích nghi**" (**slow-to-warm-up**) với khí chất "**khó**" (**difficult**). Trẻ khó tính phản ứng **mạnh và tiêu cực**, khó dỗ dành; trẻ chậm thích nghi phản ứng **nhẹ nhàng, thụ động** (rút lui, né tránh) trước tình huống mới nhưng dần dần thích nghi tốt nếu được tiếp xúc từ từ, không bị ép buộc. Ngoài ra, khí chất được xem là có **nền tảng sinh học** (di truyền), xuất hiện rất sớm và tương đối ổn định — nhưng "tương đối ổn định" không có nghĩa là **không thể thay đổi**; môi trường nuôi dưỡng phù hợp ("độ khớp tốt" — goodness of fit) vẫn có thể điều chỉnh cách khí chất biểu hiện ra ngoài.

GIẢI THÍCH TIẾNG VIỆT

VN

Khí chất (temperament) là phong cách phản ứng cảm xúc và tự điều chỉnh mang tính bẩm sinh, xuất hiện rất sớm ở trẻ sơ sinh. Thomas và Chess phân loại trẻ thành ba nhóm: **dễ (easy)** — sinh hoạt đều đặn, tâm trạng tích cực, thích nghi nhanh; **khó (difficult)** — sinh hoạt thất thường, phản ứng cảm xúc mạnh và tiêu cực, khó thích nghi; **chậm thích nghi (slow-to-warm-up)** — ít hoạt động, ban đầu rút lui trước cái mới nhưng dần dần thích nghi được. Khí chất được xem là nền tảng sinh học sớm nhất của những khác biệt cá nhân trong tính cách sau này.

A related, more physiologically oriented line of temperament research by Jerome **Kagan** distinguished **high-reactive** infants — who show strong physiological arousal (elevated heart rate, distress) and behavioral wariness when confronted with novel stimuli — from **low-reactive** infants — who remain physiologically calm and behaviorally unbothered by the same novel stimuli. High-reactive infants are more likely, though not certain, to develop a shy, inhibited temperament style later in childhood, illustrating again how an early, biologically-rooted disposition can predispose (without rigidly determining) a later personality trend.

GIẢI THÍCH TIẾNG VIỆT

VN

Jerome Kagan nghiên cứu khí chất theo hướng sinh lý học nhiều hơn: trẻ **phản ứng mạnh (high-reactive)** có phản ứng sinh lý mạnh (tim đập nhanh, khó chịu) và né tránh hành vi trước kích thích lạ, còn trẻ **phản ứng yếu (low-reactive)** vẫn bình tĩnh trước kích thích tương tự. Trẻ phản ứng mạnh có xu hướng (không chắc chắn) phát triển khí chất nhút nhát, ức chế hơn khi lớn lên — một lần nữa cho thấy đặc điểm sinh học bẩm sinh sớm có thể **định hướng** (không quyết định tuyệt đối) tính cách sau này.

3.3 Cognitive Development: Piaget and Vygotsky

3.3.1 Piaget's Building Blocks: Schemas, Assimilation, and Accommodation

Jean **Piaget** proposed that children are not passive recipients of knowledge but active "little scientists" who construct their understanding of the world through their own actions on it. The basic unit of that understanding is the **schema**: a mental framework or concept that organizes and interprets information (e.g., a toddler's schema for "dog" — a furry, four-legged animal that barks).

Assimilation and accommodation

Assimilation: interpreting a new experience in terms of an *existing* schema, fitting the new information into what one already understands, without changing the schema itself (e.g., a toddler with a schema for "dog" calls a cat "dog" too).

Accommodation: *modifying* an existing schema (or creating a new one) because new information does not fit — the schema itself changes to better match reality (e.g., the toddler learns that the smaller, meowing animal is a different category, "cat," and adjusts their schemas accordingly).

Piaget viewed cognitive development as a continual interplay of assimilation and accommoda-

tion, driven by a motivation to resolve the discomfort of a mismatch between one's schemas and one's experience (**disequilibrium**), restoring a state of **equilibrium**.

GIẢI THÍCH TIẾNG VIỆT

VN

Sơ đồ nhận thức (schema) là một khuôn khổ tinh thần giúp tổ chức và diễn giải thông tin. **Đồng hoá (assimilation)** là khi trẻ tiếp nhận thông tin mới bằng cách "nhét" nó vào sơ đồ đã có sẵn, không làm thay đổi sơ đồ (VD: gọi mọi con vật bốn chân là "chó"). **Điều ứng (accommodation)** là khi trẻ phải **thay đổi** sơ đồ cũ hoặc tạo sơ đồ mới vì thông tin mới không khớp với sơ đồ hiện có (VD: nhận ra mèo khác chó và tạo sơ đồ "mèo" riêng). Piaget cho rằng phát triển nhận thức là quá trình liên tục đồng hoá và điều ứng để đạt lại trạng thái **cân bằng (equilibrium)** sau khi trải nghiệm mới gây ra sự "mất cân bằng" (disequilibrium) với hiểu biết cũ.

3.3.2 Piaget's Four Stages of Cognitive Development

Piaget proposed that all children pass through four qualitatively distinct stages, in the same fixed order, though the exact age of transition varies somewhat between individuals.

Stage	Approx. ages	Key characteristics / milestones
Sensorimotor	Birth–2 yrs	Understanding the world through senses and motor actions; develops object permanence (objects continue to exist when out of sight), typically emerging around 8 months; stranger anxiety emerges alongside it
Preoperational	2–7 yrs	Symbolic thought (language, pretend play) emerges; egocentrism (difficulty taking another's perspective); centration (focusing on one dimension at a time); lacks conservation ; animism (attributing life/feelings to inanimate objects); thinking is not yet logical/reversible
Concrete operational	7–11 yrs	Achieves conservation and reversibility of thought; can perform classification and seriation (ordering objects along a dimension); logical reasoning, but only about concrete, tangible objects and situations
Formal operational	12 yrs+	Capable of abstract and hypothetical-deductive reasoning; can reason systematically about possibilities that are not concretely present, test hypotheses, and think about abstract concepts (justice, infinity, morality)

GIẢI THÍCH TIẾNG VIỆT

VN

Bốn giai đoạn phát triển nhận thức theo Piaget: (1) **Giai đoạn cảm giác – vận động (sensorimotor, 0–2 tuổi)** – trẻ khám phá thế giới qua giác quan và vận động, đạt được **tính thường tồn của đối tượng (object permanence)** – hiểu rằng vật vẫn tồn tại dù không nhìn thấy; (2) **Giai đoạn tiền thao tác (preoperational, 2–7 tuổi)** – xuất hiện tư duy biểu tượng (ngôn ngữ, trò chơi giả vờ), nhưng còn **duy kỷ (egocentrism)**, **tập trung một chiều (centration)**, chưa có **tính bảo toàn (conservation)**, và có xu hướng **gán sự sống cho vật vô tri (animism)**; (3) **Giai đoạn thao tác cụ thể (concrete operational, 7–11 tuổi)** – đạt được tính bảo toàn, khả năng đảo ngược tư duy, phân loại, nhưng chỉ tư duy logic được với vật cụ thể; (4) **Giai đoạn thao tác hình thức (formal operational, từ 12 tuổi)** – tư duy trừu tượng, suy luận giả định – suy diễn có hệ thống.

Sensorimotor stage in depth

During the **sensorimotor stage**, infants come to know the world entirely through direct sensory experience and motor action — looking, grasping, mouthing, and manipulating objects. The single most important achievement of this stage is **object permanence**: the understanding that objects continue to exist even when they cannot be seen, heard, or touched. Very young infants act as though an object hidden from view (e.g., a toy covered by a blanket) simply ceases to exist; Piaget observed object permanence typically emerging around 8 months of age, as infants begin actively searching for hidden objects. The emergence of object permanence is closely tied to the appearance of **stranger anxiety** — distress around unfamiliar people — since the infant can now recognize a caregiver as a distinct, continuously existing person and notice their absence.

GIẢI THÍCH TIẾNG VIỆT

VN

Giai đoạn cảm giác – vận động đạt cột mốc quan trọng nhất là **tính thường tồn của đối tượng**: trẻ hiểu rằng đồ vật vẫn tồn tại kể cả khi không còn nhìn thấy (thường xuất hiện khoảng 8 tháng tuổi). Trước mốc này, trẻ hành xử như thể "khuất mắt = không còn tồn tại". Ngay khi khả năng này xuất hiện, trẻ cũng bắt đầu có **lo âu người lạ (stranger anxiety)**, vì giờ đây trẻ nhận ra người chăm sóc là một cá thể tồn tại liên tục và cảm nhận được sự vắng mặt của họ.

Even after object permanence first emerges, Piaget documented a curious, systematic error, the **A-not-B error**: an infant who has repeatedly and successfully found a hidden toy at location A will, even after watching an experimenter visibly hide the same toy at a new location B, often still search first at the old location A. Piaget interpreted this as evidence that the infant's understanding of object permanence is still fragile and closely tied to the infant's own previously rewarded motor habit (reaching toward A), rather than being a fully abstract, location-independent understanding — full flexibility in tracking an object's actual current location develops somewhat later within the sensorimotor stage.

GIẢI THÍCH TIẾNG VIỆT

VN

Piaget còn ghi nhận một lỗi đặc trưng gọi là **lỗi A-không-B (A-not-B error)**: trẻ đã nhiều lần tìm thấy đồ chơi bị giấu ở vị trí A, nhưng dù được nhìn thấy đồ chơi bị giấu ở vị trí B mới, trẻ vẫn thường tìm lại ở vị trí A trước. Piaget cho rằng điều này cho thấy hiểu biết về tính thường tồn của đối tượng ở giai đoạn đầu còn **chưa hoàn thiện**, còn gắn liền với thói quen vận động đã được "thường" trước đó (vớ tay về phía A), chứ chưa phải là một hiểu biết trừu tượng, độc lập với vị trí cụ thể — khả năng này linh hoạt hơn ở giai đoạn sau của thời kỳ cảm giác – vận động.

Preoperational stage in depth

In the **preoperational stage**, children develop the capacity for **symbolic thought** — using words, images, and pretend play to represent objects and ideas that are not physically present — a dramatic cognitive advance over the sensorimotor stage. However, their thinking is still limited in several specific ways. **Egocentrism** is the difficulty seeing a situation from a perspective other than one's own; in Piaget's classic three-mountain task, preoperational children typically insist that a doll looking at a model mountain range from a different angle sees exactly the same view they do. **Centration** is the tendency to focus on just one salient dimension of a situation while ignoring others. This directly produces a failure of **conservation**: the understanding that a quantity remains the same despite changes in its outward appearance. Finally, **animism** is the tendency to attribute life, intentions, and feelings to inanimate objects (e.g., believing that the sun is "happy" or that a chair that hurt them "was being mean").

Ví dụ mẫu · Analyzing a conservation task

A researcher shows a 5-year-old two identical short, wide glasses filled with the same amount of water; the child agrees they have the same amount. The researcher then pours the water from one glass into a taller, narrower glass while the child watches. When asked which glass now has more water, the child confidently points to the tall glass. Explain this response using Piagetian concepts, and predict how a 9-year-old would respond to the same task.

The 5-year-old is in the **preoperational stage** and lacks **conservation** of liquid quantity: because the water level is higher in the tall glass, the child **centrates** on this one visually salient dimension (height) and ignores the compensating change in width, concluding that the amount of water has changed even though nothing was added or removed. The child's thinking is not yet **reversible** — they cannot mentally "pour the water back" to recognize that the transformation could be undone. A 9-year-old, having reached the **concrete operational stage**, would correctly recognize that the amount of water is unchanged, reasoning that the increased height is compensated for by decreased width, and could mentally reverse the pouring action to confirm this.

GIẢI THÍCH TIẾNG VIỆT

VN

Trong giai đoạn tiền thao tác, trẻ đạt được tư duy biểu tượng nhưng còn ba hạn chế đặc trưng: **duy kỷ (egocentrism)** — khó hình dung góc nhìn của người khác (thí nghiệm "ba ngọn núi" của Piaget); **tập trung một chiều (centration)** — chỉ chú ý một khía cạnh nổi bật và bỏ qua các khía cạnh khác, dẫn đến việc chưa có **tính bảo toàn (conservation)** — chưa hiểu rằng số lượng/khối lượng không đổi dù hình dạng bên ngoài thay đổi (VD: đổ nước từ ly thấp – rộng sang ly cao – hẹp, trẻ tưởng lượng nước tăng lên); và **gán sự sống cho vật vô tri (animism)**. Nguyên nhân sâu xa là tư duy của trẻ giai đoạn này chưa **đảo ngược được (reversible)**.

Concrete operational stage in depth

Children entering the **concrete operational stage** overcome the limitations of the preoperational stage: they achieve **conservation** across quantity, number, mass, and volume, and their thought becomes **reversible** — they can mentally reverse an operation (e.g., "pour the water back") to reason about it logically. They also master **classification** (grouping objects by shared properties, including hierarchical categories) and **seriation** (ordering objects along a dimension, such as arranging sticks from shortest to longest), along with **transitive inference** (if $A > B$ and $B > C$, then $A > C$). The crucial limitation of this stage is that logical operations can only be applied to **concrete**, tangible objects and directly experienced situations — not to purely abstract or hypothetical content.

Ví dụ mẫu · Classification, seriation, and transitive inference

A 9-year-old is given a mixed pile of wooden beads (some red, some blue; some large, some small) and asked to sort them "any way that makes sense." She creates a hierarchy: first "red" and "blue" groups, then subdivides each into "large" and "small" subgroups. Separately, told that Stick A is longer than Stick B, and Stick B is longer than Stick C, she immediately and correctly concludes that Stick A must be longer than Stick C, without needing to see the sticks side by side. Identify the two concrete operational abilities demonstrated.

Sorting the beads into a hierarchy of categories and subcategories (color, then size within color) demonstrates **classification**: the ability to group objects by shared properties, including nested/hierarchical categories. Correctly inferring that Stick A $>$ Stick C from $A > B$ and $B > C$, without direct comparison, demonstrates **transitive inference** — a form of logical reason-

ing about ordered relationships that becomes reliable in the concrete operational stage. Both abilities reflect the stage's newly acquired capacity for organized, reversible logical operations, though note that both examples still involve concrete, tangible objects (beads, sticks) rather than purely abstract content.

Formal operational stage in depth

In the **formal operational stage**, adolescents and adults become capable of **abstract reasoning** – thinking about concepts with no physical referent (justice, freedom, infinity) – and **hypothetical-deductive reasoning**: the ability to generate and systematically test hypotheses about purely hypothetical situations ("if X were true, then Y should follow"), rather than being limited to reasoning about concrete objects in front of them. This is the reasoning style needed for advanced scientific thinking, algebra, and abstract moral or political reasoning; not all individuals reliably reach or consistently use formal operational thought in every domain, even in adulthood.

GIẢI THÍCH TIẾNG VIỆT

VN

Giai đoạn **thao tác cụ thể (7–11 tuổi)**: trẻ đạt tính bảo toàn, tư duy đảo ngược được, biết phân loại và sắp xếp thứ tự, suy luận bắc cầu ($A > B, B > C \Rightarrow A > C$) – nhưng chỉ áp dụng logic được với vật/tình huống **cụ thể**, chưa suy luận trừu tượng tốt. Giai đoạn **thao tác hình thức (từ 12 tuổi)**: có khả năng tư duy trừu tượng và suy luận giả định – suy diễn có hệ thống – đặt giả thuyết và kiểm chứng một cách logic ngay cả với tình huống không có thật, đây là nền tảng cho tư duy khoa học và toán học nâng cao.

(!) Lỗi thường gặp: Đừng nghĩ rằng cứ qua 12 tuổi là tự động và luôn luôn suy luận theo kiểu **thao tác hình thức**. Trên thực tế, nhiều thanh thiếu niên và cả người lớn **KHÔNG** sử dụng tư duy trừu tượng, giả định – suy diễn một cách nhất quán ở mọi lĩnh vực – khả năng này phụ thuộc nhiều vào việc được giáo dục và luyện tập (VD toán học, khoa học), và một người có thể suy luận rất trừu tượng trong lĩnh vực quen thuộc nhưng lại suy luận cụ thể, thiếu hệ thống trong lĩnh vực xa lạ. Tuổi 12 chỉ là mốc **có khả năng** bắt đầu đạt được giai đoạn này, không phải một sự kiện tự động xảy ra cho tất cả mọi người.

3.3.3 Modern Critiques of Piaget's Theory

Later research using more sensitive, less verbally demanding methods has challenged the precise timing and the strict stage-like structure of Piaget's theory. Using **violation-of-expectation** procedures (measuring how long infants look at physically impossible versus possible events), researchers such as Renée Baillargeon found evidence that infants may understand aspects of object permanence months earlier than Piaget's original estimate of 8 months – Piaget's methods, which required infants to actively search for a hidden object, likely underestimated infants' underlying knowledge because they also demanded motor skills that develop later. Similarly, when conservation and perspective-taking tasks are simplified or made more familiar/relevant to children, children often demonstrate the relevant competence earlier than Piaget's stage would predict. Overall, most current developmental psychologists view cognitive development as considerably more **continuous and gradual**, and more variable across different cognitive domains, than Piaget's discrete, universal, and abrupt stage transitions suggested – while still crediting Piaget's broad sequence and core insights (that children actively construct understanding, and that reasoning changes qualitatively with age) as fundamentally sound.

A related line of critique comes from **core knowledge theorists** such as Elizabeth Spelke, who argue that infants are born with a small set of specialized, domain-specific "core knowledge" systems –

for example, rudimentary expectations about objects (they do not blink in and out of existence, they move along continuous paths), about number (very young infants can discriminate small quantities), and about basic physical causality – that operate earlier and more independently of one another than Piaget's theory of a single, general-purpose cognitive structure unfolding uniformly across all domains would predict. This "domain-specific" perspective, along with the broader **neo-Piagetian** movement, has led most contemporary researchers to treat cognitive development as a set of somewhat separate, unevenly developing cognitive skills, rather than one uniform stage governing a child's thinking across every domain simultaneously.

(!) Lỗi thường gặp: Đừng viết rằng nghiên cứu hiện đại đã "bác bỏ hoàn toàn" lý thuyết của Piaget – điều bị điều chỉnh là **thời điểm** đạt được các cột mốc (trẻ sơ sinh có thể hiểu tính thường tồn của đối tượng sớm hơn Piaget ước tính) và **tính chất giai đoạn cứng nhắc** (phát triển có vẻ liên tục/dần dần hơn, và khác nhau tùy lĩnh vực nhận thức, hơn là chuyển giai đoạn đột ngột và đồng bộ trên mọi lĩnh vực). Trình tự tổng quát các giai đoạn và ý tưởng cốt lõi rằng trẻ **chủ động xây dựng** hiểu biết của mình vẫn được công nhận rộng rãi.

GIẢI THÍCH TIẾNG VIỆT

VN

Các nghiên cứu hiện đại (VD sử dụng phương pháp "vi phạm kỳ vọng" – violation-of-expectation – đo thời gian trẻ nhìn vào sự kiện phi vật lý) cho thấy trẻ sơ sinh có thể hiểu tính thường tồn của đối tượng **sớm hơn nhiều** so với mốc 8 tháng mà Piaget ước tính, có lẽ vì phương pháp gốc của Piaget (yêu cầu trẻ chủ động tìm kiếm vật bị giấu) đòi hỏi kỹ năng vận động phát triển muộn hơn khả năng nhận thức thực sự. Nhìn chung, phát triển nhận thức hiện được xem là **liên tục và dần dần hơn**, khác nhau tùy theo từng lĩnh vực, hơn là các giai đoạn rời rạc, đột ngột như Piaget mô tả ban đầu.

3.3.4 Vygotsky's Sociocultural Theory

Lev **Vygotsky**, a contemporary of Piaget, offered a contrasting emphasis: while Piaget pictured the child largely as a solitary scientist discovering the world through independent action, Vygotsky argued that cognitive development is fundamentally a **social and cultural** process – children develop higher-order thinking primarily through guided interaction with more skilled members of their culture (parents, teachers, older peers), and through the internalization of cultural tools, above all **language**.

Zone of proximal development and scaffolding

The **zone of proximal development (ZPD)** is the gap between what a learner can accomplish *independently* and what that same learner can accomplish *with guidance* from a more knowledgeable other (a teacher, parent, or more skilled peer). Learning is most productive when it is targeted within this zone – neither so easy that no growth occurs, nor so hard that the learner cannot make sense of it even with help.

Scaffolding is the temporary support a more knowledgeable other provides to help a learner accomplish a task within their ZPD – hints, prompts, demonstrations, or structured questions – which is progressively withdrawn as the learner becomes more competent and can perform the task independently.

Ví dụ mẫu · Applying ZPD and scaffolding

A child cannot yet solve a jigsaw puzzle alone but can complete it successfully with a parent who points out corner pieces and groups pieces by color. Over several sessions, the parent gives fewer and fewer hints, until the child eventually completes similar puzzles alone. Identify the ZPD and the scaffolding in this example, and explain what should happen to the scaffolding

over time according to Vygotsky's theory.

The child's **zone of proximal development** for this puzzle task is the gap between "cannot solve the puzzle alone" and "can solve it with the parent's guidance" — this zone is where learning is actively occurring. The parent's hints (pointing out corner pieces, grouping by color) are **scaffolding**: temporary support tailored to what the child can almost, but not quite, do alone. Consistent with Vygotsky's theory, the scaffolding should be **gradually withdrawn** as the child's competence grows, until the previously guided skill becomes part of what the child can do independently — at which point a new, more advanced ZPD opens up for the next skill.

Piaget vs. Vygotsky, in brief: Piaget emphasized universal, largely solitary discovery-based stages driven by the child's own action on the physical world; Vygotsky emphasized culturally and socially specific development driven by guided interaction with more skilled others and by language as a tool for thought. Piaget saw language as following from cognitive development; Vygotsky saw language (including children's "private speech" — talking to oneself aloud while problem-solving) as actively *driving* cognitive development.

GIẢI THÍCH TIẾNG VIỆT

VN

Vygotsky nhấn mạnh **yếu tố xã hội – văn hoá** trong phát triển nhận thức, khác với Piaget (nhấn mạnh trẻ tự khám phá một mình). **Vùng phát triển gần nhất (zone of proximal development – ZPD)** là khoảng cách giữa những gì trẻ tự làm được và những gì trẻ làm được **khi có sự hỗ trợ** từ người có kỹ năng hơn (cha mẹ, giáo viên, bạn giỏi hơn). **Giàn giáo hỗ trợ (scaffolding)** là sự hỗ trợ tạm thời (gợi ý, hướng dẫn) trong vùng ZPD, được **giảm dần** khi trẻ tự làm được nhiều hơn. Vygotsky xem **ngôn ngữ** là công cụ then chốt thúc đẩy tư duy, trong khi Piaget xem ngôn ngữ chỉ là kết quả đi theo sau sự phát triển nhận thức.

Vygotsky proposed that children's language development passes through an intermediate stage of **private speech**: audible self-talk (a preschooler narrating "put the red block here... no, the blue one") that gradually becomes quieter and, by roughly school age, is internalized as silent **inner speech** — the wordless mental "voice" adults use to guide their own thinking and self-regulation. Vygotsky viewed private speech not as a meaningless habit to be discouraged, but as direct behavioral evidence of language actively organizing and directing a child's thought and problem-solving in real time, consistent with his broader claim that language is a driving engine of cognitive development rather than a mere byproduct of it.

GIẢI THÍCH TIẾNG VIỆT

VN

Vygotsky cho rằng ngôn ngữ của trẻ trải qua giai đoạn **ngôn ngữ riêng tư (private speech)**: trẻ tự nói ra miệng để hướng dẫn hành động của chính mình (VD vừa xếp hình vừa tự nói "đặt khối đỏ vào đây... không, khối xanh"), sau đó dần trở nên thầm lặng và được nội tâm hoá thành **ngôn ngữ nội tâm (inner speech)** — "giọng nói" thầm trong đầu mà người lớn dùng để tự điều chỉnh suy nghĩ. Vygotsky xem ngôn ngữ riêng tư là bằng chứng hành vi trực tiếp cho thấy ngôn ngữ đang chủ động tổ chức và định hướng tư duy của trẻ, không chỉ là một thói quen vô nghĩa cần loại bỏ.

3.4 Social and Emotional Development: Attachment

3.4.1 Harlow's Rhesus Monkey Studies: Contact Comfort

Before the mid-20th century, many psychologists assumed infants become attached to caregivers simply because caregivers provide food (a "cupboard-love" account). Harry **Harlow's** experiments

with infant rhesus monkeys challenged this directly. Harlow raised infant monkeys with two artificial "surrogate mothers": a bare wire cylinder that dispensed milk, and a soft cylinder covered in terrycloth that provided no milk at all. Across many hours of observation, the infant monkeys spent the overwhelming majority of their time clinging to the soft cloth mother, visiting the wire mother only briefly to feed before returning to the cloth mother for comfort — especially when frightened.

Harlow's central finding: attachment is driven far more by **contact comfort** (the soothing, secure feeling of touching something soft and warm) than by the mere provision of food. Infant monkeys raised in total isolation, without any surrogate, went on to show severe and lasting social and emotional deficits (extreme fearfulness, poor social skills, difficulty forming later attachments), demonstrating the necessity of early contact and social interaction for healthy development.

GIẢI THÍCH TIẾNG VIỆT

VN

Thí nghiệm của **Harlow** trên khỉ rhesus con bác bỏ quan điểm cho rằng gắn bó chỉ hình thành vì mẹ cung cấp thức ăn. Khỉ con được nuôi với hai "mẹ giả": một "mẹ" khung dây thép có sữa, và một "mẹ" bọc vải nhung mềm không có sữa. Khỉ con dành phần lớn thời gian ôm ấp "mẹ vải", chỉ đến "mẹ dây thép" để bú rồi quay lại ngay với "mẹ vải" để tìm cảm giác an toàn — đặc biệt khi sợ hãi. Kết luận: **sự đụng chạm êm ái (contact comfort)** quan trọng hơn việc cho ăn trong việc hình thành gắn bó. Khỉ con bị nuôi cô lập hoàn toàn (không có "mẹ" nào) sau này có những khiếm khuyết xã hội – cảm xúc nghiêm trọng và lâu dài.

Follow-up work by Harlow and colleagues found that the cloth surrogate, while far better than the wire surrogate or no surrogate at all, still could not fully substitute for a real, responsive caregiver: monkeys raised only with cloth surrogates (with no opportunity for normal interaction with other live monkeys) still grew up showing lasting deficits in social and mating behavior, and were often unusually aggressive or fearful around other monkeys as adults. This showed that contact comfort was a necessary, but not fully sufficient, ingredient of healthy attachment and social development — normal social development also appears to require some opportunity for responsive, reciprocal interaction, not merely a soft object to cling to. Notably, when isolated monkeys were later given extended structured time with well-adjusted younger "monkey therapists," some of the social deficits could be partially reversed, suggesting a degree of **plasticity** even after early deprivation — consistent with the lifespan perspective's claim that development retains some capacity for change and compensation.

3.4.2 Lorenz and Imprinting

Konrad **Lorenz** studied attachment-like behavior in birds, particularly graylag geese. He found that goslings form an immediate, rapid, and largely irreversible attachment — **imprinting** — to the first moving object they encounter shortly after hatching, normally their mother, but which Lorenz showed could just as easily be Lorenz himself (or even an inanimate moving object). Imprinting occurs only during a narrow **critical period** shortly after hatching; outside that window, the same bonding process does not occur.

GIẢI THÍCH TIẾNG VIỆT

VN

In vết (imprinting) do Konrad Lorenz nghiên cứu trên ngỗng xám: ngỗng con sẽ gắn bó gần như ngay lập tức và không thể đảo ngược với vật thể di chuyển đầu tiên mà chúng nhìn thấy sau khi nở — thường là ngỗng mẹ, nhưng Lorenz chứng minh rằng ngỗng con cũng có thể "in vết" với chính ông hoặc một vật vô tri di động. Hiện tượng này chỉ xảy ra trong một **giai đoạn nhạy cảm (critical period)** ngắn ngay sau khi nở — ngoài khoảng thời gian đó, quá trình gắn bó này không còn xảy ra theo cách tương tự.

3.4.3 Bowlby's Attachment Theory

John **Bowlby** synthesized ethological observations (like Lorenz's and Harlow's) with clinical work on children separated from caregivers to propose that human infants are **biologically predisposed** to form an attachment to a primary caregiver, because proximity to a protective adult had clear survival value across human evolutionary history. Bowlby proposed that early attachment experiences form an **internal working model** — a mental template for what relationships are like — that a person carries forward and applies, often unconsciously, to later relationships throughout life.

GIẢI THÍCH TIẾNG VIỆT

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Bowlby cho rằng trẻ sơ sinh có **bản năng sinh học** thúc đẩy gắn bó với người chăm sóc chính, vì việc ở gần một người bảo vệ có giá trị sống còn trong quá trình tiến hoá. Trải nghiệm gắn bó sớm hình thành nên **mô hình hoạt động nội tâm (internal working model)** — một "khuôn mẫu" tâm lý về các mối quan hệ — mà con người mang theo và áp dụng (thường không ý thức được) vào các mối quan hệ sau này trong đời.

Building directly on Bowlby's internal working model concept, researchers Cindy **Hazan** and Phillip **Shaver** extended attachment theory into adulthood, proposing that the same broad attachment styles observed in infancy tend to reappear as characteristic patterns in adult romantic relationships: adults with a secure style tend to find it relatively easy to get close to romantic partners and trust them; adults with an avoidant style tend to feel uncomfortable with too much closeness and value independence, sometimes at the expense of intimacy; and adults with an anxious/ambivalent style tend to crave high levels of closeness while also worrying intensely that a partner does not truly love them or might leave. This link is understood as a **correlational tendency**, not an unbreakable rule — a person's attachment style can and does shift with significant relationship experiences over the lifespan, consistent with the lifespan perspective's emphasis on lifelong plasticity.

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Dựa trên khái niệm mô hình hoạt động nội tâm của Bowlby, **Hazan và Shaver** mở rộng lý thuyết gắn bó sang **các mối quan hệ tình cảm ở tuổi trưởng thành**: người có phong cách gắn bó **an toàn** thường dễ gần gũi và tin tưởng đối tác; người có phong cách **né tránh** thường không thoải mái khi quá gần gũi, coi trọng sự độc lập (đôi khi đánh đổi bằng sự thân mật); người có phong cách **lo âu/mâu thuẫn** thường rất muốn gần gũi nhưng cũng lo lắng nhiều về việc đối tác không thực sự yêu mình hoặc có thể rời bỏ mình. Đây chỉ là một **xu hướng tương quan**, không phải quy luật tuyệt đối — phong cách gắn bó của một người vẫn có thể thay đổi qua những trải nghiệm quan hệ quan trọng trong đời.

3.4.4 Ainsworth's Strange Situation and Attachment Classifications

Mary **Ainsworth** developed the **Strange Situation**, a structured laboratory procedure for assessing the quality of an infant's attachment to a caregiver. An infant (typically 12–18 months old) is observed in a room through a standardized sequence of episodes: playing with toys, the caregiver present; a stranger enters; the caregiver leaves the infant with the stranger; the caregiver returns; and so on. Researchers focus especially on how the infant uses the caregiver as a secure base for exploring, how distressed the infant becomes at separation, and — most diagnostically — how the infant responds when the caregiver **returns**.

Attachment style	Behavior in the Strange Situation	Associated pattern
Secure	Explores freely using caregiver as a secure base; distressed at separation; greets caregiver warmly and is easily comforted at reunion	Caregiver typically sensitive/consistently responsive
Insecure-avoidant	Shows little distress at separation; actively avoids or ignores caregiver at reunion	Caregiver often unresponsive/dismissive of infant's needs
Insecure-resistant/ambivalent	Very distressed at separation; at reunion, seeks contact but angrily resists comfort (clingy yet upset)	Caregiver often inconsistently responsive
Disorganized	Confused, contradictory, or apprehensive behavior at reunion (e.g., approaching then freezing)	Often associated with frightening or maltreating caregiving

Ví dụ mẫu · Interpreting Strange Situation behavior

During the reunion episode of the Strange Situation, Infant A runs to the caregiver, is quickly comforted, and returns to playing; Infant B barely reacts to the caregiver's return and continues playing alone without approaching her; Infant C runs toward the caregiver but then angrily pushes her away and continues crying, difficult to soothe. Classify each infant's attachment style.

Infant A shows secure attachment: distress at separation followed by quick, effective comfort at reunion, then a return to confident exploration. **Infant B shows insecure-avoidant attachment:** minimal reaction to the caregiver's departure or return, actively avoiding rather than seeking contact — consistent with a history of caregiver unresponsiveness that has taught the infant not to expect comfort. **Infant C shows insecure-resistant/ambivalent attachment:** the infant clearly wants contact (running toward the caregiver) but simultaneously resists and is angered by it, remaining hard to soothe — consistent with a history of inconsistent caregiving, where the infant cannot predict whether comfort will be available.

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Tình huống lạ (Strange Situation) của Ainsworth quan sát hành vi trẻ khi mẹ rời đi và quay lại, đặc biệt chú ý phản ứng **lúc đoàn tụ**. **Gắn bó an toàn (secure):** trẻ buồn khi mẹ rời đi nhưng dễ được dỗ dành và tiếp tục khám phá khi mẹ quay lại. **Gắn bó né tránh (insecure-avoidant):** trẻ ít phản ứng, né tránh mẹ ngay cả khi mẹ quay lại. **Gắn bó chống đối/mâu thuẫn (insecure-resistant/ambivalent):** trẻ rất đau khổ khi mẹ rời đi, nhưng khi mẹ quay lại thì vừa muốn gần vừa giận dữ chống đối, khó dỗ. **Gắn bó vô tổ chức (disorganized):** hành vi mâu thuẫn, hoang mang, thường liên quan đến việc bị ngược đãi hoặc chăm sóc đáng sợ.

Persistent, severe disruption of normal attachment formation — most often associated with the disorganized pattern and with a history of extreme neglect, abuse, or repeated changes of primary caregiver (as seen, for example, in some children raised in severely under-resourced institutional settings) — can develop into a diagnosable clinical condition, **reactive attachment disorder**, marked by a persistent failure to form normal, selective attachment bonds to any caregiver at all. This is a useful reminder that attachment classifications from the Strange Situation describe normal variation along a spectrum, while reactive attachment disorder describes a much rarer, more extreme clinical outcome tied to profoundly disrupted early caregiving.

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Khi việc hình thành gắn bó bị gián đoạn nghiêm trọng và kéo dài — thường liên quan đến kiểu

gắn bó vô tổ chức và lịch sử bị bỏ bê, ngược đãi, hoặc thay đổi người chăm sóc chính liên tục (VD một số trẻ được nuôi trong cơ sở tập trung thiếu nguồn lực nghiêm trọng) — có thể dẫn đến một rối loạn tâm lý có thể chẩn đoán được gọi là **rối loạn gắn bó phản ứng (reactive attachment disorder)**, đặc trưng bởi việc trẻ không hình thành được gắn bó chọn lọc bình thường với bất kỳ người chăm sóc nào. Cần phân biệt: các kiểu gắn bó trong Tình huống lạ mô tả **biến thể bình thường**, còn rối loạn gắn bó phản ứng là một **kết quả lâm sàng hiếm gặp và nghiêm trọng hơn** nhiều, gắn với việc chăm sóc sớm bị gián đoạn cực độ.

3.4.5 Baumrind's Parenting Styles

Diana **Baumrind** identified distinct patterns of parenting by crossing two dimensions: **demandingness** (how much control and maturity a parent expects) and **responsiveness/warmth** (how much a parent is attuned and emotionally supportive). A fourth style, **uninvolved/neglectful** parenting, was added later by researchers extending Baumrind's framework.

Style	Key features	Typical child outcomes
Authoritarian	High demands, low warmth; strict, rigid rules; expects obedience without explanation ("because I said so")	Obedient but often anxious, lower self-esteem, less socially skilled
Authoritative	High demands, high warmth; sets clear, reasonable rules and explains them; responsive to child's needs	Generally best outcomes: socially competent, high self-esteem, self-reliant
Permissive	Low demands, high warmth; few rules or consequences; very indulgent	Often impulsive, poor self-control, may struggle with authority
Uninvolved/neglectful	Low demands, low warmth; emotionally detached, minimal engagement	Worst outcomes: attachment problems, poor self-regulation, low achievement

Ví dụ mẫu · Identifying a parenting style

A parent sets a firm rule that homework must be finished before screen time, explains the reasoning to the child, listens to the child's objections, and adjusts the plan slightly when the child has a legitimate scheduling conflict — but never simply drops the rule. Identify the parenting style and predict likely outcomes.

This is **authoritative** parenting: demands are high (a firm, consistently enforced rule) but so is responsiveness/warmth (explaining reasoning, listening, and flexibly adjusting to legitimate concerns while still maintaining the underlying expectation). Baumrind's research associates this style with the most favorable child outcomes: higher self-esteem, better self-regulation, and stronger social competence, compared to authoritarian (high demand, low warmth), permissive (low demand, high warmth), or uninvolved (low demand, low warmth) parenting.

(!) Lỗi thường gặp: Đừng nhầm **authoritarian (độc đoán)** với **authoritative (uy quyền/quyết đoán có giải thích)** — hai từ tiếng Anh rất giống nhau nhưng ý nghĩa khác hẳn. Cha mẹ **độc đoán (authoritarian)** đòi hỏi cao nhưng ít ấm áp/giải thích ("vì tôi nói vậy"); cha mẹ **uy quyền (authoritative)** cũng đòi hỏi cao nhưng có sự ấm áp, lắng nghe, và giải thích lý do — đây là phong cách thường gắn với kết quả tốt nhất ở trẻ, **KHÔNG** phải phong cách dễ dãi (permissive).

(!) Lỗi thường gặp: Một cặp dễ nhầm khác là **dễ dãi (permissive)** và **thờ ơ/bỏ bê (uninvolved/neglectful)** — cả hai đều có mức đòi hỏi thấp (ít quy tắc, ít kỳ vọng), nhưng khác nhau hoàn toàn ở mức **độ ấm áp/đáp ứng**. Cha mẹ dễ dãi vẫn **ấm áp, quan tâm**, chỉ là không đặt ra

giới hạn hay kỳ vọng rõ ràng cho con; cha mẹ thờ ơ/bỏ bê thì **cả đòi hỏi và ấm áp đều thấp** — ít tham gia, ít quan tâm về mặt cảm xúc. Đây là lý do phong cách thờ ơ/bỏ bê gắn với kết quả xấu nhất trong bốn phong cách, còn dễ dãi thường chỉ dẫn đến vấn đề tự kiểm soát, không nghiêm trọng như các vấn đề gắn bó và điều chỉnh cảm xúc ở phong cách thờ ơ/bỏ bê.

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Baumrind xác định các **phong cách nuôi dạy con** dựa trên hai trục: **mức độ đòi hỏi (demandingness)** và **mức độ đáp ứng/ấm áp (responsiveness)**. **Độc đoán (authoritarian)**: đòi hỏi cao, ấm áp thấp — trẻ dễ vâng lời nhưng tự ti, lo âu. **Uy quyền (authoritative)**: đòi hỏi cao, ấm áp cao — kết quả tốt nhất, trẻ tự tin, có kỹ năng xã hội. **Dễ dãi (permissive)**: đòi hỏi thấp, ấm áp cao — trẻ dễ bốc đồng, thiếu tự kiểm soát. **Thờ ơ/bỏ bê (uninvolved/neglectful)**: đòi hỏi thấp, ấm áp thấp — kết quả xấu nhất, trẻ dễ gặp vấn đề gắn bó và điều chỉnh cảm xúc.

3.4.6 Attachment and Parenting Styles Across Cultures

Cross-cultural replications of the Strange Situation (surveyed in meta-analyses by researchers such as Marinus van IJzendoorn) find that **secure attachment is the most common classification in every culture studied**, consistent with Bowlby's claim that the drive to form an attachment is a universal, biologically based feature of human infancy. At the same time, the *relative* rates of insecure-avoidant versus insecure-resistant/ambivalent attachment vary somewhat across cultures, plausibly reflecting differing cultural norms around independence, physical closeness, and appropriate responses to a child's distress — a reminder that attachment theory's broad framework appears universal, while some specific behavioral norms it is measured against were originally standardized on Western samples. Baumrind's parenting-style research shows a similar pattern: authoritative parenting is associated with positive outcomes across a wide range of cultural groups studied, but the *strength* of that association, and the outcomes linked to authoritarian parenting specifically, can vary by cultural context — for example, some research finds that authoritarian-style expectations are linked to less negative outcomes in cultural contexts where such expectations are the norm and are interpreted by children as a sign of parental concern rather than rejection.

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Các nghiên cứu liên văn hoá về Tình huống lạ cho thấy **gắn bó an toàn luôn là loại phổ biến nhất** ở mọi văn hoá được khảo sát, phù hợp với quan điểm của Bowlby rằng gắn bó là một đặc điểm sinh học phổ quát của loài người. Tuy nhiên, tỷ lệ **tương đối** giữa gắn bó né tránh và gắn bó chống đối/mâu thuẫn có khác nhau giữa các văn hoá, có thể do khác biệt về chuẩn mực văn hoá đối với sự độc lập và cách phản ứng với nỗi buồn của trẻ. Tương tự, nuôi dạy **uy quyền (authoritative)** vẫn gắn với kết quả tích cực ở nhiều nền văn hoá, nhưng mức độ liên quan này — và tác động cụ thể của phong cách **độc đoán (authoritarian)** — có thể khác nhau tùy bối cảnh văn hoá, vì trẻ có thể diễn giải sự nghiêm khắc của cha mẹ khác nhau tùy vào việc đó có phải là chuẩn mực phổ biến trong văn hoá của trẻ hay không.

3.5 Erikson's Psychosocial Stages

Erik **Erikson** extended developmental theory across the *entire* lifespan (not just childhood), proposing eight sequential stages, each centered on a characteristic **psychosocial crisis** — a central tension between two opposing possible outcomes — that must be navigated at roughly that life period. Successfully resolving a stage's crisis builds a particular psychological strength that supports healthy engagement with later stages, though Erikson viewed the crises as never fully "finished" and potentially revisited throughout life.

Stage	Approx. age	Central conflict
1	Infancy (0–1)	Trust vs. mistrust — does the world feel safe and predictable, based on caregiver reliability?
2	Toddlerhood (1–3)	Autonomy vs. shame/doubt — can I do things myself, or do I doubt my own abilities?
3	Preschool (3–6)	Initiative vs. guilt — can I plan and carry out activities, or do I feel guilty for asserting myself?
4	School age (6–12)	Industry vs. inferiority — can I master skills and succeed at tasks, or do I feel inferior to peers?
5	Adolescence (12–18/20)	Identity vs. role confusion — who am I, and what do I stand for?
6	Young adulthood (20s–40)	Intimacy vs. isolation — can I form close, committed relationships?
7	Middle adulthood (40–65)	Generativity vs. stagnation — am I contributing to the next generation and to society?
8	Late adulthood (65+)	Integrity vs. despair — looking back, do I feel my life had meaning, or do I feel regret?

3.5.1 The Four Childhood Stages in Depth

Trust vs. mistrust (infancy, birth–1 year) is built almost entirely on whether caregivers respond consistently and reliably to an infant's basic needs (feeding, comfort, attention). An infant whose cries are reliably met with care develops a basic sense that the world, and the people in it, can be trusted; an infant whose needs are met unpredictably or neglectfully develops a more basic wariness that can color relationships for years afterward.

Autonomy vs. shame/doubt (toddlerhood, roughly 1–3 years) centers on a toddler's first attempts at independent action — feeding themselves, choosing clothes, toilet training. Caregivers who allow appropriate independence while still providing a safety net support a growing sense of **autonomy**; caregivers who are excessively controlling or critical of a toddler's clumsy early attempts can instead foster **shame** and self-doubt about the child's own capabilities.

Initiative vs. guilt (preschool, roughly 3–6 years) involves the young child's growing capacity to plan and initiate activities and social play — leading games, inventing pretend scenarios, asking ambitious questions. Encouragement of this initiative builds confidence in the child's ability to plan and lead; harsh criticism or excessive restriction of the child's self-initiated activities can instead produce lasting **guilt** about asserting one's own wants and ideas.

Industry vs. inferiority (school age, roughly 6–12 years) is centered on the school environment, where children for the first time systematically compare their own competence — academic, athletic, social — against that of peers. Children who experience enough success and recognition of their efforts develop a sense of **industry** (competence, "I can succeed at things"); children who experience repeated failure or unfavorable comparison can instead develop a lasting sense of **inferiority**.

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Bốn giai đoạn đầu của Erikson đều diễn ra trong **thời thơ ấu**: (1) **tin tưởng vs. nghi ngờ** — hình thành từ việc người chăm sóc có đáp ứng nhu cầu của trẻ một cách nhất quán không; (2) **tự chủ vs. xấu hổ/nghi ngờ bản thân** — từ những lần trẻ tự làm việc đơn giản (tự ăn, tự chọn đồ), nếu bị kiểm soát/chê bai quá mức sẽ sinh ra xấu hổ; (3) **chủ động vs. tội lỗi** — từ khả năng tự lên kế hoạch chơi, dẫn dắt hoạt động, nếu bị chỉ trích gay gắt sẽ sinh ra cảm giác tội lỗi khi tự đề xuất ý tưởng; (4) **cần cù vs. tự ti** — từ việc so sánh năng lực với bạn bè ở trường học, thành công lặp lại tạo ra cảm giác "mình làm được", thất bại lặp lại tạo ra tự ti.

3.5.2 The Four Adolescent and Adult Stages in Depth

Identity vs. role confusion (adolescence, roughly 12–18/20 years) is the crisis of actively exploring and eventually committing to a coherent sense of self — values, beliefs, career direction, and so

cial roles — often through trying out different groups, ideologies, and possible future selves before settling into an integrated identity.

Intimacy vs. isolation (young adulthood, roughly 20s–40) concerns the capacity to form deep, mutually committed emotional relationships (romantic partnerships, close friendships) once a stable enough identity is in place; difficulty forming or sustaining such relationships instead produces a persistent sense of isolation.

Generativity vs. stagnation (middle adulthood, roughly 40–65) concerns a person's sense of contributing productively to the next generation and to society — through parenting, mentoring, meaningful work, or community involvement; a lack of such outlets can instead produce a feeling of stagnation, that one's life or work lacks lasting impact.

Integrity vs. despair (late adulthood, roughly 65+) is the final stage, in which a person looks back over their entire life and evaluates it as a whole. A person who feels their life was, on balance, meaningful and well-lived achieves a sense of **integrity** — acceptance of one's life, including its imperfections; a person who instead dwells on regrets, missed opportunities, or unresolved conflicts experiences **despair**.

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Bốn giai đoạn sau của Erikson diễn ra từ **tuổi vị thành niên đến tuổi già**: (5) **bản sắc vs. hoang mang vai trò** — khám phá và cam kết với một bản sắc cá nhân nhất quán (giá trị, niềm tin, hướng nghề nghiệp); (6) **gắn kết vs. cô lập** — khả năng xây dựng mối quan hệ tình cảm sâu sắc, cam kết lâu dài, chỉ khả thi tốt khi bản sắc đã tương đối ổn định; (7) **cống hiến vs. trì trệ** — cảm giác đóng góp có ý nghĩa cho thế hệ sau và xã hội (làm cha mẹ, cố vấn, công việc có ý nghĩa); (8) **toàn vẹn bản ngã vs. tuyệt vọng** — nhìn lại toàn bộ cuộc đời và đánh giá nó có ý nghĩa hay đầy hối tiếc.

(!) Lỗi thường gặp: Đừng nghĩ rằng một khi một giai đoạn của Erikson được giải quyết thành công thì mâu thuẫn đó **biến mất vĩnh viễn**. Erikson cho rằng mỗi khủng hoảng tâm lý – xã hội có thể được **quay lại** và tái thương lượng ở các giai đoạn sau của cuộc đời (VD một người đã có bản sắc ổn định ở tuổi vị thành niên vẫn có thể trải qua một cuộc "khủng hoảng bản sắc" khác ở tuổi trung niên sau một biến cố lớn như ly hôn hay mất việc). Ngoài ra, việc "giải quyết" một giai đoạn không có nghĩa là đạt 100% về một cực (VD hoàn toàn tin tưởng, không một chút nghi ngờ) — mà là đạt được sự **cân bằng nghiêng về phía tích cực** của cặp mâu thuẫn đó.

Ví dụ mẫu · Identifying an Erikson stage from a scenario

A 17-year-old spends much of the year trying out different friend groups, considering different possible career paths, and questioning values she was raised with, trying to decide "who she really is" apart from her family's expectations. Which Erikson stage best describes this, and what is the central conflict?

This is **identity vs. role confusion** (Stage 5, adolescence). The central task of this stage is developing a coherent sense of personal identity — values, beliefs, career direction, and social roles — often through actively exploring and testing different possibilities, exactly as this teenager is doing. Successfully resolving this crisis produces a stable, integrated sense of self; failing to do so leaves the adolescent in **role confusion**, uncertain about who they are or where they are headed.

(!) Lỗi thường gặp: Học sinh hay nhầm lẫn giữa các **giai đoạn của Erikson** (tâm lý – xã hội, kéo dài suốt đời) với các **giai đoạn của Piaget** (nhận thức, dừng lại ở tuổi vị thành niên). Một mẹo phân biệt: nếu câu hỏi nhắc đến các từ khóa như "tin tưởng", "tự chủ", "bản sắc", "gắn kết", "cống hiến cho thế hệ sau" — đó là Erikson (xã hội – cảm xúc). Nếu câu hỏi nhắc đến "bảo

toàn", "duy kỷ", "tư duy trừu tượng" — đó là Piaget (nhận thức). Ngoài ra, Erikson là lý thuyết duy nhất trong chương này bao trùm **toàn bộ vòng đời**, kể cả tuổi già.

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Erikson mở rộng lý thuyết phát triển ra **toàn bộ cuộc đời**, với 8 giai đoạn, mỗi giai đoạn có một **khủng hoảng tâm lý – xã hội** trung tâm: (1) **Tin tưởng vs. Nghi ngờ** (sơ sinh); (2) **Tự chủ vs. Xấu hổ/Nghi ngờ bản thân** (chập chững biết đi); (3) **Chủ động vs. Tội lỗi** (mẫu giáo); (4) **Cần cù vs. Tự ti** (tuổi đi học); (5) **Bản sắc vs. Hoang mang vai trò** (vị thành niên); (6) **Gắn kết vs. Cô lập** (đầu tuổi trưởng thành); (7) **Cống hiến vs. Trì trệ** (trung niên); (8) **Toàn vẹn bản ngã vs. Tuyệt vọng** (tuổi già, nhìn lại cuộc đời).

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Một số điểm cần nhớ theo từng giai đoạn Erikson: giai đoạn 1 (*tin tưởng vs. nghi ngờ*) hình thành dựa trên việc người chăm sóc có đáp ứng nhu cầu của trẻ một cách nhất quán hay không — nền tảng cho khả năng tin tưởng người khác sau này. Giai đoạn 4 (*cần cù vs. tự ti*) liên quan trực tiếp đến môi trường học đường — trẻ so sánh năng lực bản thân với bạn bè. Giai đoạn 6 (*gắn kết vs. cô lập*) chỉ có thể giải quyết tốt nếu giai đoạn 5 (bản sắc) đã được giải quyết tương đối ổn định — một người chưa rõ mình là ai sẽ khó xây dựng mối quan hệ gắn kết sâu sắc với người khác.

3.6 Moral Development

3.6.1 Kohlberg's Stages of Moral Reasoning

Lawrence **Kohlberg** studied moral development by presenting children, adolescents, and adults with hypothetical **moral dilemmas** and analyzing the *reasoning* behind their answers — not simply whether they judged an action right or wrong. His most famous dilemma is the **Heinz dilemma**: a man named Heinz cannot afford an overpriced drug that could save his dying wife, and a druggist refuses to lower the price or let him pay later; should Heinz steal the drug? Based on responses to dilemmas like this, Kohlberg proposed three broad levels of moral reasoning, each containing two stages.

Kohlberg's three levels

Preconventional level (typical of young children): moral reasoning is based on the direct, personal consequences of an action.

Stage 1 — *obedience and punishment orientation*: an action is wrong if it leads to punishment.

Stage 2 — *instrumental/self-interest orientation*: an action is right if it serves one's own needs or leads to a fair exchange ("what's in it for me").

Conventional level (typical of adolescents and most adults): moral reasoning is based on maintaining social relationships and social order.

Stage 3 — *interpersonal accord ("good boy/good girl") orientation*: an action is right if it gains approval and maintains good relationships with others.

Stage 4 — *law-and-order orientation*: an action is right if it upholds laws, rules, and the functioning of society as a whole.

Postconventional level (reached, if at all, by a minority of adults): moral reasoning is based on abstract ethical principles that can stand apart from — and sometimes above — existing laws.

Stage 5 — *social contract orientation*: laws are viewed as flexible social agreements that exist to serve the common good and can legitimately be changed if unjust.

Stage 6 — *universal ethical principles orientation*: moral reasoning follows self-chosen, abstract principles of justice, equality, and human dignity, even if this requires disobeying an unjust

law.

Level	Stage	Orientation	Sample Heinz-dilemma reasoning
Preconventional	1: Obedience/punishment	Avoid getting punished	"Don't steal it — he'll be arrested and sent to jail."
Preconventional	2: Instrumental/self-interest	Serve one's own needs; fair exchange	"Steal it if it benefits him more than the risk costs him."
Conventional	3: Interpersonal accord	Gain approval; maintain relationships	"A good husband should do anything to save his wife — steal it."
Conventional	4: Law and order	Uphold laws and social order	"Don't steal — if everyone broke laws when convenient, society would fall apart."
Postconventional	5: Social contract	Laws serve the common good, can be changed	"Property laws exist to serve people; an unjust price justifies stealing."
Postconventional	6: Universal ethical principles	Abstract, self-chosen principles of justice	"Human life outweighs property rights as a matter of universal moral principle — steal it."

Ví dụ mẫu · Scoring reasoning on the Heinz dilemma

Three respondents all say Heinz *should* steal the drug, but give different justifications: Person A says "He shouldn't get caught, or he'll go to jail." Person B says "A good husband is supposed to save his wife — everyone would think less of him if he let her die." Person C says "Human life has a value that goes beyond any law about property or profit; a law that lets someone die to protect a druggist's profit is itself unjust." Identify each person's Kohlberg stage/level.

Person A reasons in terms of avoiding punishment (jail) — this is **preconventional, Stage 1** (obedience and punishment orientation). Person B reasons in terms of fulfilling a social role and avoiding others' disapproval ("what a good husband is supposed to do," "what everyone would think") — this is **conventional, Stage 3** (interpersonal accord/"good boy-good girl" orientation). Person C appeals to an abstract, universal principle (the value of human life over property) that can override existing law — this is **postconventional, Stage 6** (universal ethical principles). Note that all three reach the *same* conclusion (steal the drug) — Kohlberg's stages are defined by the structure of the reasoning, not the specific verdict reached.

Kohlberg found a rough, though imperfect, correlation between age and moral level: most young children reason at the **preconventional** level; most adolescents and adults shift to **conventional** reasoning; and only a minority of adults, generally later in life and often associated with more advanced cognitive development (formal operational thought is typically a prerequisite), consistently show **postconventional** reasoning. This is only a general trend, not a strict rule — many adults remain conventional reasoners throughout life, and moral stage is better predicted by a person's level of cognitive development and moral reasoning experience than by chronological age alone.

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Kohlberg nhận thấy có một xu hướng tương quan (không tuyệt đối) giữa **tuổi** và **mức độ lý luận đạo đức**: đa số trẻ nhỏ lý luận ở mức **tiền quy ước**; đa số thanh thiếu niên và người lớn

chuyển sang mức **quy ước**; chỉ một số ít người lớn (thường ở tuổi lớn hơn, và thường cần có tư duy thao tác hình thức) đạt được mức **hậu quy ước** một cách nhất quán. Đây chỉ là xu hướng chung — không phải quy luật bắt buộc; nhiều người lớn vẫn lý luận ở mức quy ước suốt đời, và mức độ đạo đức phụ thuộc nhiều hơn vào mức độ phát triển nhận thức và kinh nghiệm lý luận đạo đức, không chỉ đơn thuần là tuổi tác.

(!) Lỗi thường gặp: Điểm mấu chốt của thang đo Kohlberg là **cách lập luận (reasoning)**, KHÔNG phải **câu trả lời đúng/sai** (có nên ăn cắp thuốc hay không). Hai người có thể đưa ra cùng một quyết định (VD cùng nói "nên ăn cắp") nhưng ở hai giai đoạn đạo đức khác nhau, tùy vào lý do đằng sau quyết định đó. Đừng chấm điểm một câu trả lời trong đề thi chỉ dựa trên việc nhân vật "làm đúng" hay "làm sai" — phải phân tích **lý do**.

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Kohlberg dùng các **tình huống khó xử về đạo đức (moral dilemma)**, nổi tiếng nhất là **tình huống Heinz** (một người đàn ông có nên ăn trộm thuốc quá đắt để cứu vợ hay không), để nghiên cứu **lý do** đằng sau phán đoán đạo đức, không phải bản thân phán đoán đó. Ba cấp độ: **Tiền quy ước (preconventional)** — dựa vào hậu quả trực tiếp (tránh bị phạt, có lợi cho bản thân); **Quy ước (conventional)** — dựa vào việc được xã hội/người khác chấp nhận và duy trì trật tự xã hội, luật pháp; **Hậu quy ước (postconventional)** — dựa vào các nguyên tắc đạo đức trừu tượng, phổ quát, có thể vượt lên trên luật pháp hiện hành nếu luật đó bất công.

3.6.2 Critiques of Kohlberg: Gilligan and Cultural Limitations

Carol **Gilligan**, a former student of Kohlberg's, raised an influential critique: Kohlberg originally developed and validated his stage theory using a longitudinal sample of **only male** participants, yet applied the resulting scale universally to score both men's and women's moral reasoning. Gilligan argued that this could build in a subtle gender bias, because her own research suggested many women's moral reasoning emphasizes an **ethic of care** — prioritizing relationships, responsibility to others, and avoiding harm — which Kohlberg's justice-and-rights-focused scale tended to score as "merely conventional" (Stage 3) rather than recognizing it as an equally sophisticated, simply different, moral orientation. Gilligan proposed that care-based and justice-based reasoning represent two valid moral "voices" rather than a single hierarchy with justice reasoning at the top.

A second, related critique concerns **cultural limitations**: Kohlberg's stages, especially the post-conventional emphasis on individual conscience and universal principles that may override the group or the law, reflect values more characteristic of **individualist** Western cultures. Cross-cultural research finds that people in more **collectivist** cultures often reason in ways centered on group harmony, duty, and communal welfare that do not map cleanly onto Kohlberg's stages and are sometimes mis-scored as "lower" (conventional) even when the reasoning is sophisticated — raising the concern that the scale may not be a culturally neutral or universal measure of moral development.

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Gilligan phê phán rằng Kohlberg xây dựng thang đo từ mẫu nghiên cứu **toàn nam giới** nhưng áp dụng cho cả hai giới, có thể tạo ra thiên lệch giới: lập luận đạo đức thiên về **sự quan tâm, chăm sóc, trách nhiệm với người khác (ethic of care)** — thường gặp ở phụ nữ trong nghiên cứu của bà — dễ bị chấm ở mức thấp hơn (Giai đoạn 3, chỉ là "quy ước") so với lập luận thiên về **công lý, quyền lợi** mà Kohlberg coi là cao cấp hơn. Gilligan cho rằng đây là hai "tiếng nói đạo đức" khác nhau nhưng **ngang hàng nhau về giá trị**, chứ không phải một thang bậc cao – thấp. Ngoài ra, thang đo Kohlberg còn bị phê phán vì mang thiên hướng **văn hoá cá nhân chủ nghĩa phương Tây**, có thể đánh giá thấp lập luận đạo đức của các nền văn hoá tập thể (coi trọng sự hài hoà nhóm, trách nhiệm cộng đồng) một cách không công bằng.

3.6.3 Comparing the Major Stage Theories

Because Piaget, Erikson, and Kohlberg each proposed a fixed-sequence stage theory covering overlapping stretches of the lifespan, it is useful to line the three frameworks up side by side, since exam questions often require identifying which theorist's framework a given scenario belongs to.

Approx. age	Piaget (cognitive)	Erikson (psychosocial)	Kohlberg (moral)
0–2	Sensorimotor	Trust vs. mistrust; Autonomy vs. shame/ doubt	—
2–7	Preoperational	Initiative vs. guilt	Preconventional (Stages 1–2)
7–11	Concrete operational	Industry vs. inferiority	Preconventional/emerging conventional
12+	Formal operational	Identity vs. role confusion	Conventional (Stages 3–4); postconventional in a minority of adults
20s–65	(Formal operational, applied)	Intimacy vs. isolation; Generativity vs. stagnation	Conventional or post- conventional
65+	(Formal operational, applied)	Integrity vs. despair	Conventional or post- conventional

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Bảng trên đối chiếu ba lý thuyết giai đoạn lớn theo **độ tuổi**: Piaget (nhận thức), Erikson (tâm lý – xã hội), Kohlberg (đạo đức). Lưu ý Piaget và Kohlberg đều “dừng phát triển theo giai đoạn” ở tuổi trưởng thành (thao tác hình thức và mức hậu quy ước là điểm đến cuối cùng, không có giai đoạn mới cho tuổi trung niên/già), còn Erikson là lý thuyết **duy nhất** tiếp tục đưa ra giai đoạn riêng cho toàn bộ tuổi trưởng thành và tuổi già. Khi gặp một tình huống trong đề thi, hãy xác định xem tình huống đó nói về **cách suy nghĩ** (Piaget), **khủng hoảng cảm xúc – xã hội** (Erikson), hay **lý do đạo đức** (Kohlberg) để chọn đúng lý thuyết.

3.7 Adolescence and Adulthood

3.7.1 Puberty

Puberty is the period of rapid physical maturation, triggered by a surge of sex hormones (estrogen, testosterone), that marks the transition to reproductive maturity. It includes the development of **primary sex characteristics** (the reproductive organs themselves — ovaries, testes, and associated structures) and **secondary sex characteristics** (non-reproductive physical changes such as breast development, facial and body hair, voice deepening, and widening hips or broadening shoulders), along with a **growth spurt** — a rapid, temporary acceleration in height and weight. **Menarche** (first menstruation) and **spermarche** (first ejaculation) mark key reproductive milestones during this period.

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Đậy thì là giai đoạn trưởng thành sinh lý nhanh chóng do sự gia tăng hormone sinh dục (estrogen, testosterone), gồm phát triển **đặc điểm sinh dục sơ cấp** (cơ quan sinh sản) và **đặc điểm sinh dục thứ cấp** (ngực, lông, giọng nói, vóc dáng), cùng với **giai đoạn tăng trưởng vọt** (tăng nhanh về chiều cao, cân nặng). **Kỳ kinh đầu tiên (menarche)** ở nữ và **lần xuất tinh đầu tiên (spermarche)** ở nam đánh dấu các cột mốc sinh sản quan trọng.

Demographic research has documented a **secular trend**: the average age of puberty onset (including age at menarche) has gradually decreased across generations in many countries over the past century or more, most plausibly linked to improvements in nutrition and overall childhood health,

along with other proposed contributing factors such as changes in body composition and environmental chemical exposure. This trend illustrates once again how a biologically driven developmental process (puberty) can still be measurably shifted by environmental conditions across historical time – another instance of the recurring nature–environment interaction theme of this unit.

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Các nghiên cứu dân số học ghi nhận một **xu hướng thế hệ (secular trend)**: tuổi bắt đầu dậy thì trung bình (kể cả tuổi có kỳ kinh đầu tiên) đã giảm dần qua các thế hệ ở nhiều quốc gia trong hơn một thế kỷ qua, có thể liên quan đến việc cải thiện dinh dưỡng và sức khỏe tổng thể ở trẻ em, cùng một số yếu tố khác đang được nghiên cứu thêm. Đây là một minh chứng nữa cho thấy một quá trình mang tính sinh học (dậy thì) vẫn có thể bị dịch chuyển đo lường được bởi điều kiện môi trường qua các giai đoạn lịch sử khác nhau – một lần nữa thể hiện chủ đề **tương tác bản chất – môi trường** xuyên suốt chương này.

3.7.2 Adolescent Identity Formation and Egocentrism

Adolescence is when Erikson's **identity vs. role confusion** crisis (Stage 5) comes to the fore, as teenagers actively explore values, beliefs, and possible future roles in search of a coherent sense of self. Alongside this, David **Elkind** described a distinctive form of **adolescent egocentrism** – not the same egocentrism Piaget described in young children, but a related difficulty separating one's own heightened self-focus from others' actual perspectives.

Imaginary audience and personal fable

The **imaginary audience** is the belief that one is constantly being watched, noticed, and evaluated by others, leading to intense self-consciousness (e.g., a teenager convinced that everyone at school noticed a small stain on their shirt).

The **personal fable** is the belief that one's own feelings and experiences are entirely unique, that no one else could possibly understand them, and – often – that one is personally invulnerable to risks that affect others ("it won't happen to me"), which can contribute to adolescent risk-taking.

Ví dụ mẫu · Distinguishing imaginary audience from personal fable

A teenager refuses to go to school after a minor acne breakout, convinced that "everyone will be staring at it all day." The same teenager also drives well over the speed limit with friends in the car, thinking "accidents happen to other people, not to me." Identify which Elkind concept explains each behavior.

The refusal to go to school reflects the **imaginary audience**: the exaggerated belief that others are intensely focused on and judging one's appearance, when in reality most peers are far less observant or concerned than the teenager assumes. The risky driving reflects the **personal fable**: the belief in one's own uniqueness and invulnerability, leading the teenager to underestimate personal risk despite recognizing that the same behavior is dangerous for others.

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Bản ngã vị thành niên (adolescent egocentrism) theo Elkind gồm hai khái niệm: **khán giả tưởng tượng (imaginary audience)** – cảm giác luôn bị người khác chú ý, đánh giá (VD lo lắng thái quá về ngoại hình vì nghĩ "ai cũng nhìn mình"); và **câu chuyện cá nhân (personal fable)** – niềm tin rằng trải nghiệm/cảm xúc của bản thân là độc nhất, không ai hiểu được, và bản thân "miễn nhiễm" với rủi ro mà người khác gặp phải – điều này góp phần lý giải xu hướng chấp nhận rủi ro ở tuổi vị thành niên (VD lái xeẩu, thử chất kích thích).

Adolescent risk-taking also has a biological contributor. Brain-imaging research indicates that the brain's **limbic system** (involved in emotional reactivity and reward-seeking) matures earlier than the **prefrontal cortex** (involved in planning, impulse control, and weighing long-term consequences), which continues developing into the mid-twenties. This "dual systems" mismatch — a reward-driven emotional system that is already fully online, paired with a control/planning system that is still under construction — is thought to contribute, alongside personal fable reasoning, to adolescents' heightened sensitivity to reward and comparatively greater difficulty inhibiting impulsive, high-risk behavior, particularly in emotionally charged or peer-present situations.

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Việc chấp nhận rủi ro ở tuổi vị thành niên còn có nguyên nhân sinh học: **hệ viền (limbic system)** (liên quan đến cảm xúc và tìm kiếm khoái cảm) trưởng thành sớm hơn **vỏ não trước trán (prefrontal cortex)** (liên quan đến lập kế hoạch, kiểm soát xung động, cân nhắc hậu quả dài hạn) — vùng này tiếp tục phát triển đến giữa những năm 20 tuổi. Sự "lệch pha" giữa hai hệ thống này (một bên đã hoạt động mạnh, một bên còn đang phát triển) được xem là góp phần, cùng với kiểu tư duy "câu chuyện cá nhân", khiến thanh thiếu niên nhạy cảm hơn với phần thưởng và khó kiểm soát xung động hơn, đặc biệt trong tình huống cảm xúc mạnh hoặc có bạn bè chứng kiến.

3.7.3 Adulthood and Aging: Cognitive and Physical Change

Physical aging follows a fairly predictable timeline across adulthood. Most physical capacities (muscle strength, cardiovascular efficiency, immune response) peak in the twenties and then decline gradually and continuously rather than suddenly. Sensory systems become less acute with age — visual acuity and the ability to focus on close objects decline (often requiring reading glasses by the 40s), and high-frequency hearing sensitivity gradually diminishes. Reaction time slows gradually across adulthood, contributing to the fluid-intelligence decline discussed below. Reproductive capacity also changes with age, most visibly for women at **menopause** (the cessation of menstruation and fertility, typically in the late 40s to early 50s, driven by declining estrogen production), while male fertility declines more gradually and without a single sharp endpoint.

A key distinction, useful for understanding what does and does not decline with age, separates two components of intelligence.

Crystallized versus fluid intelligence

Crystallized intelligence is accumulated knowledge, learned facts, and vocabulary built up through experience and education. It tends to remain stable or even continue to **increase** into late adulthood.

Fluid intelligence is the capacity for fast, flexible reasoning about novel problems, unrelated to prior knowledge — abstract problem-solving speed. It tends to **decline** gradually starting in early-to-middle adulthood, associated with normal age-related changes in processing speed and working memory.

Ví dụ mẫu · Predicting age-related performance patterns

Compare how a 25-year-old and a 70-year-old would likely perform on (a) a vocabulary knowledge test and (b) a timed test requiring the participant to quickly identify the odd-one-out among unfamiliar abstract shapes.

(a) The vocabulary test primarily draws on **crystallized intelligence** — accumulated word knowledge built over a lifetime — so the 70-year-old, having had decades more experience and exposure to language, would likely perform **as well as or better than** the 25-year-old. (b) The

abstract-shapes test primarily draws on **fluid intelligence** — fast, novel reasoning unsupported by prior specific knowledge — which tends to decline with age (partly due to slower processing speed), so the 25-year-old would likely outperform the 70-year-old on this particular task. This pattern — stable/rising crystallized intelligence alongside declining fluid intelligence — is one of the most consistent findings in the cognitive-aging literature.

Beyond ordinary cognitive aging, some older adults develop **dementia**: a general, progressive decline in cognitive functioning (memory, reasoning, language, judgment) severe enough to interfere with daily functioning, which is not itself a normal part of aging. **Alzheimer's disease** is the most common cause of dementia, a progressive brain disease associated with the buildup of amyloid plaques and neurofibrillary tangles and with the loss (death) of neurons, producing worsening memory loss and cognitive decline over time.

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Trí thông minh kết tinh (crystallized intelligence) — kiến thức, vốn từ vựng tích lũy qua kinh nghiệm — thường **ổn định hoặc tăng** theo tuổi tác. **Trí thông minh linh hoạt (fluid intelligence)** — khả năng suy luận nhanh, linh hoạt với vấn đề mới lạ — thường **suy giảm dần** từ đầu đến giữa tuổi trưởng thành, liên quan đến tốc độ xử lý thông tin chậm lại theo tuổi. **Sa sút trí tuệ (dementia)** là sự suy giảm nhận thức nghiêm trọng, tiến triển, ảnh hưởng đến sinh hoạt hàng ngày — **KHÔNG** phải là một phần bình thường của lão hoá. **Bệnh Alzheimer** là nguyên nhân phổ biến nhất gây sa sút trí tuệ, liên quan đến sự tích tụ mảng bám amyloid và đám rối sợi thần kinh, cùng với sự chết dần của tế bào thần kinh.

Alongside physical and cognitive change, adulthood brings characteristic social transitions — establishing a career, forming a long-term partnership, raising children, and, in later adulthood, retirement and adjusting to the departure of grown children from the household — each of which interacts with the psychosocial tasks Erikson described for these life stages (intimacy, generativity, and integrity). Researchers sometimes describe a culturally shaped **social clock**: a set of implicit, culturally specific expectations for the "right age" to reach milestones such as finishing school, starting a career, marrying, or having children; being noticeably off this culturally expected timeline (in either direction) can itself become a source of social pressure or self-evaluation, even though the specific ages that define the social clock vary considerably across cultures and generations.

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Lão hoá thể chất diễn ra **dần dần và liên tục** suốt tuổi trưởng thành: sức mạnh cơ bắp và hiệu suất tim mạch thường đạt đỉnh ở tuổi 20 rồi giảm dần; thị lực và khả năng nghe âm cao giảm dần theo tuổi; thời gian phản ứng chậm lại. Về sinh sản, phụ nữ trải qua **thời kỳ mãn kinh (menopause)** — ngừng kinh nguyệt và khả năng sinh sản, thường vào cuối tuổi 40 đến đầu tuổi 50, do nồng độ estrogen giảm — còn khả năng sinh sản ở nam giới giảm dần hơn, không có một điểm mốc rõ ràng. Về mặt xã hội, các nhà nghiên cứu còn nói đến **"đồng hồ xã hội" (social clock)** — những kỳ vọng văn hoá ngầm về "tuổi thích hợp" để đạt các cột mốc như lập nghiệp, kết hôn, sinh con — dù các cột mốc cụ thể này khác nhau rất nhiều giữa các văn hoá và thế hệ.

3.7.4 Death and Dying: Kübler-Ross's Stages of Grief

Elisabeth **Kübler-Ross** proposed that people facing death (or significant loss/grief more generally) often move through five characteristic emotional stages.

Stage	Characteristic response
Denial	Refusing to believe or accept the reality of the loss/diagnosis
Anger	Frustration and resentment ("why me?"), sometimes directed at others or fate
Bargaining	Attempting to negotiate or postpone the outcome (e.g., through promises)
Depression	Deep sadness, hopelessness, withdrawal as the reality sets in
Acceptance	Coming to terms with the loss and finding a sense of peace

(!) Lỗi thường gặp: Mô hình Kübler-Ross thường bị hiểu nhầm là một **trình tự cố định, tuyến tính** mà ai cũng phải trải qua theo đúng thứ tự. Các nghiên cứu hiện đại phê phán điều này: không phải ai cũng trải qua đủ cả năm giai đoạn, thứ tự có thể đảo lộn, một số giai đoạn có thể lặp lại hoặc xuất hiện đồng thời, và một số người thể hiện sự thích nghi/chấp nhận ngay từ đầu mà không "phải" trải qua từng bước. Khi làm bài, nên trình bày mô hình này như một **khung mô tả các phản ứng cảm xúc thường gặp**, không phải một quy luật tuyến tính bắt buộc.

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Năm giai đoạn đối diện với cái chết/mất mát theo Kübler-Ross: **chối bỏ (denial)**, **giận dữ (anger)**, **thương lượng (bargaining)**, **trầm cảm (depression)**, và **chấp nhận (acceptance)**. Tuy mô hình này rất nổi tiếng, các nhà nghiên cứu hiện nay nhấn mạnh rằng đau buồn (grief) **không nhất thiết diễn ra tuyến tính hay theo đúng trình tự này ở mọi người** — đây là điểm phê phán quan trọng cần nêu khi phân tích lý thuyết này.

3.7.5 Gender Identity and Sexual Orientation

Two additional dimensions of development that unfold across childhood, adolescence, and adulthood are **gender identity** — a person's own internal sense of being male, female, both, a blend, or neither, which may or may not align with the sex assigned at birth — and **sexual orientation** — the pattern of a person's emotional, romantic, and sexual attraction (e.g., toward the same sex, other sex, both, or neither). Contemporary psychological research understands both gender identity and sexual orientation as **multidimensional** and shaped by a combination of biological influences (genetics, prenatal hormone exposure, brain development) and social-cognitive influences (socialization, cultural context, self-concept development), rather than as simple, single-cause, binary categories — and views variation along both dimensions as a normal part of human development rather than as disorder.

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Bản dạng giới (gender identity) là cảm nhận nội tâm của một người về giới tính của mình (nam, nữ, cả hai, hoặc không thuộc về nhị nguyên nam/nữ), có thể trùng hoặc không trùng với giới tính sinh học lúc sinh. **Xu hướng tính dục (sexual orientation)** là kiểu hấp dẫn về cảm xúc, tình cảm, tình dục của một người. Tâm lý học hiện đại xem cả hai là **đa chiều**, chịu ảnh hưởng kết hợp của yếu tố sinh học (di truyền, hormone trước sinh, cấu trúc não) và yếu tố xã hội – nhận thức, và là các biến thể bình thường trong phát triển con người, không phải là bệnh lý.

3.8 Classical Conditioning

3.8.1 Pavlov's Experiments and Basic Terminology

Ivan **Pavlov**, a Russian physiologist originally studying digestion, noticed that dogs in his lab began salivating not only to food but to stimuli that predicted food (such as the approaching footsteps of the lab assistant who fed them). This accidental observation launched his study of **classical conditioning**:

a form of learning in which a neutral stimulus comes to elicit a response after being repeatedly paired with a stimulus that already triggers that response.

Classical conditioning terminology

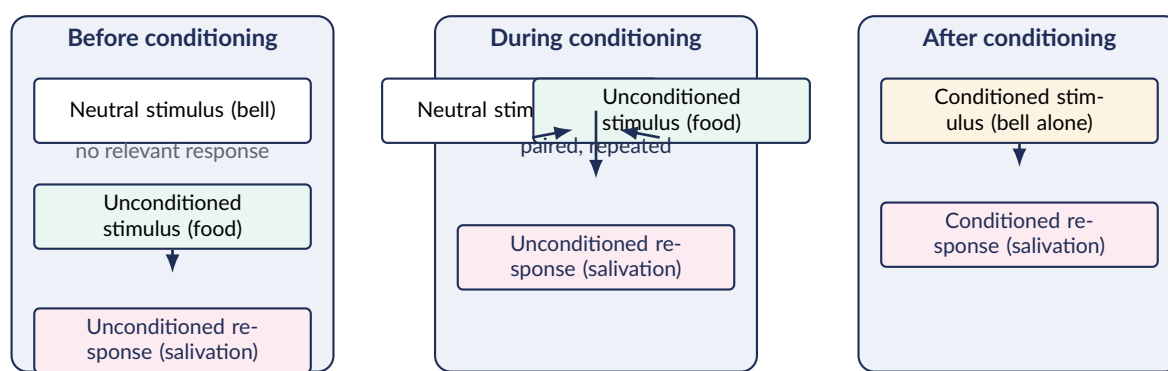
Unconditioned stimulus (UCS): a stimulus that naturally and automatically triggers a response, with no learning required (e.g., food).

Unconditioned response (UCR): the automatic, unlearned response triggered by the UCS (e.g., salivation to food).

Neutral stimulus (NS): a stimulus that, before conditioning, produces no relevant response (e.g., a bell, before any pairing).

Conditioned stimulus (CS): the formerly neutral stimulus which, *after* repeated pairing with the UCS, comes to trigger a learned response on its own (e.g., the bell, after conditioning).

Conditioned response (CR): the learned response triggered by the CS alone (e.g., salivation to the bell, after conditioning) – usually similar to, but often somewhat weaker than, the UCR.



Three-panel schematic of Pavlovian conditioning. Before conditioning, the bell (NS) produces no relevant response, while food (UCS) alone produces salivation (UCR). During conditioning, the bell and food are repeatedly paired, both preceding salivation. After conditioning, the bell alone – now a CS – is sufficient to elicit salivation, now called a CR.

Ví dụ mẫu · Labeling the elements of classical conditioning

A child develops a fear response every time they hear a dentist's drill, because on several past visits the sound of the drill (which itself is not painful) was closely followed by an injection that caused pain and made the child cry. Now, the sound of the drill alone makes the child cry, even before any injection. Label the UCS, UCR, NS/CS, and CR in this scenario.

The **UCS** is the painful injection (naturally, automatically causes distress). The **UCR** is the child crying/distress caused directly by the injection. The drill sound started as a **neutral stimulus (NS)** – it did not originally cause crying – but after repeated pairing with the injection, it became a **CS**. The child now crying at the sound of the drill *alone*, before any injection, is the **CR**.

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Thuật ngữ cốt lõi của **điều kiện hoá cổ điển (classical conditioning)** theo Pavlov: **kích thích không điều kiện (UCS)** – tự động gây ra phản ứng, không cần học (VD thức ăn); **phản ứng không điều kiện (UCR)** – phản ứng tự động đó (VD tiết nước bọt); **kích thích trung tính (NS)** – ban đầu không gây phản ứng liên quan (VD tiếng chuông); **kích thích có điều kiện (CS)** – kích thích trung tính SAU KHI được ghép cặp lặp lại với UCS, giờ tự nó gây ra phản ứng học được; **phản ứng có điều kiện (CR)** – phản ứng học được đó (VD tiết nước bọt khi nghe chuông, dù không có thức ăn).

3.8.2 Acquisition, Extinction, and Spontaneous Recovery

The lifecycle of a conditioned response

Acquisition: the initial phase of learning, during which the NS and UCS are repeatedly paired and the NS gradually becomes a CS capable of eliciting the CR on its own. Conditioning generally proceeds fastest, and produces the strongest CR, when the CS reliably *precedes* the UCS by a short, consistent interval.

Extinction: the weakening and eventual disappearance of the CR when the CS is repeatedly presented *without* the UCS — the learned association is not simply “erased,” but actively suppressed through new inhibitory learning.

Spontaneous recovery: after a rest period following extinction, the CR can reappear (usually weaker and more short-lived) when the CS is presented again — evidence that extinction suppresses rather than erases the original CS–UCS association.

Ví dụ mẫu · Reading an extinction and spontaneous recovery pattern

A dog is conditioned to salivate to a tone. Over ten trials where the tone is presented without food, salivation to the tone drops from a strong response to almost no response by trial 10. After a two-day break, the tone is presented again, and the dog shows a small but clear salivation response, which quickly fades again after a couple more unpaired presentations. Identify each phase of this pattern.

The initial pairing of tone and food, producing salivation to the tone alone, was **acquisition**. The gradual drop in salivation across the ten unpaired trials is **extinction** — the CR is being suppressed because the CS (tone) is no longer reliably predicting the UCS (food). The reappearance of a (weaker) salivation response after the two-day rest, despite no new pairings having occurred, is **spontaneous recovery** — showing that the original CS–UCS association was not erased by extinction, only inhibited, and that inhibition partially fades with time. The rapid re-fading after the response reappears is a second, faster round of extinction.

Later research by Robert **Rescorla** refined Pavlov’s original account of what actually drives conditioning strength. Pavlov’s original framework emphasized **contiguity**: how closely in time the CS and UCS are paired. Rescorla’s **contingency model** showed that mere temporal pairing is not sufficient — what matters most is whether the CS reliably **predicts** the UCS above and beyond what is already predictable from context alone. In Rescorla’s key experiments, if a UCS was just as likely to occur *without* the CS as with it (a low-contingency arrangement), only weak conditioning occurred even though the CS and UCS were still paired together fairly often; conditioning was much stronger when the CS reliably signaled a genuinely higher probability of the UCS occurring. This shifted the field’s understanding of classical conditioning from “stimuli that occur close together in time become associated” toward “organisms learn how well a stimulus predicts a meaningful outcome” — a more cognitive account of an otherwise seemingly automatic process.

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Rescorla bổ sung cho lý thuyết gốc của Pavlov: không phải chỉ cần CS và UCS xảy ra **gần nhau về thời gian (contiguity)** là đủ để hình thành điều kiện hoá — điều quan trọng hơn là CS có **dự đoán được** UCS một cách đáng tin cậy hay không (mô hình **tính ngẫu nhiên có điều kiện — contingency**). Nếu UCS xảy ra với xác suất gần như tương đương cả khi có và không có CS, điều kiện hoá sẽ rất yếu dù CS và UCS vẫn được ghép cặp thường xuyên; điều kiện hoá mạnh hơn khi CS thực sự báo hiệu xác suất UCS xảy ra tăng lên rõ rệt. Điều này cho thấy điều kiện hoá cổ điển không đơn thuần là “các kích thích gần nhau về thời gian sẽ liên kết với nhau”, mà là sinh vật đang học **mức độ dự đoán** của một kích thích đối với một kết quả có ý nghĩa — một

cách nhìn mang tính nhận thức hơn về một quá trình tưởng như hoàn toàn tự động.

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Tiếp thu (acquisition) là giai đoạn hình thành liên kết ban đầu giữa NS và UCS, hiệu quả nhất khi CS đi trước UCS một khoảng thời gian ngắn, ổn định. **Dập tắt (extinction)** là khi CR yếu dần rồi biến mất do CS được trình bày lặp lại mà KHÔNG có UCS đi kèm — liên kết cũ không bị "xoá" hoàn toàn mà chỉ bị ức chế. **Phục hồi tự phát (spontaneous recovery)** là khi CR bất ngờ xuất hiện trở lại (thường yếu hơn) sau một khoảng nghỉ, dù không có sự ghép cặp mới nào — bằng chứng cho thấy liên kết CS–UCS gốc vẫn còn tồn tại "âm thầm" sau khi dập tắt.

3.8.3 Generalization, Discrimination, and Higher-Order Conditioning

Further conditioning phenomena

Stimulus generalization: tendency to respond to stimuli that resemble the original CS with a similar (usually weaker) CR — the more similar a new stimulus is to the CS, the stronger the generalized response.

Stimulus discrimination: learning to respond to the specific CS but *not* to other, similar stimuli, typically because only the true CS has continued to be paired with the UCS.

Higher-order (second-order) conditioning: once a CS reliably elicits a CR, that CS can itself be paired with a brand-new neutral stimulus, which then also comes to elicit a (typically weaker) version of the CR — extending conditioning "one step removed" from the original UCS.

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Khái quát hoá kích thích (stimulus generalization): phản ứng tương tự CR xảy ra với các kích thích giống CS gốc (càng giống thì phản ứng càng mạnh). **Phân biệt kích thích (stimulus discrimination):** học được cách chỉ phản ứng với đúng CS, không phản ứng với kích thích tương tự khác — thường vì chỉ CS thật mới tiếp tục được ghép với UCS. **Điều kiện hoá bậc cao (higher-order/second-order conditioning):** một CS đã hình thành có thể được ghép với một kích thích trung tính mới, khiến kích thích mới đó cũng bắt đầu gây ra phản ứng (thường yếu hơn) — mở rộng chuỗi điều kiện hoá thêm một bước nữa, không cần trực tiếp có UCS gốc.

Ví dụ mẫu · Tracing a chain of higher-order conditioning

A dog is first conditioned so that a bell (CS1) reliably produces salivation (CR) after repeated pairing with food (UCS). Once the bell alone reliably produces salivation, the experimenter begins pairing a flashing light (a brand-new neutral stimulus) with the bell alone — never again pairing the bell directly with food during this new phase. After several such pairings, the light alone begins to produce a weak salivation response. Explain what has occurred, and predict what would happen to the light's effect if the bell were now repeatedly presented completely alone (with neither food nor the light) for many trials beforehand.

This is **higher-order (second-order) conditioning**: the well-established CS (the bell) is used in place of the original UCS (food) to condition a brand-new stimulus (the light), which becomes a second-order CS producing its own (typically weaker) CR. If the bell were instead repeatedly presented alone for many trials first, the bell's own association with food would undergo **extinction** (weakening because it is no longer paired with food); since the light's conditioning depends entirely on the bell's strength as a conditioned stimulus, extinguishing the bell first would be expected to prevent the light from acquiring much, if any, conditioned response at

all.

3.8.4 Watson's "Little Albert" Experiment

John B. **Watson**, together with Rosalie Rayner, sought to demonstrate that even complex human emotions like fear could be classically conditioned. In their famous (and now ethically controversial) study, they worked with a 9-month-old infant known as "Little Albert." Albert initially showed no fear of a tame white rat (NS). Watson and Rayner then repeatedly paired the rat with a loud, startling noise (UCS, striking a steel bar) that naturally caused fear (UCR) in the infant. After several pairings, Albert began to cry and show fear (CR) at the sight of the rat alone (now a CS) — and this conditioned fear **generalized** to other furry, white objects, including a rabbit, a fur coat, and a Santa Claus mask.

(!) Lỗi thường gặp: Theo tiêu chuẩn đạo đức nghiên cứu hiện đại, thí nghiệm "**Little Albert**" sẽ **KHÔNG** được phép thực hiện: không có sự đồng ý có hiểu biết (informed consent) hợp lệ (Albert còn là trẻ sơ sinh), Watson và Rayner **không hề giải mã cảm (decondition)** lại nỗi sợ mà họ đã tạo ra cho Albert trước khi bé rời phòng thí nghiệm, và nghiên cứu chủ động gây tổn hại tâm lý (nỗi sợ) cho một trẻ sơ sinh không có khả năng bảo vệ bản thân. Khi phân tích thí nghiệm này trong bài thi, cần nêu rõ được cả **kết quả khoa học** (chứng minh nỗi sợ có thể được hình thành qua điều kiện hoá cổ điển, và có thể khái quát hoá sang các kích thích tương tự) lẫn **vấn đề đạo đức** của nó.

GIẢI THÍCH TIẾNG VIỆT

VN

Watson và Rayner chứng minh rằng nỗi sợ — một cảm xúc phức tạp của con người — có thể được hình thành qua điều kiện hoá cổ điển, qua thí nghiệm với bé "**Albert nhỏ**": ghép tiếng động lớn đáng sợ (UCS) với con chuột bạch vốn trung tính (NS); sau vài lần ghép cặp, Albert sợ hãi (CR) chỉ với con chuột (giờ là CS), và nỗi sợ này còn **khái quát hoá** sang các vật có lông trắng khác (thỏ, áo lông, mặt nạ ông già Noel). Đây là một thí nghiệm kinh điển nhưng **vi phạm nghiêm trọng đạo đức nghiên cứu** theo chuẩn mực ngày nay.

3.8.5 Counterconditioning: Mary Cover Jones and "Little Peter"

A few years after the Little Albert study, Mary Cover **Jones** — working with Watson — demonstrated that a conditioned fear could also be removed using classical conditioning principles. Working with a young boy known as "Little Peter," who already had a fear of rabbits, Jones gradually brought a caged rabbit closer and closer while Peter ate one of his favorite foods, a pleasant activity that naturally produced a relaxed, positive emotional state incompatible with fear. Across repeated sessions, Peter's fear response to the rabbit diminished as the rabbit was associated with the pleasant experience of eating, rather than with anything frightening. This technique — pairing a feared CS with a stimulus that produces an incompatible, pleasant response, so that the pleasant response gradually replaces the fear response — is called **counterconditioning**, and it is often considered a historical forerunner of modern systematic desensitization.

GIẢI THÍCH TIẾNG VIỆT

VN

Mary Cover Jones, cộng sự của Watson, chứng minh điều ngược lại với thí nghiệm Albert: nỗi sợ có điều kiện có thể được **loại bỏ** bằng chính các nguyên lý điều kiện hoá cổ điển. Với bé "Peter nhỏ" đã sợ thỏ từ trước, Jones cho thỏ (trong lồng) tiến gần dần trong khi Peter đang ăn món ăn yêu thích — một hoạt động tạo cảm giác thoải mái, đối lập với sợ hãi. Qua nhiều lần lặp lại, nỗi sợ thỏ của Peter giảm dần vì con thỏ giờ được liên kết với cảm giác dễ chịu khi ăn, thay vì với điều đáng sợ. Kỹ thuật này — ghép CS gây sợ với một kích thích tạo ra phản ứng dễ chịu, đối nghịch với sợ hãi — gọi là **phản điều kiện hoá (counterconditioning)**, được xem là

tiền thân lịch sử của phương pháp giải mã cảm hệ thống hiện đại.

3.8.6 Real-World Applications of Classical Conditioning

Classical conditioning principles extend well beyond the laboratory. In cancer treatment, patients receiving chemotherapy (which itself often causes nausea, functioning as a UCS producing a UCR of nausea) frequently develop **conditioned nausea** to stimuli merely associated with treatment — the smell of the clinic, the sight of the nurse, or even the drive to the hospital — because those previously neutral stimuli have been repeatedly paired with the nausea-inducing treatment and have become CSs in their own right, sometimes triggering nausea even before the next treatment session begins. Classical conditioning also plays a role in **drug tolerance**: environmental cues repeatedly present at the time of drug use (a particular room, ritual, or location) can become conditioned stimuli that trigger the body's compensatory physiological response in advance of the drug itself, which is part of why an overdose is especially likely to occur when a drug is taken in an unfamiliar setting — the usual conditioned compensatory response, normally triggered by the familiar setting, is absent, leaving the body less prepared for the drug's full effect. Finally, therapeutic techniques for treating phobias, such as **exposure therapy** and **systematic desensitization**, apply the principle of **extinction** (and counterconditioning) directly: repeatedly presenting the feared CS in the controlled absence of the original aversive UCS (or paired instead with a relaxation response) gradually weakens the conditioned fear response.

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VN

Điều kiện hoá cổ điển có nhiều ứng dụng thực tế: bệnh nhân hoá trị thường phát triển **buồn nôn có điều kiện** với các kích thích chỉ đơn thuần đi kèm với việc điều trị (mùi phòng khám, hình ảnh y tá) vì các kích thích này đã trở thành CS sau khi lặp lại nhiều lần cùng với thuốc gây buồn nôn (UCS). Trong hiện tượng **dùng nạp thuốc (drug tolerance)**, các tín hiệu môi trường quen thuộc khi dùng thuốc có thể trở thành CS kích hoạt phản ứng bù trừ sinh lý của cơ thể trước cả khi thuốc phát huy tác dụng — đây là một lý do khiến việc dùng thuốc ở một môi trường lạ dễ gây quá liều hơn (vì thiếu phản ứng bù trừ quen thuộc). Các phương pháp điều trị ám ảnh sợ như **liệu pháp phơi bày (exposure therapy)** và **giải mã cảm hệ thống (systematic desensitization)** áp dụng trực tiếp nguyên lý **dập tắt (extinction)**: lặp lại việc trình bày CS gây sợ mà không có UCS gây sợ đi kèm (hoặc ghép với phản ứng thư giãn) để làm yếu dần phản ứng sợ có điều kiện.

3.9 Operant Conditioning

While classical conditioning explains how organisms learn to associate two stimuli so that a previously neutral stimulus comes to trigger an automatic, largely involuntary response (salivation, fear), **operant conditioning** explains something different: how the *consequences* of an organism's own voluntary behavior shape how often that behavior occurs in the future.

(!) **Lỗi thường gặp:** Một lỗi rất phổ biến là nhầm lẫn **điều kiện hoá cổ điển** với **điều kiện hoá thao tác**. Điều kiện hoá cổ điển liên quan đến các phản ứng **tự động, không chủ ý** (tiết nước bọt, sợ hãi) được gợi ra bởi việc ghép cặp hai kích thích — sinh vật không cần "làm" gì để phản ứng xảy ra. Điều kiện hoá thao tác liên quan đến các hành vi **tự nguyện, chủ động** (nhấn cần, dẫn chó ngồi) mà tần suất xuất hiện bị định hình bởi **hậu quả** theo sau nó. Một cách kiểm tra nhanh: nếu câu hỏi nói về một kích thích khiến cơ thể phản ứng ngoài ý muốn → điều kiện hoá cổ điển; nếu câu hỏi nói về một hành vi được thưởng/phạt để thay đổi tần suất → điều kiện hoá thao tác.

3.9.1 Thorndike's Law of Effect

Before Skinner, Edward **Thorndike** laid the historical foundation for operant conditioning with his **puzzle box** experiments on cats. A hungry cat placed inside a box could escape (and reach visible food) by performing a specific action, such as pulling a loop or pressing a lever. Across repeated trials, cats took progressively less time to escape, gradually eliminating ineffective actions and repeating the action that worked.

Thorndike's **law of effect**: behaviors followed by satisfying consequences become more likely to be repeated in that situation; behaviors followed by unsatisfying/discomforting consequences become less likely to be repeated. This simple principle — that consequences shape future behavior — is the conceptual seed from which Skinner's more detailed operant conditioning framework grew.

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Thorndike dùng "hộp câu đố" (puzzle box) với mèo: mèo học cách thoát ra nhanh hơn qua từng lần thử vì hành vi hiệu quả (kéo dây, nhấn cần) dẫn đến hậu quả dễ chịu (thoát ra, có thức ăn). **Luật hiệu ứng (law of effect)**: hành vi dẫn đến hậu quả dễ chịu sẽ có xu hướng được lặp lại; hành vi dẫn đến hậu quả khó chịu sẽ ít được lặp lại. Đây là nền tảng lịch sử cho lý thuyết điều kiện hoá thao tác chi tiết hơn của Skinner sau này.

3.9.2 Skinner's Operant Conditioning Framework

B. F. **Skinner** systematized and extended Thorndike's insight using the **operant chamber** (colloquially, the "Skinner box"): an enclosed apparatus in which an animal (commonly a rat or pigeon) can perform a specific operant behavior (pressing a lever, pecking a key) that is automatically followed by a programmed consequence (food, a mild shock, etc.), allowing precise, controlled study of how consequences shape voluntary behavior.

Reinforcement vs. punishment; positive vs. negative

Reinforcement *increases* the future frequency of the behavior it follows. **Punishment** *decreases* the future frequency of the behavior it follows.

Positive means *adding* a stimulus; **negative** means *removing* a stimulus. ("Positive" and "negative" here refer strictly to addition versus subtraction, not to "good" versus "bad.") Crossing these two dimensions produces four possible operant procedures.

Punishment (behavior ↓) Reinforcement (behavior ↑)

Add a stimulus	Remove a stimulus
Positive Reinforcement Add a pleasant stimulus to increase behavior. <i>Example: giving a dog a treat for sitting.</i>	Negative Reinforcement Remove an aversive stimulus to increase behavior. <i>Example: seatbelt alarm stops once you buckle up.</i>
Positive Punishment Add an aversive stimulus to decrease behavior. <i>Example: scolding a child for running into the street.</i>	Negative Punishment Remove a pleasant stimulus to decrease behavior. <i>Example: taking away phone privileges after curfew is broken.</i>

The 2×2 grid of operant procedures. Reinforcement (top row) always increases the target behavior; punishment (bottom row) always decreases it. Positive (left column) always adds a stimulus; negative (right column) always removes a stimulus.

Ví dụ mẫu · Classifying operant procedures

Classify each scenario as positive reinforcement, negative reinforcement, positive punishment, or negative punishment: (a) A teenager takes an aspirin, which removes a headache, and starts taking aspirin more often at the first sign of head pain. (b) An employee who arrives late repeatedly is required to stay 30 extra minutes doing paperwork, and starts arriving on time more often. (c) A driver who buckles a seatbelt makes an annoying chime stop, and starts buckling up immediately every trip. (d) A teenager loses weekend curfew privileges after breaking curfew, and starts coming home on time.

(a) **Negative reinforcement**: an aversive stimulus (headache) is *removed*, and the behavior (taking aspirin) *increases*. (b) **Positive punishment**: an aversive stimulus (extra paperwork time) is *added*, and the behavior (arriving late) *decreases*. (c) **Negative reinforcement**: an aversive stimulus (the chime) is *removed*, and the behavior (buckling up) *increases*. (d) **Negative punishment**: a pleasant stimulus/privilege (weekend curfew freedom) is *removed*, and the behavior (breaking curfew) *decreases*.

(!) Lỗi thường gặp: Lỗi phổ biến nhất trong chủ đề này là nhầm **củng cố tiêu cực (negative reinforcement)** với **trừng phạt (punishment)**. "Tiêu cực" ở đây chỉ có nghĩa là "loại bỏ" một kích thích — KHÔNG có nghĩa là hành vi giảm đi. Củng cố tiêu cực vẫn là **củng cố**: nó luôn làm **tăng** tần suất hành vi (bằng cách loại bỏ điều khó chịu), giống hệt như củng cố tích cực về mặt kết quả (tăng hành vi) — chỉ khác về cơ chế (thêm vào vs. loại bỏ). Hãy luôn tự hỏi hai câu: (1) hành vi tăng hay giảm? → củng cố hay trừng phạt; (2) kích thích được thêm vào hay loại bỏ? → tích cực hay tiêu cực.

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Khung 2×2 của Skinner: **củng cố (reinforcement)** luôn làm **tăng** hành vi; **trừng phạt (punishment)** luôn làm **giảm** hành vi. **Tích cực (positive)** = **thêm vào** một kích thích; **tiêu cực (negative)** = **loại bỏ** một kích thích. Bốn ô: **củng cố tích cực** (thêm điều dễ chịu để tăng hành vi, VD thưởng), **củng cố tiêu cực** (loại bỏ điều khó chịu để tăng hành vi, VD tắt tiếng chuông báo thất dây an toàn), **trừng phạt tích cực** (thêm điều khó chịu để giảm hành vi, VD la mắng), **trừng phạt tiêu cực** (loại bỏ điều dễ chịu để giảm hành vi, VD tịch thu điện thoại).

3.9.3 Primary and Secondary Reinforcers; Shaping

Types of reinforcers, and shaping

A **primary reinforcer** satisfies a basic biological need and is reinforcing without any learning required (e.g., food, water, warmth, sleep, sexual pleasure). A **secondary (conditioned) reinforcer** acquires its reinforcing value only through learned association with a primary reinforcer (e.g., money, grades, praise, tokens) — its power to reinforce behavior is itself a product of classical conditioning.

Shaping is a technique for teaching a behavior that an organism does not currently perform at all, by reinforcing successive approximations — behaviors that are progressively closer and closer to the final target behavior — rather than waiting for the complete target behavior to occur spontaneously.

Ví dụ mẫu · Designing a shaping procedure

A dog trainer wants to teach a dog to spin in a full circle on command, a behavior the dog has never performed. Design a shaping procedure using successive approximations, and identify the type(s) of reinforcer used.

The trainer would begin by reinforcing (with a food treat, a **primary reinforcer**) any small movement in the correct direction — e.g., the dog simply turning its head to one side. Once that behavior is reliable, the trainer stops reinforcing it and instead reinforces only a slightly larger movement — turning the whole body partway. This process continues in small steps: reinforcing a quarter-turn, then a half-turn, then a three-quarter turn, and finally only a complete 360-degree spin — with each new criterion building on, and eventually replacing, the last. A trainer might also pair a clicker sound (a **secondary reinforcer**, itself conditioned by repeated pairing with treats) with each correct approximation, since it can be delivered more precisely and immediately than a treat.

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Củng cố bẩm sinh/sơ cấp (primary reinforcer) thỏa mãn nhu cầu sinh học cơ bản, có giá trị củng cố mà không cần học (thức ăn, nước uống). **Củng cố thứ cấp/có điều kiện (secondary/-conditioned reinforcer)** có giá trị củng cố CHỈ vì đã được học/liên kết với một củng cố sơ cấp (tiền, điểm số, lời khen). **Định hình hành vi (shaping)** là kỹ thuật dạy một hành vi hoàn toàn mới bằng cách củng cố **các bước tiệm cận dần** (successive approximations) đến hành vi mục tiêu, thay vì chờ hành vi mục tiêu tự xuất hiện hoàn chỉnh.

A related idea, the **Premack principle**, notes that a reinforcer does not have to be an external object like food or money — a highly preferred, high-probability behavior can itself function as a reinforcer for a less preferred, lower-probability behavior. For example, telling a child “as soon as you finish your vegetables (low-probability behavior), you may have dessert (high-probability behavior)” uses access to the preferred activity itself as the reinforcing consequence, without needing any separate token or treat.

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Nguyên lý Premack (Premack principle): một hành vi được ưa thích, có xác suất xảy ra cao (VD được chơi, được ăn món tráng miệng) có thể được dùng làm **củng cố** cho một hành vi ít được ưa thích hơn, có xác suất xảy ra thấp hơn (VD ăn rau, làm bài tập) — bằng cách cho phép thực hiện hành vi ưa thích **ngay sau khi** hoàn thành hành vi ít ưa thích, không cần một vật củng cố riêng biệt nào khác.

3.9.4 Schedules of Reinforcement

Once a behavior has been learned, it does not need to be reinforced every single time it occurs. Under **continuous reinforcement**, every single correct response is reinforced — this produces the fastest initial learning during acquisition, but the resulting behavior extinguishes quite rapidly once reinforcement stops, because the sudden, total absence of an expected reinforcer is highly noticeable. Under **partial (intermittent) reinforcement**, only some responses are reinforced, following one of four schedules described below; although behavior is learned somewhat more slowly under partial reinforcement, the resulting behavior is markedly more resistant to extinction than continuously reinforced behavior — a robust finding known as the **partial reinforcement effect**, because the organism has already learned that reinforcement is not expected after every single response, so a string of unreinforced responses does not clearly signal that reinforcement has stopped for good.

A **schedule of reinforcement** specifies the pattern or rule for when reinforcement is delivered, and different partial schedules produce strikingly different patterns of response rate and **resistance**

to **extinction** (how long the behavior persists once reinforcement stops entirely).

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Củng cố liên tục (continuous reinforcement): mỗi lần phản ứng đúng đều được củng cố — học nhanh nhất lúc đầu, nhưng **dễ dập tắt nhanh** khi ngừng củng cố (vì sự vắng mặt hoàn toàn của củng cố rất dễ nhận ra). **Củng cố không liên tục/từng phần (partial/intermittent reinforcement):** chỉ một số lần phản ứng được củng cố — học chậm hơn một chút, nhưng hành vi **chống dập tắt tốt hơn nhiều**, gọi là **hiệu ứng củng cố từng phần (partial reinforcement effect)**, vì sinh vật đã quen với việc không phải lần nào cũng được thưởng, nên một loạt phản ứng không được củng cố không báo hiệu rõ ràng là củng cố đã chấm dứt hẳn.

Schedule	Definition	Example	Response pattern
Fixed-ratio (FR)	Reinforcement after a fixed <i>number</i> of responses	Piecework pay: bonus every 10 items produced	High rate; brief pause right after each reinforcement
Variable-ratio (VR)	Reinforcement after an unpredictable, averaging number of responses	Slot machines, gambling	Highest, steadiest rate; most resistant to extinction
Fixed-interval (FI)	Reinforcement for the first response after a fixed <i>time</i> period	Weekly paycheck; studying that spikes right before a scheduled exam	Scalloped pattern: low rate right after reinforcement, rising sharply just before next interval ends
Variable-interval (VI)	Reinforcement for the first response after an unpredictable, averaging time period	Checking a phone/email for new notifications	Moderate, fairly steady rate; fairly resistant to extinction

Ví dụ mẫu · Identifying a reinforcement schedule from data

A factory worker is paid a small bonus every time she completes exactly 15 units of product, regardless of how long it takes; her production data show a very high, steady work rate with only a brief pause immediately after each bonus is paid. Which schedule of reinforcement is this, and why does the pause occur right after reinforcement but nowhere else?

This is a **fixed-ratio (FR)** schedule: reinforcement (the bonus) depends only on a fixed *count* of responses (15 units), not on elapsed time. FR schedules typically produce a high, steady response rate because the worker's reward is directly tied to how fast she produces units — but a brief pause ("post-reinforcement pause") reliably follows each reinforced set, because the worker knows the next bonus is a full 15 units away and there is no cost to a short break immediately after cashing in the current one; the pause disappears as she approaches the next threshold, at which point the response rate again climbs, since output is again directly tied to nearing the next reward.

Ví dụ mẫu · Explaining why variable-ratio is most resistant to extinction

A slot machine pays out on an unpredictable variable-ratio schedule. Explain, in terms of the schedule's properties, why gamblers tend to keep playing for a very long time even during a losing streak, compared to someone on a fixed-ratio schedule who quickly stops responding once reinforcement clearly stops.

Under a **variable-ratio (VR)** schedule, the player can never predict exactly which response (pull of the lever) will be reinforced — there is no learned expectation of "reinforcement is

due right about now," so a long losing streak feels statistically unremarkable and does not clearly signal that reinforcement has stopped for good. This produces the highest and steadiest response rate of any schedule, and the **greatest resistance to extinction**: because the player has learned that long gaps between payouts are completely normal, they will keep responding through an extended dry spell. By contrast, under a **fixed-ratio (FR)** schedule, the person has learned a precise, predictable count at which reinforcement should occur; when that expected count is reached and passed with no reinforcement, the absence is immediately noticeable, so responding drops off (extinguishes) quickly.

(!) Lỗi thường gặp: Đừng nhầm giữa **lịch trình theo tỉ lệ (ratio)** — dựa vào **số lần phản ứng** — và **lịch trình theo khoảng thời gian (interval)** — dựa vào **thời gian trôi qua**. Đặc điểm nhận diện: nếu phần thưởng phụ thuộc vào việc "đã làm được bao nhiêu lần" → ratio; nếu phụ thuộc vào "đã trôi qua bao lâu" → interval. Một dấu hiệu khác: **lịch trình cố định (fixed)** tạo ra một khoảng dừng ngay sau khi được củng cố (dễ đoán trước), còn **lịch trình biến đổi (variable)** tạo ra tốc độ phản ứng đều đặn, không có khoảng dừng rõ rệt (khó đoán trước) — và luôn là loại có **khả năng chống dập tắt cao nhất**.

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Bốn **lịch trình củng cố**: **tỉ lệ cố định (fixed-ratio)** — củng cố sau một số lần phản ứng cố định, tạo tốc độ cao với khoảng dừng ngắn sau mỗi lần thưởng; **tỉ lệ biến đổi (variable-ratio)** — củng cố sau một số lần phản ứng không đoán trước được (trung bình), tạo tốc độ phản ứng **cao nhất, đều đặn nhất**, và **khó dập tắt nhất** (VD máy đánh bạc); **khoảng cố định (fixed-interval)** — củng cố cho phản ứng đầu tiên sau một khoảng thời gian cố định, tạo dạng đáp ứng hình "vỏ sò" (tăng dần gần đến thời điểm được thưởng); **khoảng biến đổi (variable-interval)** — củng cố sau một khoảng thời gian không đoán trước được, tạo tốc độ vừa phải nhưng khá đều đặn.

3.9.5 Biological Constraints on Conditioning

Learning is not infinitely flexible — evolution has "prepared" organisms to learn certain associations far more readily than others, and can even cause learned behavior to drift back toward instinctive patterns.

Garcia's taste aversion and biological preparedness

John **Garcia** (with Robert Koelling) found that rats readily developed a strong **taste aversion** to a flavored liquid after it was paired with induced nausea — even when the illness occurred several **hours** after tasting the liquid, a delay far longer than classical conditioning was thought to tolerate. However, rats did *not* readily learn to associate that same illness with a light or a sound, even when the light/sound was paired more closely in time with the nausea. This showed **biological preparedness**: organisms are evolutionarily predisposed to associate certain stimulus pairings (taste → illness, an ecologically sensible pairing tied to avoiding poisonous food) far more readily than other, less ecologically relevant pairings (light → illness) — conditioning is not a fully general-purpose process that treats all stimuli equally.

Instinctive drift

Keller and Marian **Breland**, former students of Skinner who worked as animal trainers, documented **instinctive drift**: when animals are operantly conditioned to perform a behavior, they sometimes gradually "drift" away from the trained behavior back toward instinctive, species-typical behaviors that interfere with it — even though this drift is never reinforced and actively

costs the animal reinforcement. In one famous case, raccoons trained to deposit coins into a container instead began rubbing the coins together in their paws, resembling the raccoons' instinctive food-washing behavior, and the trained coin-depositing behavior deteriorated over time.

Ví dụ mẫu · Applying biological preparedness

A farmer wants to condition crows to avoid eating from a particular field by pairing food from that field with a mild nausea-inducing (but harmless) chemical, versus a separate attempt to condition the same avoidance using a bright flashing light near the field instead of altering the food. Predict which approach will be more successful, and why.

The **taste/illness pairing** (chemical causing nausea associated with the food itself) is far more likely to succeed quickly and with a long-lasting effect, consistent with Garcia's findings: organisms are biologically prepared to rapidly associate flavor/food cues with illness, because this association had major survival value across evolutionary history (avoiding poisonous foods). The **light-based approach** is far less likely to work well, because there is no equivalent evolutionary preparedness linking a purely visual, non-food-related cue to illness — this is exactly the kind of association Garcia and Koelling found rats resisted learning even under more favorable timing conditions.

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Garcia chứng minh chuột hình thành **ác cảm vị giác (taste aversion)** với một loại thức ăn rất nhanh và bền vững, dù cảm giác buồn nôn xảy ra **trễ nhiều giờ** sau khi ăn — trái ngược với quy luật điều kiện hoá cổ điển thông thường (thường cần kích thích gần nhau về thời gian). Ngược lại, chuột **KHÔNG** dễ học liên kết giữa ánh sáng/âm thanh với cảm giác buồn nôn. Đây là bằng chứng cho **sự chuẩn bị sinh học (biological preparedness)**: sinh vật được tiến hoá "lập trình sẵn" để dễ học một số kiểu liên kết có giá trị sống còn (vị giác – bệnh) hơn các kiểu liên kết khác. **Trôi dạt bản năng (instinctive drift)** của Breland và Breland cho thấy hành vi đã học qua điều kiện hoá thao tác đôi khi dần "trôi" trở về hành vi bản năng của loài (VD gấu trúc được huấn luyện bỏ đồng xu vào hộp lại quay về hành vi bản năng "rửa" thức ăn bằng cách chà xát đồng xu) — chứng tỏ bản năng sinh học có thể giới hạn hoặc can thiệp vào quá trình điều kiện hoá.

3.9.6 Cognitive Processes in Learning: Tolman and Köhler

Strict behaviorism held that learning could be fully explained by observable stimulus–response associations, without needing to appeal to internal mental processes. Two lines of research challenged this.

Tolman's latent learning and cognitive maps

Edward **Tolman** ran rats through complex mazes under three conditions: one group was reinforced with food every time they reached the end; a second group received no reinforcement at all; a third group received no reinforcement for the first ten days, then began receiving food from day eleven onward. The never-reinforced group performed poorly throughout. The always-reinforced group gradually improved as expected. But the third group, once reinforcement began on day eleven, showed a sudden, dramatic drop in errors — matching or exceeding the always-reinforced group within a day or two — demonstrating that they had already learned the maze's layout during the unreinforced days, forming an internal **cognitive map** of the maze, even though this learning produced no visible behavioral change until reinforcement gave them a reason to use it. Tolman called this **latent learning**: learning that occurs without

reinforcement and remains hidden until there is an incentive to demonstrate it.

Köhler's insight learning

Wolfgang **Köhler** studied problem-solving in chimpanzees (most famously one named Sultan), presenting them with problems such as bananas placed out of reach outside a cage, with sticks or boxes available as tools. Rather than solving the problem through slow trial-and-error, the chimpanzees would often pause, appear to survey the situation, and then suddenly perform the correct solution (e.g., stacking boxes to climb up to the bananas, or joining two short sticks into one long stick to rake in the fruit) — a sudden reorganization of understanding Köhler called **insight**.

Ví dụ mẫu · Distinguishing latent learning from insight learning

A student explores a new city on foot for several days purely out of curiosity, with no particular goal in mind, then later needs to find the fastest route to an unfamiliar address and does so easily, apparently having already learned the city's layout. Separately, a chimpanzee that has never encountered a hanging banana problem before stares at two connectable sticks and a banana just out of reach, then suddenly joins the sticks together and successfully retrieves the banana on the very first attempt. Identify which phenomenon best explains each case.

The student's case illustrates **latent learning**: a **cognitive map** of the city was formed during unmotivated, unreinforced exploration, and that learning became visible only once there was a reason (an incentive) to use it — directly analogous to Tolman's rats. The chimpanzee's case illustrates **insight learning**: rather than a maze-like internal map built up gradually, this is a sudden, one-trial reorganization of the problem elements (sticks + banana + distance) into a working solution, with no history of trial-and-error practice on this specific problem — Köhler's hallmark of insight.

(!) Lỗi thường gặp: Đừng gộp chung **học tập tiềm ẩn (latent learning, Tolman)** và **học tập nhờ thấu hiểu (insight learning, Köhler)** — cả hai đều là bằng chứng chống lại chủ nghĩa hành vi thuần túy (behaviorism thuần), nhưng khác nhau: học tập tiềm ẩn nhấn mạnh việc học **diễn ra dần dần mà không cần củng cố**, chỉ được "bộc lộ" ra hành vi khi có động cơ; học tập nhờ thấu hiểu nhấn mạnh một khoảnh khắc **"bùng nổ" đột ngột**, giải quyết vấn đề gần như ngay lập tức mà không cần một quá trình thử-sai kéo dài trước đó.

GIẢI THÍCH TIẾNG VIỆT

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Tolman chứng minh **học tập tiềm ẩn (latent learning)**: chuột hình thành **bản đồ nhận thức (cognitive map)** về mê cung dù không được củng cố, và chỉ thể hiện ra hành vi rõ rệt khi bắt đầu có phần thưởng — cho thấy học tập có thể xảy ra mà không cần củng cố và không lộ ra ngay lập tức. **Köhler** chứng minh **học tập nhờ thấu hiểu (insight learning)** ở tinh tinh: thay vì thử-sai chậm rãi, con vật đột ngột "nhìn ra" giải pháp (VD ghép hai que ngắn thành que dài để lấy chuối) và thực hiện thành công gần như ngay lập tức. Cả hai nghiên cứu đều cho thấy có những **quá trình nhận thức bên trong** chi phối việc học, chứ không chỉ đơn thuần là liên kết kích thích – phản ứng quan sát được từ bên ngoài.

3.9.7 Applied Behavior Analysis

Skinner's principles of reinforcement and shaping are applied systematically in **applied behavior analysis (ABA)**, a field that uses careful measurement of behavior and its consequences to build useful

skills and reduce harmful behaviors, notably in educational support for individuals with autism spectrum disorder and other developmental disabilities. Classroom **token economies** — in which desired behaviors (staying on task, completing assignments) earn tokens (secondary reinforcers) that are later exchanged for backup privileges — and structured animal training programs (guide dogs, marine-mammal husbandry behaviors trained for veterinary care) are everyday applications of shaping and schedules of reinforcement outside the laboratory.

GIẢI THÍCH TIẾNG VIỆT

VN

Phân tích hành vi ứng dụng (applied behavior analysis - ABA) áp dụng có hệ thống các nguyên lý củng cố và định hình hành vi của Skinner để xây dựng kỹ năng mới và giảm hành vi gây hại, đặc biệt trong hỗ trợ giáo dục cho trẻ tự kỷ và các khuyết tật phát triển khác. **Hệ thống điểm thưởng (token economy)** trong lớp học — hành vi mong muốn được thưởng token (củng cố thứ cấp), sau đó đổi thành đặc quyền — và các chương trình huấn luyện động vật có cấu trúc (chó dẫn đường, huấn luyện thú y cho động vật biển) là những ứng dụng thực tế của định hình hành vi và lịch trình củng cố ngoài phòng thí nghiệm.

Skinner extended his operant framework beyond simple behaviors to argue, in his book *Verbal Behavior*, that even human language could be explained as operant behavior — shaped over a child's development through reinforcement and shaping of vocalizations by caregivers, without needing to assume any specialized, innate language-learning mechanism. Linguist Noam **Chomsky** published an influential critique arguing that a purely reinforcement-based account could not explain how children reliably produce and understand entirely novel sentence combinations they have never heard or been reinforced for, nor how children across very different cultures acquire the complex grammatical structure of language on a remarkably similar developmental timetable despite highly variable amounts of direct correction from adults — leading Chomsky to argue instead for an innate, biologically built-in language-acquisition capacity. This debate remains a landmark case study in the nature–nurture question as applied specifically to language development, illustrating the same broader tension that opened this unit.

GIẢI THÍCH TIẾNG VIỆT

VN

Skinner cho rằng ngôn ngữ của con người cũng có thể được giải thích hoàn toàn bằng **điều kiện hoá thao tác** — được định hình qua quá trình củng cố các phát âm của trẻ bởi người chăm sóc, không cần giả định một cơ chế học ngôn ngữ bẩm sinh chuyên biệt nào. Nhà ngôn ngữ học **Noam Chomsky** phản biện rằng cách giải thích chỉ dựa vào củng cố không thể lý giải được việc trẻ tạo ra và hiểu được những câu hoàn toàn mới mà chúng chưa từng nghe hay được củng cố, cũng như việc trẻ ở các văn hoá rất khác nhau đều học được cấu trúc ngữ pháp phức tạp theo một tiến trình phát triển khá giống nhau dù mức độ được sửa lỗi trực tiếp khác nhau rất nhiều — từ đó Chomsky cho rằng con người có một **khả năng học ngôn ngữ bẩm sinh**. Cuộc tranh luận này là một ví dụ kinh điển của câu hỏi bản chất – nuôi dưỡng áp dụng riêng cho phát triển ngôn ngữ, phản ánh đúng chủ đề xuyên suốt mở đầu chương này.

3.10 Observational Learning

3.10.1 Bandura's Social-Cognitive Theory and the Bobo Doll Experiment

Albert **Bandura** argued that a great deal of human learning occurs not through direct reinforcement or punishment of one's own behavior, but through **observational learning**: watching a **model** perform a behavior and its consequences, and using that observation to guide one's own later behavior — his broader framework is known as **social-cognitive theory** (originally social learning theory).

The Bobo doll experiment

In Bandura's classic study, young children individually watched an adult model interact with a room full of toys, including a large inflatable "Bobo doll." One group of children observed the adult model behave **aggressively** toward the doll (hitting it, kicking it, striking it with a mallet, while shouting aggressive phrases); a comparison group observed a **non-aggressive** model, or no model at all. Afterward, each child was placed alone in a room with the Bobo doll and other toys (after first being mildly frustrated by having attractive toys taken away, to provoke some response). Children who had observed the aggressive model imitated many of the specific aggressive actions and phrases they had seen, significantly more than children in the non-aggressive or no-model conditions — even though the children themselves had never been directly reinforced or punished for aggression toward the doll.

Ví dụ mẫu · Predicting Bobo-doll-style results with vicarious consequences

In a variation of Bandura's design, one group of children watches the aggressive model get praised and rewarded with candy for the aggressive behavior; a second group watches the same aggressive model instead get scolded and punished for it. Predict which group will show more imitated aggression when later given access to the doll, and name the concept involved. The group that watched the model **rewarded** for aggression would be expected to show **more** imitated aggression than the group that watched the model **punished**. This illustrates **vicarious reinforcement** (observing another person's behavior being rewarded increases the observer's own likelihood of performing that behavior) versus **vicarious punishment** (observing another's behavior being punished decreases the observer's likelihood of performing it) — children do not need to personally experience a consequence to have their own future behavior shaped by it; simply observing someone else's consequence is often sufficient.

GIẢI THÍCH TIẾNG VIỆT

VN

Bandura chứng minh qua thí nghiệm **búp bê Bobo**: trẻ quan sát người lớn đối xử **hung hăng** với búp bê Bobo (đánh, đá, dùng búa) sau đó tự mình bắt chước lại chính xác những hành vi và câu nói hung hăng đó khi được ở một mình với búp bê — dù bản thân trẻ chưa từng được thưởng/phạt trực tiếp cho hành vi đó. Đây là bằng chứng cho **học tập qua quan sát (observational learning)**: con người học được hành vi (kể cả hành vi mà họ chưa từng thực hiện) chỉ bằng cách quan sát người khác (gọi là **mô hình** — model) và hậu quả của hành vi đó.

The Bobo doll findings launched decades of subsequent research, much of it debated, on whether observing violent media (television, film, video games) increases real-world aggression in children. Long-term correlational and longitudinal studies have generally found a modest but consistent positive association between heavy exposure to violent media in childhood and later aggressive behavior or attitudes, and meta-analyses combining many such studies tend to support a genuine, if not enormous, effect. However, this research area also faces the standard challenges of separating correlation from causation outside the controlled laboratory setting: children who choose to consume more violent media may already differ in temperament, family environment, or peer group in ways that independently predict aggression, so most researchers now describe media violence as **one contributing risk factor** among several (including family conflict, peer influence, and individual temperament) rather than a sole or overwhelming cause of real-world aggression.

GIẢI THÍCH TIẾNG VIỆT

VN

Kết quả thí nghiệm búp bê Bobo mở ra nhiều thập kỷ nghiên cứu (còn nhiều tranh luận) về việc xem phương tiện truyền thông có nội dung bạo lực (truyền hình, phim, trò chơi điện tử)

có làm tăng hành vi hung hăng ngoài đời thực ở trẻ em hay không. Các nghiên cứu dài hạn nói chung tìm thấy một mối liên hệ khiêm tốn nhưng khá nhất quán giữa việc tiếp xúc nhiều với nội dung bạo lực và hành vi/thái độ hung hăng sau này. Tuy nhiên, các nghiên cứu này vẫn gặp khó khăn kinh điển trong việc tách **tương quan** khỏi **nhân quả**: trẻ chọn xem nhiều nội dung bạo lực có thể đã khác biệt về khí chất, môi trường gia đình, hoặc nhóm bạn — những yếu tố này cũng có thể dự đoán hành vi hung hăng một cách độc lập. Vì vậy, đa số nhà nghiên cứu hiện nay xem truyền thông bạo lực là **một yếu tố nguy cơ góp phần**, không phải nguyên nhân duy nhất hay áp đảo, gây ra hành vi hung hăng.

3.10.2 The Four Requirements for Observational Learning

Bandura specified that observational learning requires four component processes; if any one is missing, the observed behavior will not be successfully learned or reproduced.

Attention: the observer must actually notice and attend to the relevant features of the model's behavior.

Retention: the observer must be able to remember (mentally store/represent) what was observed.

Reproduction: the observer must possess the physical and cognitive capability to actually perform the observed behavior.

Motivation: the observer must have a reason or incentive to actually display the behavior (often shaped by vicarious reinforcement or punishment of the model).

Ví dụ mẫu · Diagnosing a missing requirement

A young child watches an older sibling expertly perform a complicated skateboard trick many times and can accurately describe every step of it from memory days later, but the child still cannot physically perform the trick even when strongly motivated to try. Which of Bandura's four requirements is missing, and which requirements have clearly been met?

Attention and **retention** have clearly been met — the child noticed the relevant details of the trick and can accurately recall/describe them later, and **motivation** is also present (the child wants to try). What is missing is **reproduction**: the child does not yet have the physical coordination, balance, or strength required to actually execute the trick, regardless of how well it has been observed, remembered, and desired. This illustrates that observational learning can successfully transmit the "knowledge" of a behavior well before the observer is capable of performing it.

GIẢI THÍCH TIẾNG VIỆT

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Bốn điều kiện cần thiết cho **học tập qua quan sát**: **chú ý (attention)** — phải thực sự chú ý đến hành vi của mô hình; **ghi nhớ (retention)** — phải lưu giữ được những gì đã quan sát trong trí nhớ; **tái tạo (reproduction)** — phải có khả năng thể chất/nhận thức để thực hiện lại hành vi đó; **động cơ (motivation)** — phải có lý do/động lực để thực sự thể hiện hành vi ra (thường bị ảnh hưởng bởi việc quan sát mô hình được thưởng hay bị phạt). Thiếu bất kỳ điều kiện nào trong bốn điều kiện này, việc học qua quan sát sẽ không diễn ra trọn vẹn.

Bandura's broader social-cognitive theory also introduced **self-efficacy**: a person's belief in their own capability to succeed at a specific task or in a specific domain. Self-efficacy is shaped in part by exactly the observational-learning process described above — successfully observing a similar model (especially one the observer identifies with) succeed at a task tends to raise the observer's own self-efficacy for that task, above and beyond simply learning the specific steps of the behavior itself. Higher self-efficacy, in turn, tends to increase persistence and effort when a person attempts

a challenging task, forming a two-way link between observational learning and a person's motivation to act on what they have learned.

GIẢI THÍCH TIẾNG VIỆT

VN

Lý thuyết nhận thức xã hội của Bandura còn đưa ra khái niệm **niềm tin vào năng lực bản thân (self-efficacy)**: niềm tin của một người vào khả năng của chính mình để thành công trong một nhiệm vụ hay lĩnh vực cụ thể. Self-efficacy một phần được hình thành chính từ quá trình học tập qua quan sát: quan sát một mô hình tương đồng với bản thân thành công trong một việc thường làm tăng niềm tin của người quan sát vào khả năng của chính họ trong việc đó, không chỉ đơn thuần học được các bước thực hiện. Self-efficacy cao hơn thường giúp một người kiên trì và nỗ lực nhiều hơn khi gặp nhiệm vụ khó, tạo ra mối liên hệ hai chiều giữa học tập qua quan sát và động lực hành động.

3.10.3 Vicarious Reinforcement/Punishment and Mirror Neurons

As illustrated above, an observer's future behavior is shaped not only by their own direct consequences but by **vicarious reinforcement** (seeing a model rewarded, which increases the observer's own likelihood of performing the behavior) and **vicarious punishment** (seeing a model punished, which decreases it) — this is one of the central mechanisms by which observational learning influences behavior even without any direct reinforcement history of one's own.

At the neural level, some researchers have proposed **mirror neurons** — neurons (first identified in the brains of macaque monkeys, and proposed to exist in similar form in humans) that fire both when an individual performs a specific action *and* when the individual merely observes another individual performing that same action — as a possible biological substrate that could help explain how observing another's behavior can be neurally linked to one's own capacity to perform (and understand) that behavior, and possibly to empathy. This remains an active and debated area of research, and mirror neurons should be treated as a proposed contributing mechanism, not a fully settled explanation of observational learning.

GIẢI THÍCH TIẾNG VIỆT

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Củng cố gián tiếp/vay mượn (vicarious reinforcement) và **trừng phạt gián tiếp (vicarious punishment)** là khi hành vi tương lai của người quan sát bị ảnh hưởng bởi việc chứng kiến **người khác** được thưởng hay bị phạt, chứ không cần bản thân người quan sát trực tiếp trải nghiệm hậu quả đó. Về mặt sinh học thần kinh, **neuron gương (mirror neurons)** — được phát hiện đầu tiên ở khỉ macaque, được đề xuất là cũng tồn tại tương tự ở người — là các neuron hoạt hoá cả khi thực hiện một hành động **lẫn** khi quan sát người khác thực hiện hành động đó, được xem là một cơ chế sinh học **khả dĩ** (còn đang tranh luận) giúp giải thích học tập qua quan sát và sự đồng cảm.

3.11 Problem Bank

Bài tập luyện tập

Which research design tests different age groups of participants all at a single point in time?

- | | |
|----------------------------|-----------------------------|
| (A) Longitudinal design | (C) Cross-sequential design |
| (B) Cross-sectional design | (D) Case study design |

Lời giải chi tiết

A cross-sectional design compares different age groups (different people) at one point in time, making it fast but vulnerable to cohort effects. **(B)**.

Bài tập luyện tập

A team of researchers wants to study whether working memory capacity changes with age, but they are worried that a purely cross-sectional comparison of 20-, 50-, and 80-year-olds tested this year would be confounded by generational differences in education and technology exposure. Design a cross-sequential study that would let them separate true age-related change from cohort effects, and explain how it accomplishes this.

Lời giải chi tiết

A well-designed **cross-sequential** study would begin with several cohorts at once — for example, testing groups starting at ages 20, 50, and 80 in the same year (an initial cross-sectional comparison) — and then **retest each of those same cohorts** periodically over the following years (e.g., every 5 years), adding the longitudinal element. This design lets researchers separate two things that a single cross-sectional snapshot cannot: (1) **true age-related change**, seen by tracking each cohort's own scores as its members age over the retest period, and (2) **cohort effects**, seen by comparing how different cohorts scored when they were the *same age* at different calendar times (e.g., comparing the age-50 score of the cohort that started at 20, in year 30 of the study, to the year-0 score of the cohort that started at 50). If different cohorts show similar patterns of change as they age, that supports a genuine age effect; if cohorts differ mainly in their overall starting level rather than their trajectory, that points to a cohort effect instead. This approach is faster than following a single cohort from 20 to 80 (decades), while still controlling for cohort effects far better than one cross-sectional comparison could.

Bài tập luyện tập

Which best illustrates the concept of gene–environment interaction, rather than a purely genetic or purely environmental explanation of a developmental outcome?

- | | |
|---|--|
| (A) A child's eye color is determined entirely by inherited genes. | (C) A child's native language is determined entirely by the language spoken in the home. |
| (B) A child's genetically influenced shy temperament leads parents to be more protective, which further reinforces the child's cautious behavior over time. | (D) A child's height is determined entirely by nutrition regardless of genetic background. |

Lời giải chi tiết

Option (B) shows a genetically influenced trait (temperament) shaping the environment (parental behavior), which then feeds back to further shape the child's development — a two-way interaction between nature and nurture, rather than either factor acting in isolation. **(B).**

Bài tập luyện tập

Explain the difference between the continuity view and the stage (discontinuity) view of development, and identify which view is best represented by Piaget's theory of cognitive development.

Lời giải chi tiết

The **continuity view** holds that development is a smooth, gradual, cumulative process, with the same underlying processes operating continuously throughout life. The **stage (discontinuity) view** holds that development instead proceeds through a sequence of distinct, qualitatively different stages, with relatively abrupt transitions between them, each stage bringing a genuinely different way of thinking or behaving. **Piaget's theory is a classic stage theory:** it proposes four qualitatively distinct, universally sequenced stages (sensorimotor, preoperational, concrete operational, formal operational), each with characteristically different reasoning abilities, rather than one smooth upward curve of ability.

Bài tập luyện tập

During which prenatal period does a developing organism face the greatest vulnerability to teratogens, and why?

- (A) The germinal period, because implantation is a fragile process (C) The fetal period, because the organism is largest and most exposed
- (B) The embryonic period, because the foundations of nearly every major organ system are being formed for the first time (D) Vulnerability is exactly equal across all three periods

Lời giải chi tiết

The **embryonic period** (weeks 3–8) is the period of greatest vulnerability, because this is when the basic structures of nearly every major organ system are being laid down for the first time (organogenesis); a disruption during this narrow window can derail the initial formation of a structure in ways that later exposure (during the fetal period, when structures already exist and are mainly maturing/growing) cannot. **(B).**

Bài tập luyện tập

A newborn shows the following facial features: unusually small, widely spaced eye openings, a thin upper lip, and a flattened groove between the nose and upper lip, along with below-average birth weight. The mother reports heavy alcohol use throughout pregnancy. What condition do these signs most likely indicate, and what is the underlying biological mechanism?

Lời giải chi tiết

These signs are characteristic of **fetal alcohol syndrome (FAS)**. The underlying mechanism is that alcohol is a small molecule that crosses the placenta freely (acting as a **teratogen**) and is directly toxic to the developing nervous system and other tissues of the embryo/fetus; heavy, sustained exposure produces the distinctive facial abnormalities, growth deficiencies, and lasting central nervous system impairment (including intellectual disability and attention/behavioral difficulties) associated with FAS.

Bài tập luyện tập

An infant turns her head toward a hand that lightly strokes her cheek, mouth opening as if searching for a nipple. Which newborn reflex is this?

- (A) Moro (startle) reflex
(B) Grasping (palmar) reflex

- (C) Rooting reflex
(D) Sucking reflex

Lời giải chi tiết

Turning the head toward a touch on the cheek, searching for the nipple, is the **rooting reflex** – distinct from the sucking reflex (triggered by something actually placed in the mouth). (C).

Bài tập luyện tập

An infant has irregular sleeping and eating routines, reacts to new toys or people with intense crying, and takes an unusually long time to calm down and adjust to any change in routine. Using Thomas and Chess's framework, classify this infant's temperament and explain what a "goodness of fit" approach to caregiving might involve for this child.

Lời giải chi tiết

This infant fits the **difficult** temperament category: irregular biological routines, intense/negative reactions to novelty, and slow adaptation to change. A **goodness-of-fit** approach would involve caregivers adjusting their own expectations and environment to better match this child's biologically based style – for example, introducing new people or situations gradually and with advance warning, maintaining predictable routines where possible, and expecting a longer adjustment period rather than treating the child's slower, more intense adaptation as simple misbehavior. Goodness of fit does not mean trying to force the child's temperament to change, but rather shaping the environment to work well with the temperament the child already has.

Bài tập luyện tập

A toddler who has only ever seen small dogs calls a large horse "doggie" the first time she sees one. Her mother corrects her, and after some exposure, the toddler creates a new mental category for horses and stops calling them dogs. Identify the concept illustrated by each part of this example.

- (A) Both parts illustrate assimilation only. ting the horse into the existing "dog" schema); the second illustrates accommodation (creating/modifying a schema for "horse").
- (B) The first part illustrates accommodation; the second illustrates assimilation.
- (C) The first part illustrates assimilation (fit- (D) Both parts illustrate object permanence.

Lời giải chi tiết

Calling the horse "doggie" is **assimilation**: the toddler is fitting a new experience into an existing schema ("dog") without changing that schema. Creating a distinct category for horses, once the mismatch became clear, is **accommodation**: the toddler's mental schemas themselves are modified/expanded to fit new information. (C).

Bài tập luyện tập

A researcher shows a 6-year-old child two rows of five checkers each, evenly spaced and clearly matching in number. When the researcher spreads one row out so it takes up more space (without adding or removing any checkers), the child insists the longer row now has "more" checkers. Identify the Piagetian stage this child is in, the specific limitation being demonstrated, and predict how an 8-year-old would respond differently.

Lời giải chi tiết

This 6-year-old is in the **preoperational stage** and is failing a test of **conservation of number**: because the spread-out row looks longer, the child **centrates** on this one visually salient dimension (length) and concludes there are more checkers, ignoring the fact that nothing was added or removed and that the same number can be verified by counting or reversing the spreading action. An 8-year-old, having reached the **concrete operational stage**, would correctly recognize that the number of checkers is unchanged regardless of spacing, reasoning that the transformation is reversible and does not affect quantity.

Bài tập luyện tập

Which milestone marks the key cognitive achievement of Piaget's sensorimotor stage, and at approximately what age does it typically first appear?

- (A) Conservation of liquid quantity, around age 7 (C) Abstract hypothetical reasoning, around age 12
(B) Object permanence, around 8 months (D) Egocentrism, around age 2

Lời giải chi tiết

Object permanence — understanding that objects continue to exist even when out of sight — is the hallmark achievement of the sensorimotor stage, typically first observed (through active searching behavior) around **8 months** of age. **(B)**.

Bài tập luyện tập

Using violation-of-expectation methods, modern researchers have found evidence that infants may understand object permanence well before 8 months of age. Explain why this finding is considered a critique of Piaget's original methodology rather than a wholesale rejection of his broader theory.

Lời giải chi tiết

Piaget originally assessed object permanence by requiring infants to **actively search** for a hidden object (e.g., lifting a cloth), a behavioral measure that depends not only on the infant's underlying knowledge but also on motor skills (reaching, coordinated searching) that develop somewhat later. Violation-of-expectation studies instead measure looking time at physically impossible events, a much less motorically demanding measure, and find evidence of earlier understanding. This is a critique of the **precise timing and behavioral measurement** used in Piaget's original research — showing that development may be more continuous and that certain competencies emerge earlier than Piaget estimated — rather than a rejection of his broader claims that cognition develops through a general, meaningful sequence of qualitative changes, which remains broadly influential.

Bài tập luyện tập

A teacher helps a student solve a challenging math problem by asking guiding questions and providing partial hints, gradually offering less help across several similar problems until the student can solve such problems independently. Which theorist's concepts are most directly illustrated, and what are the two key terms involved?

- (A) Piaget's concepts of assimilation and accommodation (C) Kohlberg's concepts of preconventional and conventional reasoning
(B) Vygotsky's concepts of the zone of proximal development and scaffolding (D) Erikson's concepts of industry and inferiority

Lời giải chi tiết

Guided support that is targeted at what a learner can almost do independently, and that is progressively withdrawn as competence grows, is the hallmark of Vygotsky's **zone of proximal development (ZPD)** and **scaffolding**. (B).

Bài tập luyện tập

Explain the central finding of Harlow's rhesus monkey studies, and describe how this finding challenged the earlier "cupboard-love" theory of attachment (the idea that infants attach to caregivers primarily because they provide food).

Lời giải chi tiết

Harlow found that infant monkeys given a choice between a wire surrogate mother that dispensed milk and a soft, cloth-covered surrogate mother that provided no milk spent the vast majority of their time clinging to the **cloth** mother, visiting the wire mother only briefly to feed before returning to the cloth mother, especially when frightened. This directly challenged the cupboard-love theory: if attachment were driven mainly by food provision, infants should have preferred and clung to the food-providing wire mother. Instead, the results showed that **contact comfort** — the soothing experience of touching something soft and warm — is a more powerful driver of attachment than feeding itself.

Bài tập luyện tập

Konrad Lorenz's studies of imprinting in graylag geese demonstrated which of the following?

- (A) Attachment in geese develops gradually over many months, with no sensitive period. (C) Geese show no attachment behavior at all.
(B) Goslings form a rapid, largely irreversible bond with the first moving object encountered during a brief critical period after hatching. (D) Imprinting only occurs if the moving object provides food.

Lời giải chi tiết

Lorenz showed that goslings imprint rapidly (often within hours) on the first moving object they see after hatching — normally the mother, but Lorenz demonstrated it could be a human or even an inanimate object — and that this occurs only within a narrow **critical period**, with the resulting bond being largely irreversible. (B).

Bài tập luyện tập

During the Strange Situation, an infant explores the toys confidently while the caregiver is present, becomes visibly upset when the caregiver leaves the room, and immediately seeks contact and is quickly and effectively soothed when the caregiver returns, after which the infant resumes playing. Classify this infant's attachment style and identify the caregiving pattern typically associated with it.

Lời giải chi tiết

This is **secure attachment**: the infant uses the caregiver as a secure base for exploration, shows appropriate distress at separation, and is easily and effectively comforted upon reunion, quickly returning to confident exploration. Secure attachment is typically associated with caregivers who are consistently sensitive and responsive to the infant's signals and needs.

Bài tập luyện tập

Which parenting style is characterized by high demandingness combined with high warmth/responsiveness, and is generally associated with the most favorable child outcomes (self-reliance, high self-esteem, social competence)?

(A) Authoritarian

(C) Uninvolved/neglectful

(B) Permissive

(D) Authoritative

Lời giải chi tiết

Authoritative parenting combines high demands (clear, consistently enforced expectations) with high warmth/responsiveness (explaining reasoning, listening to the child) and is generally linked to the best outcomes among Baumrind's styles. **(D)**.

Bài tập luyện tập

A 45-year-old describes feeling that his life's work — raising his children well and mentoring younger colleagues — has given him a sense of purpose and contribution to the future. According to Erikson, which stage and central conflict does this best illustrate?

Lời giải chi tiết

This illustrates Erikson's **generativity vs. stagnation** stage (middle adulthood, roughly ages 40–65). The central task of this stage is contributing to future generations and to society more broadly — through parenting, mentoring, productive work, or community involvement — versus feeling stagnant or that one's life lacks meaningful impact. This individual's sense of purpose from raising children and mentoring others reflects successful resolution toward **generativity**.

Bài tập luyện tập

Match each Erikson stage to its approximate age period: (1) trust vs. mistrust; (2) industry vs. inferiority; (3) intimacy vs. isolation; (4) integrity vs. despair.

- (A) (1) infancy; (2) school age; (3) young adulthood; (4) late adulthood (C) (1) adolescence; (2) toddlerhood; (3) middle adulthood; (4) infancy
- (B) (1) late adulthood; (2) infancy; (3) school age; (4) young adulthood (D) (1) young adulthood; (2) adolescence; (3) late adulthood; (4) toddlerhood

Lời giải chi tiết

Trust vs. mistrust occurs in **infancy** (0–1); industry vs. inferiority occurs in **school age** (6–12); intimacy vs. isolation occurs in **young adulthood** (20s–40); integrity vs. despair occurs in **late adulthood** (65+). (A).

Bài tập luyện tập

A child says stealing is wrong "because you'll get sent to your room if you get caught." According to Kohlberg, which stage of moral reasoning does this reflect?

- (A) Postconventional, Stage 6 (universal ethical principles) (C) Preconventional, Stage 1 (obedience and punishment orientation)
- (B) Conventional, Stage 4 (law and order) (D) Conventional, Stage 3 (interpersonal accord)

Lời giải chi tiết

Reasoning based purely on avoiding punishment reflects **preconventional, Stage 1** (obedience and punishment orientation) — the most basic level of Kohlberg's framework, typical of young children. (C).

Bài tập luyện tập

In response to the Heinz dilemma, an adult says: "Heinz should not steal the drug, because stealing is against the law, and if everyone just broke laws whenever they felt personally justified, society would fall into disorder." Identify this person's level and stage of moral reasoning according to Kohlberg, and explain your reasoning.

Lời giải chi tiết

This reflects the **conventional level, Stage 4** (law-and-order orientation): the reasoning is centered on upholding laws and the broader social order, rather than on personal punishment/reward (preconventional) or on an abstract ethical principle that might override the law itself (postconventional). The concern that widespread law-breaking would cause societal disorder is a classic Stage 4 justification — right action is defined by what maintains functioning social institutions and rules.

Bài tập luyện tập

Summarize Carol Gilligan's critique of Kohlberg's theory, including both the sampling concern and the alternative moral orientation she proposed.

Lời giải chi tiết

Gilligan pointed out that Kohlberg developed and validated his stage theory using a longitudinal sample of **only male** participants, then applied the resulting scale to score the moral reasoning of both men and women. She argued this risked **gender bias**: her own research suggested that many women's moral reasoning emphasizes an **ethic of care** — prioritizing relationships, responsibility to others, and avoiding harm — which Kohlberg's justice/rights-centered scale tended to score as merely conventional (Stage 3) rather than recognizing as an equally sophisticated but different moral orientation. Gilligan proposed that care-based and justice-based reasoning are two valid moral "voices," not a single hierarchy with justice reasoning ranked above care reasoning.

Bài tập luyện tập

Which of the following is a secondary sex characteristic that develops during puberty, as opposed to a primary sex characteristic?

- | | |
|-------------------------------|---|
| (A) Maturation of the ovaries | (C) Development of facial and body hair |
| (B) Maturation of the testes | (D) Development of the uterus |

Lời giải chi tiết

Primary sex characteristics involve the reproductive organs themselves (ovaries, testes, uterus); secondary sex characteristics are non-reproductive physical changes such as facial/body hair, breast development, and voice changes. (C).

Bài tập luyện tập

A teenager assumes that everyone in the cafeteria is watching and judging her new haircut, and separately believes that she is the only person who has ever truly experienced heartbreak like hers. Identify the two concepts illustrated, and explain the difference between them.

Lời giải chi tiết

The belief that everyone is watching and judging her illustrates the **imaginary audience**: an adolescent's exaggerated sense of being constantly observed and evaluated by others. The belief that no one else could understand her particular heartbreak illustrates the **personal fable**: the belief that one's own experiences and feelings are entirely unique. Both are forms of Elkind's **adolescent egocentrism**, but the imaginary audience concerns feeling **watched** by others, while the personal fable concerns feeling **uniquely different** from (and sometimes invulnerable compared to) others.

Bài tập luyện tập

An 80-year-old scores well below average on a timed test requiring rapid mental rotation of unfamiliar novel shapes, but scores above average on a vocabulary and general-knowledge test. Explain this pattern using the distinction between fluid and crystallized intelligence.

Lời giải chi tiết

The mental rotation test relies primarily on **fluid intelligence** — fast, flexible reasoning about novel material unsupported by prior specific knowledge — which tends to decline with

age, partly due to slower processing speed; this explains the below-average score. The vocabulary/general-knowledge test relies primarily on **crystallized intelligence** — accumulated knowledge built over a lifetime of experience — which tends to remain stable or even increase into late adulthood; this explains the above-average score. This pattern (declining fluid intelligence alongside stable/rising crystallized intelligence) is one of the most well-established findings in cognitive aging research.

Bài tập luyện tập

Which statement correctly distinguishes normal cognitive aging from dementia such as Alzheimer's disease?

- (A) Normal aging and dementia are the same process, just at different speeds.
- (B) Some decline in processing speed and fluid intelligence is a typical part of aging, while dementia involves a more severe, progressive decline in memory and reasoning that interferes with daily functioning.
- (C) Dementia is a normal, expected part of aging for everyone over 65.
- (D) Crystallized intelligence always declines sharply in both normal aging and dementia.

Lời giải chi tiết

Ordinary cognitive aging typically involves modest, gradual declines in fluid intelligence and processing speed while crystallized intelligence remains stable; **dementia** (of which Alzheimer's disease is the most common cause) is not a normal part of aging but a disease process producing progressive, severe cognitive decline (memory, reasoning, language) that impairs daily functioning, associated biologically with amyloid plaques, neurofibrillary tangles, and neuron loss. (B).

Bài tập luyện tập

A hospice counselor notices that patients facing terminal illness do not all move through denial, anger, bargaining, depression, and acceptance in the same order — some skip stages, some show acceptance early, and some cycle back through anger repeatedly. Evaluate whether this observation supports or challenges Kübler-Ross's theory, and explain how her model is best used in light of this critique.

Lời giải chi tiết

This observation **challenges** the idea that Kübler-Ross's five stages form a fixed, universal, linear sequence that every person must pass through in order. Modern grief research supports exactly this critique: grief and the process of facing death are highly individual, and people may experience the stages in different orders, skip some entirely, revisit others, or experience several simultaneously. Kübler-Ross's model is best used descriptively, as a catalog of **common emotional responses** that people facing loss or death may experience, rather than prescriptively, as a required or predictable timeline that clinicians should expect every patient to follow in the same order.

Bài tập luyện tập

Which statement best reflects the contemporary psychological understanding of gender identity and sexual orientation?

- (A) Both are determined by a single gene and are entirely fixed at birth with no environmental influence.
- (B) Both are simple binary choices that a person consciously makes at some point in adolescence.
- (C) Both are multidimensional, shaped by an interaction of biological factors (genetics, prenatal hormones, brain development) and social-cognitive factors, and represent normal variation in development.
- (D) Neither has any biological basis whatsoever.

Lời giải chi tiết

Contemporary research treats gender identity and sexual orientation as **multidimensional**, arising from an interaction of biological influences (genetic, prenatal hormonal, neurodevelopmental) and social-cognitive influences, and as normal variation in human development rather than as simple binary choices or disorders. (C).

Bài tập luyện tập

In Pavlov's classic experiment, before any conditioning takes place, a bell is rung and produces no salivation, while food placed in a dog's mouth reliably produces salivation. Label the bell and the food using classical conditioning terminology at this pre-conditioning stage.

Lời giải chi tiết

Before conditioning, the bell — which produces no relevant response — is a **neutral stimulus (NS)**. The food, which automatically and reliably produces salivation without any learning required, is the **unconditioned stimulus (UCS)**; the salivation it produces is the **unconditioned response (UCR)**. Neither the bell nor the food should yet be called "conditioned" anything, since no learning/pairing has occurred at this point.

Bài tập luyện tập

Design a classical conditioning procedure to produce a positive emotional association (rather than fear) between a young child and a previously disliked vegetable, specifying the NS, UCS, UCR, and the expected CS and CR after conditioning, and explaining the ideal timing between stimuli.

Lời giải chi tiết

Choose a stimulus that already reliably produces positive feelings, such as the child's favorite cartoon character or an enjoyable, energetic game — this is the **UCS**, producing the **UCR** of visible happiness/positive affect. The vegetable itself starts as effectively neutral or mildly negative and serves as the to-be-conditioned stimulus (**NS**). Repeatedly present the vegetable immediately before or alongside the positive activity/character (e.g., serving the vegetable while playing the child's favorite short show, or having a beloved character "introduce" the vegetable in a fun way), with the NS reliably and consistently preceding or accompanying the UCS by a short, predictable interval, across many repeated pairings (the **acquisition** phase). Over time, the vegetable alone should become a **CS**, itself eliciting a milder version of the

positive affect (the **CR**) even without the cartoon/game present. To avoid extinguishing the new association, the pairing should be maintained periodically rather than abruptly stopped, and any conditioned response should be checked for **generalization** (does the positive feeling spread to other vegetables?) versus **discrimination** (does it stay specific to the one paired vegetable?).

Bài tập luyện tập

After a CS no longer reliably predicts the UCS, the CR gradually weakens and disappears. If, after a period with no further presentations of the CS at all, the CS is presented once again and produces a brief, weaker version of the CR, what two processes have just been demonstrated, in order?

- | | |
|---|--|
| (A) Acquisition, then generalization | (C) Discrimination, then higher-order conditioning |
| (B) Extinction, then spontaneous recovery | (D) Generalization, then extinction |

Lời giải chi tiết

The gradual weakening/disappearance of the CR when the CS is no longer paired with the UCS is **extinction**; the reappearance of a weaker CR after a rest period, with no new pairings, is **spontaneous recovery** – showing that extinction suppresses rather than erases the original association. (B).

Bài tập luyện tập

A child conditioned to feel fear at the sound of a specific dog's bark later shows mild fear at the sound of other dogs barking too, but shows no fear reaction to a cat's meow or a car horn. Identify the two processes shown by, respectively, the reaction to other dogs and the lack of reaction to the cat/car horn.

Lời giải chi tiết

The mild fear response spreading to other, similar-sounding dog barks illustrates **stimulus generalization** – responding to a stimulus that resembles the original CS with a similar, usually weaker, CR. The lack of any fear response to clearly dissimilar sounds (a cat's meow, a car horn) illustrates **stimulus discrimination** – the child has learned to respond specifically to stimuli resembling the original CS and not to unrelated stimuli.

Bài tập luyện tập

Evaluate the "Little Albert" study conducted by Watson and Rayner using modern research ethics standards, addressing at least two specific ethical concerns, while also identifying the study's core scientific contribution.

Lời giải chi tiết

Scientifically, the study demonstrated that a complex human emotion (fear) could be produced through **classical conditioning** in an infant – pairing a loud noise (UCS) with a previously neutral white rat (NS) produced conditioned fear (CR) to the rat (now a CS) alone, and this fear **generalized** to other furry white objects. Ethically, however, the study would not be approved

under modern standards for at least two reasons: (1) there was no valid **informed consent** process appropriate for research involving a vulnerable infant participant who could not himself consent and whose guardian was not given a full, modern-style disclosure of risks; and (2) the researchers deliberately induced psychological harm (a fear response) in an infant and made **no attempt to decondition** (extinguish) that fear before the study ended, leaving Albert with an unresolved conditioned fear response. Modern ethical guidelines (informed consent, minimizing harm, debriefing/restoring participants to their prior state) would require both issues to be addressed before such a study could proceed.

Bài tập luyện tập

In Thorndike's puzzle box experiments, cats gradually escaped the box faster across repeated trials. According to the law of effect, why did this happen?

- (A) Cats developed insight into the box's mechanism suddenly, in a single trial.
- (B) Behaviors followed by a satisfying consequence (escape/food) became more likely to be repeated, while ineffective behaviors were gradually eliminated.
- (C) Cats imitated a model cat that had already learned to escape.
- (D) The cats' behavior was unrelated to the consequences of their actions.

Lời giải chi tiết

Thorndike's law of effect states that behaviors followed by satisfying consequences become more likely to recur, while behaviors followed by unsatisfying consequences become less likely to recur; across repeated trials, this gradually strengthened the effective escape behavior and weakened ineffective ones, producing faster escapes over time — a gradual process, not a sudden insight. (B).

Bài tập luyện tập

Classify each scenario as positive reinforcement, negative reinforcement, positive punishment, or negative punishment: (a) A student loses ten minutes of recess for talking during a quiz, and stops talking during quizzes. (b) A worker receives a bonus for exceeding a sales quota, and continues exceeding the quota. (c) A driver turns off a blaring warning alarm by putting on their seatbelt, and starts buckling up right away every time. (d) A puppy that jumps on guests gets sprayed with a burst of water, and stops jumping on guests.

Lời giải chi tiết

(a) **Negative punishment:** a pleasant privilege (recess time) is *removed*, and the behavior (talking during quizzes) *decreases*. (b) **Positive reinforcement:** a pleasant stimulus (bonus) is *added*, and the behavior (exceeding quota) *increases*. (c) **Negative reinforcement:** an aversive stimulus (the alarm) is *removed*, and the behavior (buckling up) *increases*. (d) **Positive punishment:** an aversive stimulus (water spray) is *added*, and the behavior (jumping on guests) *decreases*.

Bài tập luyện tập

A behavior analyst collects response-rate data from four different animals trained under four different schedules of reinforcement. Animal 1 shows a high response rate with a brief, predictable pause immediately after every 20th response is reinforced. Animal 2 shows the high-

est, steadiest response rate of all four, with no clear pattern to when reinforcement occurs relative to the number of responses, and continues responding for a very long time after reinforcement is discontinued entirely. Animal 3 responds very little right after reinforcement, then increases responding sharply as a fixed 60-second interval nears its end. Animal 4 responds at a moderate, fairly steady rate, checking periodically at unpredictable time intervals. Identify the schedule used for each animal.

Lời giải chi tiết

Animal 1 is on a **fixed-ratio (FR)** schedule: reinforcement depends on a fixed *count* of responses (every 20th), producing a high rate with a predictable post-reinforcement pause. Animal 2 is on a **variable-ratio (VR)** schedule: reinforcement depends on an unpredictable *count* of responses, producing the highest, steadiest rate and the greatest resistance to extinction — exactly the pattern described. Animal 3 is on a **fixed-interval (FI)** schedule: reinforcement depends on a fixed *time* period (60 seconds), producing the classic “scalped” pattern of low responding just after reinforcement and a sharp rise near the end of each interval. Animal 4 is on a **variable-interval (VI)** schedule: reinforcement depends on an unpredictable *time* period, producing a moderate, fairly steady rate consistent with periodically “checking” for reinforcement.

Bài tập luyện tập

A classroom teacher wants to design an operant conditioning plan using a token economy (tokens that can later be exchanged for privileges) to increase students’ rate of raising their hands before speaking, a behavior most students in the class do not currently perform at all. Design a complete plan, specifying (a) how shaping would be used, (b) which reinforcement schedule would build the strongest, most extinction-resistant habit once the behavior is established, and (c) how the tokens function as reinforcers.

Lời giải chi tiết

(a) **Shaping**: because most students do not currently raise their hands at all, the teacher should begin by reinforcing (with a token) any rough approximation of the target behavior — for example, any student who pauses before speaking, even without fully raising a hand — then gradually raise the criterion over subsequent days to only reinforce a partial hand-raise, then a full hand-raise held until called on, using **successive approximations** rather than waiting for perfect hand-raising to occur spontaneously. (b) Once the behavior is reliably established, switching from continuous reinforcement to a **variable-ratio** schedule (tokens given after an unpredictable number of correct hand-raises, on average) would produce the highest, steadiest rate of hand-raising and make the behavior the most resistant to extinction, since students cannot predict exactly which instance will be rewarded. (c) The tokens themselves are **secondary (conditioned) reinforcers**: they have no inherent value, but acquire reinforcing power because they are reliably exchangeable for backup rewards/privileges (which may include primary reinforcers, such as snack time, or other secondary reinforcers, such as extra free time).

Bài tập luyện tập

Rats that become nauseated after drinking a flavored liquid, even when the nausea occurs several hours later, readily learn to avoid that flavor in the future — but do not readily learn to avoid a light or sound paired with the same nausea, even with a shorter, more favorable delay. This finding is best explained by which concept?

(A) Instinctive drift

(C) Biological preparedness (illustrated by Garcia's taste-aversion research)

(B) Latent learning

(D) Insight learning

Lời giải chi tiết

Garcia and Koelling's taste-aversion findings demonstrate **biological preparedness**: organisms are evolutionarily predisposed to readily associate certain ecologically sensible stimulus pairings (taste and illness, relevant to avoiding poisonous food) even across long delays, while other pairings (light/sound and illness) are learned much less readily even under better timing conditions, showing that conditioning is constrained by an organism's evolutionary history rather than being a fully general-purpose process. (C).

Bài tập luyện tập

Explain the phenomenon of instinctive drift, using the Brelands' raccoon coin-depositing example, and explain what this phenomenon suggests about the limits of operant conditioning.

Lời giải chi tiết

Instinctive drift refers to the tendency for an operantly conditioned behavior to gradually deteriorate as the animal drifts back toward instinctive, species-typical behavior patterns that interfere with the trained response — even though this drift is never itself reinforced and actively costs the animal reinforcement. In the Brelands' example, raccoons trained to deposit coins into a container for food reward instead began rubbing the coins together repeatedly, resembling the raccoons' instinctive food-washing behavior, and stopped reliably depositing the coins. This suggests that operant conditioning does not operate on a limitless, entirely malleable blank slate: an animal's evolved instinctive behavior patterns can persist and intrude on trained behavior, placing biological limits on what can be reliably conditioned and maintained through reinforcement alone.

Bài tập luyện tập

In Tolman's classic maze experiment, rats that received no reinforcement for the first ten days but were then given food beginning on day eleven showed a sudden, sharp drop in maze errors almost immediately after reinforcement began — quickly matching rats that had been reinforced from day one. What does this result demonstrate?

(A) Rats can only learn a maze layout with continuous reinforcement from the very first trial.

behavior only once there was an incentive to demonstrate it.

(B) Latent learning: the unreinforced rats had already learned the maze layout (a cognitive map) during the unreinforced days, and this learning became visible in

(C) The rats experienced sudden insight learning, solving the maze in a single flash of understanding.

(D) Reinforcement has no effect on maze-running behavior at all.

Lời giải chi tiết

The unreinforced rats' rapid improvement once food was introduced shows that they had been learning the maze's spatial layout all along, forming an internal **cognitive map**, even without

any reinforcement and without any visible change in behavior — this hidden learning is **latent learning**, which only became behaviorally apparent once reinforcement gave the rats an incentive to use what they had already learned. (B).

Bài tập luyện tập

Köhler observed a chimpanzee named Sultan pause, look back and forth between two short sticks and an out-of-reach banana, and then suddenly join the sticks together to retrieve the banana on the first attempt, without any prior trial-and-error practice on this specific problem. Explain why this is classified as insight learning rather than as trial-and-error operant learning, and describe one modern research application that draws on this concept.

Lời giải chi tiết

This is classified as **insight learning** rather than trial-and-error learning because Sultan's solution appeared **suddenly**, as an apparent reorganization of the problem's elements into a working plan, with no history of gradually shaping the behavior through repeated reinforced attempts at this specific task — the hallmark distinction between insight and operant shaping (which requires a gradual history of successive approximations being reinforced). Insight learning research has informed later studies of creative problem-solving and "aha moment" phenomena in human cognition, where a solution to a difficult problem sometimes appears to emerge suddenly after a period of impasse, rather than through incremental trial-and-error.

Bài tập luyện tập

A published study claims that "children who attended full-day preschool have better social skills than children who did not," based on comparing a group of 8-year-olds who had attended full-day preschool to a different group of 8-year-olds who had not, all tested once during the same school year, with no control for family income or parental education. Critique this study's methodology and propose a stronger developmental research design.

Lời giải chi tiết

This is a **cross-sectional, correlational** comparison between different groups of children tested once, which has at least two serious limitations. First, because the two groups are different children entirely (rather than the same children tracked over time), any difference could reflect pre-existing differences between families who chose full-day preschool and those who did not (a confound), rather than a true causal effect of preschool attendance — the study explicitly did not control for likely confounds such as family income or parental education, both of which are independently linked to children's social skill development. Second, even setting aside causation, comparing groups at a single time point cannot establish whether any social-skill difference existed *before* preschool attendance began. A stronger design would either (a) use a true **experiment** with random assignment to full-day preschool versus a comparison condition (often impractical/unethical for this topic), or (b) use a **longitudinal** design that measures social skills in the same children *before* preschool begins and again afterward, statistically controlling for family income and parental education, to better isolate any genuine effect of preschool attendance from pre-existing group differences.

Bài tập luyện tập

In Bandura's Bobo doll experiment, children who observed an adult model behave aggressively toward the doll were later, when given the opportunity, significantly more likely to imitate specific aggressive actions than children who observed a non-aggressive model. This result is best explained by which concept?

- (A) Classical conditioning of the doll as a conditioned stimulus
- (B) Observational learning/modeling
- (C) Operant conditioning through the child's own direct reinforcement history
- (D) Object permanence

Lời giải chi tiết

Because the children themselves were never directly reinforced or punished for aggression toward the doll, their imitation of the model's specific aggressive actions is best explained by **observational learning (modeling)**: children can learn new behaviors simply by watching a model perform them, without any direct reinforcement history of their own. **(B)**.

Bài tập luyện tập

A child watches an older cousin correctly perform a card trick many times, pays close attention, and can accurately describe every step from memory a week later, and is highly motivated to learn the trick herself – but she has small hands and limited finger dexterity and still cannot perform the trick despite trying. Identify which of Bandura's four requirements for observational learning is missing and which have been satisfied.

Lời giải chi tiết

Attention, retention, and motivation have all clearly been satisfied: the child attended closely to the model, accurately retained the steps in memory over a week, and is motivated to perform the trick. What is missing is **reproduction**: the child currently lacks the physical dexterity/hand size needed to actually execute the trick's specific finger movements, regardless of how well the behavior has been observed, remembered, and desired. This illustrates that observational learning can transmit knowledge of a behavior well before an observer is physically capable of performing it.

Bài tập luyện tập

Which of the following best describes vicarious reinforcement, and what proposed neural mechanism has been suggested as a possible biological basis for linking observation of others' actions to one's own capacity to perform and understand those actions?

- (A) Vicarious reinforcement requires the observer to be directly rewarded; mirror neurons fire only during action execution, never during observation.
- (B) Vicarious reinforcement occurs when an observer's own future behavior increases after seeing a model rewarded for that behavior; mirror neurons are neurons proposed to fire both when performing an action and when observing another perform the same action.
- (C) Vicarious reinforcement and punishment are identical processes with no distinction between them.
- (D) Mirror neurons have been proven to fully and exclusively explain all observational learning.

Lời giải chi tiết

Vicarious reinforcement occurs when observing a model being rewarded increases the observer's own later likelihood of performing that behavior, even without any direct reward to the observer. **Mirror neurons** are neurons proposed to activate both when an individual performs a given action and when that individual merely observes another performing the same action, offered as one possible (and still debated) biological substrate that could help explain how observation links to an individual's own capacity to perform and understand actions. **(B)**.

Bài tập luyện tập

A team of behavioral geneticists compares 50 pairs of identical (monozygotic) twins and 50 pairs of fraternal (dizygotic) twins, all raised in their biological families, on a measure of shyness. They find that identical twins resemble each other on shyness scores much more closely than fraternal twins do. Explain what this pattern suggests, and identify one limitation of interpreting twin studies raised together as pure evidence of genetic influence.

Lời giải chi tiết

Because identical twins share essentially 100% of their genes while fraternal twins share only about 50%, and because both twin types who are raised together typically share a similarly close family environment, the substantially stronger resemblance among identical twins on shyness suggests a meaningful **genetic contribution** to individual differences in shyness. One limitation is that identical twins, in addition to sharing more genes, are also often treated more similarly by parents, teachers, and peers (partly *because* they look alike and are perceived as a unit) than fraternal twins are — meaning some of the extra resemblance attributed to genes could actually reflect a more similar *environment* for identical twins, not genes alone. This is one reason adoption studies (which separate genetic relatedness from shared environment more cleanly) are often used alongside twin studies.

Bài tập luyện tập

Which of the following best distinguishes a critical period from a sensitive period in development?

- | | |
|---|--|
| (A) They are identical concepts with no meaningful difference. | the same learning remains possible but is typically more effortful. |
| (B) A critical period is a narrow, rigid window outside of which normal development of a specific capacity becomes very difficult or impossible; a sensitive period is a broader, more flexible window of heightened responsiveness, outside of which | (C) A sensitive period only applies to prenatal development, while a critical period only applies after birth. |
| | (D) A critical period lasts for a person's entire life, while a sensitive period lasts only a few days. |

Lời giải chi tiết

A **critical period** (e.g., imprinting in geese) is a narrow, largely inflexible window outside of which the normal developmental outcome becomes difficult or impossible to achieve; a **sensitive period** (e.g., human language acquisition) is broader and more flexible — learning remains possible outside the window, typically just with more effort and a less complete result. **(B)**.

Bài tập luyện tập

According to Paul Baltes's lifespan perspective, an 80-year-old with declining fluid intelligence (slower novel problem-solving) but stable or improved crystallized intelligence (vocabulary, general knowledge) at the very same time in life is best described by which principle of the lifespan perspective?

- (A) Development is lifelong
- (B) Development is multidirectional
- (C) Development is unidimensional
- (D) Development is entirely fixed and non-plastic

Lời giải chi tiết

The **multidirectional** principle holds that different capacities can move in different directions (some increasing, some decreasing) at the very same period of life, exactly as shown by simultaneously declining fluid intelligence and stable/rising crystallized intelligence. **(B)**.

Bài tập luyện tập

In Jerome Kagan's research, infants classified as "high-reactive" show strong physiological arousal and behavioral wariness toward novel stimuli, while "low-reactive" infants remain calm. Explain how this line of research illustrates gene–environment interaction rather than pure genetic determinism, given that not all high-reactive infants become shy, inhibited children.

Lời giải chi tiết

High-reactivity appears to reflect a biologically based predisposition (consistent with early, stable individual differences in temperament having a genetic/physiological basis), which **increases the likelihood**, but does not guarantee, that a child will later develop a shy, inhibited temperament style. Whether that predisposition is actually expressed as later shyness depends substantially on environmental factors, such as parenting style and life experiences (a concept related to **goodness of fit**) — a high-reactive infant raised by caregivers who gradually and supportively expose the child to novel situations may develop very differently from a high-reactive infant who is either overprotected or repeatedly overwhelmed. This shows the predisposition sets a *tendency*, not a fixed outcome, exactly the kind of gene–environment interaction described at the start of this unit.

Bài tập luyện tập

Cross-cultural meta-analyses of the Strange Situation procedure across many countries have found which consistent pattern?

- (A) Secure attachment is rare in every culture studied.
- (B) Secure attachment is the most common classification in every culture studied, though the relative rates of insecure-avoidant versus insecure-resistant attachment vary somewhat by culture.
- (C) Insecure-avoidant attachment is universally the most common classification.
- (D) Attachment classifications are completely random and show no consistent pattern across or within cultures.

Lời giải chi tiết

Cross-cultural research (e.g., meta-analyses associated with Marinus van IJzendoorn) consistently finds that **secure attachment is the most common classification in every culture studied**, supporting the idea that attachment formation is a universal feature of human infancy, while the relative balance of the two insecure categories shows some cultural variation, plausibly linked to differing cultural norms around closeness and independence. **(B)**.

Bài tập luyện tập

In follow-up research beyond the original wire-vs.-cloth-mother study, Harlow found that rhesus monkeys raised only with a cloth surrogate (and no live social interaction) still grew up with lasting social and mating deficits as adults. Explain what this additional finding adds to the original contact-comfort conclusion, and describe what later intervention showed about the plasticity of these effects.

Lời giải chi tiết

The original study established that **contact comfort** (not food) is the primary driver of infant attachment to a caregiver figure. The follow-up finding adds an important qualification: contact comfort with an inanimate cloth surrogate, while clearly better than a wire surrogate or complete isolation, was still **not sufficient** on its own for normal social development — monkeys raised only with a cloth surrogate, without any live, responsive social interaction, still showed lasting deficits as adults. This shows that healthy attachment and social development require some opportunity for **responsive, reciprocal interaction**, not merely a soft object to cling to. Later interventions that gave isolated monkeys extended structured time with well-adjusted younger "monkey therapists" were able to partially reverse some of these deficits, illustrating a degree of **plasticity** — the capacity for compensation and change — even after early social deprivation.

Bài tập luyện tập

Which theorist demonstrated that a previously conditioned fear response could be removed through counterconditioning, and what was the key procedure used?

- | | |
|---|---|
| (A) John Watson, by repeatedly presenting the loud noise without the rat | ity (eating a favorite food) |
| (B) Mary Cover Jones, by gradually bringing a feared rabbit closer while the child engaged in an incompatible pleasant activity | (C) B. F. Skinner, by reinforcing the child with candy every time the rabbit appeared |
| | (D) Ivan Pavlov, by ringing a bell whenever the rabbit was present |

Lời giải chi tiết

Mary Cover Jones demonstrated counterconditioning with "Little Peter": she paired the feared rabbit with a pleasant, incompatible activity (eating a favorite food), gradually bringing the rabbit closer across sessions until the fear response was replaced by a calmer, more positive response. **(B)**.

Bài tập luyện tập

Explain the mechanism behind conditioned drug tolerance, and explain why an overdose is more likely when a regular drug user takes their usual dose in an unfamiliar setting rather than their usual setting.

Lời giải chi tiết

With repeated drug use in a consistent setting, environmental cues present at the time of use (a particular room, ritual, or location) become **conditioned stimuli** that come to trigger the body's compensatory physiological response *in anticipation of* the drug, partially offsetting the drug's effects before it even takes action — this learned compensatory response is what produces much of observed drug "tolerance." When the same dose is taken in an unfamiliar setting, those conditioned cues are absent, so the anticipatory compensatory response does not occur, leaving the body **less prepared** to counteract the drug's full physiological impact — the same dose that was previously well-tolerated in the usual setting can then have a much stronger, potentially fatal, effect in the new setting.

Bài tập luyện tập

A researcher wants to determine whether heavy childhood exposure to violent video games causes increased real-world aggression later in adolescence. She surveys teenagers about their current video-game habits and current aggressive behavior at a single point in time and finds a positive correlation. Critique this design's ability to support a causal claim, and describe a stronger design.

Lời giải chi tiết

This is a **correlational, cross-sectional** design measured at a single point in time, which cannot establish causation for at least two reasons: (1) **directionality** is unclear — it is equally possible that already-aggressive teenagers are drawn to choose more violent games, rather than the games causing the aggression; and (2) **third-variable confounds** are uncontrolled — factors such as family conflict, peer group, or individual temperament could independently increase both violent-game preference and aggression, producing a correlation with no direct causal link between them. A stronger design would be **longitudinal**, measuring video-game exposure and aggressive behavior in the same children starting well before adolescence and tracking both over time, while statistically controlling for plausible confounds (family environment, baseline temperament) — this would at least establish correct time-ordering (exposure preceding any later change in aggression) and help rule out some, though not all, third-variable explanations. A true experiment (randomly assigning exposure levels) would give the strongest causal evidence but raises ethical/practical concerns given the topic.

Bài tập luyện tập

Which sequence correctly places these three theorists' stage frameworks in order of the age range in which their *final* stage occurs (from earliest final stage to latest final stage)?

- (A) Kohlberg (postconventional reasoning, adulthood) → Piaget (formal operational, age 12+) → Erikson (integrity vs. despair, late adulthood) vs. despair, late adulthood)
- (B) Piaget (formal operational, age 12+) → Kohlberg (postconventional reasoning, a minority of adults) → Erikson (integrity vs. despair, late adulthood)
- (C) Erikson (integrity vs. despair) → Piaget (formal operational) → Kohlberg (post-conventional)
- (D) All three theories end their final stage at exactly the same age.

Lời giải chi tiết

Piaget's final stage (formal operational) is reached around age 12 and does not have a further stage for adulthood; Kohlberg's final level (postconventional reasoning) is only reached, if at all, by a minority of adults, generally later than age 12; Erikson's final stage (integrity vs. despair) is explicitly tied to late adulthood (65+), the latest of the three. Only Erikson's framework proposes distinct stages spanning all of adulthood and old age. **(B)**.

Bài tập luyện tập

A researcher exposes pregnant rats to chronic mild stress and later finds that certain stress-response genes in the offspring show altered patterns of expression, without any change to the underlying DNA sequence itself. Which concept does this best illustrate, and how does it relate to the classic nature–nurture debate?

Lời giải chi tiết

This illustrates **epigenetics**: an environmental factor (prenatal maternal stress) has altered chemical tags on the offspring's DNA that regulate whether specific genes are expressed, without changing the genetic sequence itself. This is relevant to the nature–nurture debate because it shows a direct biological mechanism by which **environment can shape gene expression**, further undermining any simple, clean separation between "genetic" and "environmental" causes of a developmental outcome — the environment can leave a literal, biologically embedded mark on how genes function.

Bài tập luyện tập

A parent tells their child, "As soon as you put away your toys, you may go outside to play with your friends." Which concept does this illustrate, and how does it differ from using a token or sticker as the reinforcer?

Lời giải chi tiết

This illustrates the **Premack principle**: a highly preferred, high-probability behavior (playing outside with friends) is used directly as the reinforcer for a less preferred, lower-probability behavior (putting away toys), rather than introducing any separate token, sticker, or other secondary reinforcer as an intermediate step. The key difference from a token system is that no exchangeable object is involved at all — access to the already-desired activity itself is the reinforcing consequence.

Bài tập luyện tập

Two groups of pigeons are trained to peck a key for food. Group 1 receives food for every single peck (continuous reinforcement). Group 2 receives food for only some pecks, on a variable-ratio schedule (partial reinforcement). After the behavior is well established in both groups, food is discontinued for both. Predict which group's pecking behavior will extinguish faster, and name the effect that explains this.

Lời giải chi tiết

Group 1 (continuous reinforcement) would be expected to extinguish **faster**. This is explained by the **partial reinforcement effect**: behavior maintained under partial/intermittent reinforcement (Group 2) is more resistant to extinction than behavior maintained under continuous reinforcement, because pigeons on the variable-ratio schedule have already learned that reinforcement does not follow every single response, so a string of unreinforced pecks does not clearly signal that reinforcement has stopped for good. Pigeons on continuous reinforcement, by contrast, have learned to expect reinforcement after literally every peck, so the sudden total absence of reinforcement is immediately noticeable, and their pecking drops off quickly.

Bài tập luyện tập

A student who has watched a favorite teacher successfully solve difficult math problems on the board many times reports feeling much more confident in her own ability to tackle a hard math problem, even before attempting it herself. Which concept from Bandura's broader social-cognitive theory does this best illustrate, and how does it relate to observational learning?

Lời giải chi tiết

This illustrates **self-efficacy**: the student's belief in her own capability to succeed at a specific task (solving hard math problems) has increased. This is directly related to observational learning because self-efficacy is often built, in part, by observing a model — especially one the observer identifies with or aspires to be like — succeed at a task; this can raise the observer's confidence in their own ability, above and beyond simply learning the specific steps the model used. Higher self-efficacy in turn tends to support greater persistence and effort when the student actually attempts the problem herself.

Bài tập luyện tập

Explain why researchers distinguish between attachment classifications observed in a normal Strange Situation procedure (secure, insecure-avoidant, insecure-resistant, disorganized) and a clinical diagnosis of reactive attachment disorder, and describe the kind of early caregiving history most associated with the latter.

Lời giải chi tiết

The four Strange Situation classifications describe **normal variation** in how infants organize their attachment behavior around a specific caregiver, based on that caregiver's typical responsiveness — even insecure classifications fall within the range of ordinary attachment patterns. **Reactive attachment disorder**, by contrast, is a rarer, more severe **clinical diagnosis** involving a persistent failure to form any normal, selective attachment bond to any caregiver at all. It is most associated with an early history of extreme, prolonged disruption in caregiving — severe neglect, abuse, or repeated changes in primary caregiver (for example, in some

children raised in profoundly under-resourced institutional settings) – well beyond the kind of caregiving variation that produces ordinary insecure (rather than absent) attachment patterns.

Bài tập luyện tập

According to Hazan and Shaver's extension of attachment theory into adulthood, an adult who says "I want to be close to my partner, but I constantly worry that they don't really love me and will eventually leave" is displaying a pattern most consistent with which attachment style, and which infant attachment classification does it parallel?

- (A) Secure — parallels secure infant attachment (C) Anxious/ambivalent — parallels insecure-resistant/ambivalent infant attachment
(B) Avoidant — parallels insecure-avoidant infant attachment (D) This statement reflects no recognizable attachment pattern

Lời giải chi tiết

Wanting closeness while simultaneously feeling intense worry about a partner's commitment or the relationship ending parallels the **anxious/ambivalent** adult attachment style, which Hazan and Shaver linked to **insecure-resistant/ambivalent** infant attachment — in both cases, the person strongly desires closeness but experiences persistent anxiety about whether that closeness/care will reliably be there. (C).

Bài tập luyện tập

Demographic data show that the average age of menarche in several countries decreased by roughly two to three years over the course of the 20th century. Which concept describes this pattern, and what is the most commonly proposed explanation?

Lời giải chi tiết

This pattern describes a **secular trend**: a generation-over-generation shift in the average timing of a developmental milestone (here, puberty onset/menarche). The most commonly proposed explanation is improved **nutrition and general childhood health** across the 20th century, which allowed puberty's hormonal triggers to occur earlier than in generations with more limited nutrition; other contributing factors (changes in body composition, environmental exposures) have also been proposed. This illustrates that even a strongly biologically driven process like puberty onset is still measurably responsive to environmental/historical conditions.

Bài tập luyện tập

An 11-month-old has repeatedly and successfully found a favorite toy hidden under Cloth A during several trials. On the next trial, the infant watches the toy being hidden under a different Cloth B right in front of them, yet still reaches first toward Cloth A. Identify this classic Piagetian phenomenon and Piaget's interpretation of what it reveals about early object permanence.

Lời giải chi tiết

This is the **A-not-B error**. Piaget interpreted this pattern as evidence that an infant's early grasp of object permanence is still fragile and tied to the infant's own previously reinforced motor

habit (reaching toward location A), rather than being a fully abstract, updated representation of the object's actual current location — full flexibility in tracking an object regardless of prior search history develops somewhat later within the sensorimotor stage.

Bài tập luyện tập

A journalist writes: "Since intelligence test scores are highly heritable within Country X, the average test-score gap between Country X and Country Y must be caused mainly by genetic differences between the two countries' populations." Explain the methodological error in this claim.

Lời giải chi tiết

This claim commits a serious and historically consequential error: it uses a **within-population** heritability estimate (how much of the variation *among individuals inside Country X* is associated with genetic differences, under Country X's particular environmental conditions) to draw a conclusion about the cause of a **between-population** difference (the gap between Country X and Country Y, which may have very different environmental conditions — nutrition, education, economic opportunity). Heritability estimates say nothing about the cause of differences *between* groups raised in different environments, even when heritability *within* each group is high; the between-group gap could be entirely environmental even if each population's internal variation is highly heritable. This exact reasoning error has historically been used to support scientifically unfounded and harmful claims (including eugenics), which is why psychologists are careful to flag this distinction explicitly.

Bài tập luyện tập

In one of Rescorla's experiments, a tone (CS) is paired with a mild shock (UCS) exactly as often in a "high contingency" group as in a "low contingency" group, but in the low-contingency group the shock is also frequently delivered even when the tone is absent, so the shock is just as likely with or without the tone. Predict which group develops stronger conditioned fear to the tone, and explain why using Rescorla's contingency model rather than a simple contiguity account.

Lời giải chi tiết

The **high-contingency** group would be expected to develop much stronger conditioned fear to the tone. A simple **contiguity** account (Pavlov's original emphasis on how often/closely in time the CS and UCS are paired) would predict similar conditioning in both groups, since the tone and shock are paired equally often in each. Rescorla's **contingency model** instead predicts the observed difference: in the low-contingency group, the tone provides no additional predictive information about the shock (the shock is just as likely without the tone), so the tone does not reliably signal increased shock risk and only weak conditioning occurs; in the high-contingency group, the tone genuinely predicts a higher probability of shock than the absence of the tone does, producing much stronger conditioning. This shows that what drives conditioning strength is how well a stimulus **predicts** an outcome, not merely how often the two occur together.

Bài tập luyện tập

Which of the following best summarizes Chomsky's critique of Skinner's operant account of language acquisition in *Verbal Behavior*?

- (A) Chomsky agreed completely with Skinner that reinforcement alone fully explains language acquisition.
- (B) Chomsky argued that reinforcement alone cannot explain children's ability to produce and understand entirely novel sentences never previously reinforced, nor the similar developmental timetable
- of grammar acquisition across very different cultures, and proposed an innate language-acquisition capacity instead.
- (C) Chomsky argued that language has no biological basis whatsoever and is purely learned through classical conditioning.
- (D) Chomsky argued that children do not actually acquire grammar until adulthood.

Lời giải chi tiết

Chomsky argued that a purely operant, reinforcement-based account could not explain how children reliably generate and comprehend completely novel sentence combinations they had never heard or been reinforced for, nor why children across widely different cultures and levels of adult correction still acquire complex grammar on a remarkably similar developmental timetable — leading him to propose an innate, biologically built-in capacity for language acquisition rather than a purely learned one. **(B)**.

Bài tập luyện tập

Two families both set very few rules or behavioral expectations for their children. In Family 1, parents are warm, affectionate, and emotionally engaged, but rarely enforce any consequences. In Family 2, parents are emotionally distant and largely uninvolved in their children's daily lives, in addition to setting few rules. Classify each family's parenting style according to Baumrind's framework, and predict which family's children are more likely to show serious attachment and self-regulation problems.

Lời giải chi tiết

Family 1 illustrates **permissive** parenting: low demandingness (few rules/consequences) combined with high warmth/responsiveness. Family 2 illustrates **uninvolved/neglectful** parenting: low demandingness combined with low warmth/responsiveness as well. **Family 2's** children are more likely to show serious attachment and self-regulation problems, since uninvolved/neglectful parenting is associated with the worst outcomes among Baumrind's styles (low warmth deprives children of the emotional responsiveness needed for attachment and self-regulation), whereas permissive parenting's main association is with poorer self-control and impulsivity, not the more severe attachment-related difficulties linked to uninvolved parenting.

Bài tập luyện tập

A researcher presents the same simple moral scenario to a 6-year-old, a 16-year-old, and a 45-year-old. Based on Kohlberg's research on the general relationship between age and moral reasoning level, which outcome is most likely, and what important caveat should accompany this prediction?

- (A) All three will reason at exactly the same stage, since moral reasoning is entirely fixed at birth.
- (B) The 6-year-old will most likely reason at the preconventional level, the 16-year-old at the conventional level, and the 45-year-old could be at the conventional or (less commonly) postconventional level; however, age only loosely predicts stage,
- (C) The 6-year-old is most likely to reason at the postconventional level, since young children are unconstrained by social convention.
- (D) Moral reasoning stage is entirely random and shows no relationship with age at all.

Lời giải chi tiết

Kohlberg's research found a general, imperfect trend: young children typically reason at the **preconventional** level, adolescents typically shift toward **conventional** reasoning, and only a minority of adults reach **postconventional** reasoning, generally later in life and often linked to more advanced (formal operational) cognitive development. This is only a loose trend, not a guarantee — many adults remain conventional reasoners for life, so age alone should never be treated as a reliable predictor of an individual's specific stage. (B).

Social Psychology and Personality

Mục tiêu Unit: Cách con người quy kết nguyên nhân cho hành vi (nội tại/tình huống, lỗi quy kết cơ bản, thiên kiến diễn viên-người quan sát, thiên kiến tự tôn); mối quan hệ giữa thái độ và hành vi qua thuyết bất hòa nhận thức và Mô hình Khả năng Tinh giản (con đường trung tâm/ngoại vi); các hiện tượng ảnh hưởng xã hội kinh điển (tuân theo của Asch, vâng lời của Milgram, các kỹ thuật gây ảnh hưởng, động lực nhóm, Thí nghiệm nhà tù Stanford); cơ sở tâm lý của định kiến/phân biệt đối xử và cách giảm thiểu; nguồn gốc của gây hấn và hành vi vị tha (hiệu ứng người đứng ngoài, mô hình quyết định của Latané & Darley); sự hấp dẫn giữa các cá nhân; các lý thuyết nhân cách lớn (phân tâm học của Freud, tân Freud, nhân văn, đặc nét, nhận thức-xã hội); các công cụ đánh giá nhân cách và tiêu chí độ tin cậy/độ hiệu lực; và ảnh hưởng của văn hoá (chủ nghĩa cá nhân/tập thể) lên khái niệm bản thân.

4.1 Social Cognition: Explaining Behavior

4.1.1 Attribution theory: dispositional versus situational

Every day, people act as amateur scientists, constantly generating explanations for why others (and themselves) behave the way they do. **Attribution theory**, developed largely by Fritz Heider and later Harold Kelley, describes how people explain the causes of behavior by sorting explanations into two broad categories.

A **dispositional attribution** (also called an internal or trait attribution) explains behavior by referring to a person's stable internal characteristics – personality traits, abilities, attitudes, or motives. A **situational attribution** (external or circumstantial attribution) explains behavior by referring to features of the environment or context – time pressure, social roles, bad luck, or the behavior of other people. If a classmate snaps at you, a dispositional attribution says “she is a rude person”; a situational attribution says “she must be having an awful day.”

Core distinction

Dispositional attribution: cause located inside the person (traits, ability, character). **Situational attribution:** cause located in the surrounding circumstances (context, role, environment, other people's actions). The same behavior can almost always be explained either way – which explanation an observer reaches for is itself a predictable psychological pattern, not a neutral, purely rational judgment.

GIẢI THÍCH TIẾNG VIỆT

VN

Quy kết nguyên nhân (attribution) là quá trình con người giải thích nguyên nhân của một hành vi. **Quy kết nội tại/đặc điểm (dispositional attribution)** gán nguyên nhân cho tính cách, năng lực, hay động cơ bên trong của người đó (VD: “anh ta trễ giờ vì lười biếng”). **Quy kết tình huống (situational attribution)** gán nguyên nhân cho hoàn cảnh bên ngoài (VD: “anh ta trễ giờ vì tắc đường”). Cùng một hành vi luôn có thể giải thích theo cả hai hướng – việc ta chọn hướng nào phản ánh những thiên kiến tâm lý có thể dự đoán được, chứ không phải một phán đoán khách quan tuyệt đối.

4.1.2 Kelley's covariation model

Harold Kelley extended attribution theory by describing three specific types of information people use, especially when they have observed a behavior across repeated occasions, to decide between a dispositional and a situational attribution – the **covariation model**. **Consensus** asks whether other people behave the same way in the same situation (high consensus: most people react this way; low consensus: this person's reaction is unusual). **Distinctiveness** asks whether this person behaves differently in different situations (high distinctiveness: the person reacts this way only in this specific situation; low distinctiveness: the person reacts this way across many different situations). **Consistency** asks whether this person behaves the same way on repeated occasions of the same situation (high consistency: the same reaction happens every time; low consistency: the reaction is a one-time occurrence).

According to Kelley, a **situational attribution** is favored when consensus is high, distinctiveness is high, and consistency is high (many people react this way, only in this situation, every time it occurs – pointing to something about the situation itself). A **dispositional attribution** is favored when consensus is low, distinctiveness is low, and consistency is high (few other people react this way, the person reacts similarly across many situations, and does so consistently – pointing to something about the person).

Ví dụ mẫu · Applying the covariation model

An employee, Trang, yells at a client during a meeting. Her manager investigates: no other employee who deals with this same client has ever yelled at them (low consensus); Trang is calm and even-tempered in nearly every other client meeting and personal interaction the manager has observed (high distinctiveness); but this is actually the third time Trang has yelled specifically at this particular client over the past year (high consistency). Using Kelley's covariation model, determine whether a dispositional or situational attribution is better supported, and identify what about the situation the manager should investigate further.

The pattern – low consensus, high distinctiveness, high consistency – points toward a **situational attribution** specific to this client rather than a general dispositional flaw in Trang. Because Trang is calm in essentially all other contexts (high distinctiveness) but reacts this way reliably and specifically with this one client (high consistency), something about this particular client relationship, not Trang's general disposition, is the more likely cause. The manager should investigate the interaction history between Trang and this specific client (e.g., whether the client has a pattern of provoking behavior) rather than concluding that Trang has an anger-management problem in general.

GIẢI THÍCH TIẾNG VIỆT

VN

Mô hình đồng biến (covariation model) của **Harold Kelley** bổ sung ba loại thông tin giúp quyết định quy kết nội tại hay tình huống: **sự đồng thuận (consensus)** – người khác có phản ứng giống vậy trong tình huống này không?; **tính đặc trưng (distinctiveness)** – người này có phản ứng khác đi trong các tình huống khác không?; **tính nhất quán (consistency)** – người này có phản ứng giống vậy mỗi lần gặp tình huống này không? Khi đồng thuận CAO + đặc trưng CAO + nhất quán CAO → quy kết TÌNH HUỐNG. Khi đồng thuận THẤP + đặc trưng THẤP + nhất quán CAO → quy kết NỘI TẠI (tính cách).

4.1.3 The fundamental attribution error

When judging *other people's* behavior, observers show a strong, well-documented bias: the **fundamental attribution error** (also called correspondence bias) is the tendency to overestimate the influence of dispositional factors and underestimate the influence of situational factors when explaining someone else's behavior. A driver who cuts you off is quickly labeled "reckless" or "rude,"

with little thought given to the possibility that they are rushing to an emergency.

This bias arises partly because an observer can directly see the other person acting, but usually cannot see the surrounding situational pressures that person is responding to – the actor's behavior is perceptually salient, while the actor's situation is often invisible to the observer.

4.1.4 Actor-observer bias

Closely related is the **actor-observer bias** (or actor-observer asymmetry): people tend to attribute their own behavior to situational factors, while attributing the identical behavior in *others* to dispositional factors. If you trip on a curb, you blame the uneven pavement (situational); if you watch someone else trip on the same curb, you are more likely to think “how clumsy” (dispositional). As an actor, you have first-hand access to the situational pressures acting on you; as an observer of someone else, you do not, so the fundamental attribution error dominates your judgment of them.

Ví dụ mẫu · Actor-observer bias in a classroom scenario

Minh fails a chemistry exam and explains it to himself by thinking, “that test had unusually tricky questions and I had a migraine that morning.” His classmate Lan, hearing about Minh's grade, thinks, “Minh clearly didn't study hard enough – he's just not disciplined.” Identify the bias illustrated and explain why the two explanations differ.

This is a textbook case of the **actor-observer bias**. Minh, as the *actor*, has direct access to the situational pressures he experienced (a hard test, a migraine) and attributes his failure situationally. Lan, as the *observer*, lacks access to those situational details and instead falls back on the fundamental attribution error, attributing Minh's failure to a stable disposition (lack of discipline). Note that if Minh had *succeeded* on the exam instead, self-serving bias (below) predicts he would attribute that success to his own ability rather than to the situation.

GIẢI THÍCH TIẾNG VIỆT

VN

Lỗi quy kết cơ bản (fundamental attribution error): khi giải thích hành vi của NGƯỜI KHÁC, con người có xu hướng phóng đại vai trò của yếu tố nội tại (tính cách) và xem nhẹ yếu tố tình huống. **Thiên kiến diễn viên–người quan sát (actor-observer bias)** là hệ quả của lỗi này: với hành vi của CHÍNH MÌNH, ta dễ quy kết cho tình huống (vì ta nhìn thấy rõ hoàn cảnh của mình); nhưng với hành vi của NGƯỜI KHÁC, ta lại quy kết cho tính cách của họ (vì ta không nhìn thấy hoàn cảnh của họ, chỉ thấy hành vi bề ngoài).

4.1.5 Self-serving bias

A third systematic pattern governs how people explain their own *outcomes* specifically (successes and failures, rather than behavior in general): the **self-serving bias** is the tendency to attribute one's own successes to dispositional (internal) causes and one's own failures to situational (external) causes. A student who aces a test says “I'm smart and I studied well”; the same student who fails a different test says “the test was unfair” or “I didn't have enough time.” This pattern helps protect and maintain self-esteem, and it is one of the most replicated findings in social psychology, observed across athletic performance, academic performance, and job outcomes.

(!) Lỗi thường gặp: Đừng nhầm lẫn ba khái niệm quy kết nghe có vẻ giống nhau. **Lỗi quy kết cơ bản** nói về việc giải thích hành vi của NGƯỜI KHÁC (thiên về đặc điểm cá nhân). **Thiên kiến diễn viên–người quan sát** là sự KHÁC BIỆT giữa cách ta giải thích hành vi của MÌNH (tình huống) so với hành vi của NGƯỜI KHÁC (đặc điểm). **Thiên kiến tự tôn (self-serving bias)** chỉ áp dụng cho KẾT QUẢ của CHÍNH MÌNH: thành công thì quy cho bản thân, thất bại thì quy cho hoàn cảnh. Trên đề thi AP, hãy đọc kỹ xem câu hỏi nói về hành vi của ai và về thành công/thất bại hay hành vi nói chung.

A basketball player who makes a game-winning shot says, "I've worked hard on my jump shot for years." The same player, after missing a similar shot the following week, says, "the gym lighting was terrible and I was still recovering from a cold." This pattern best illustrates:

- (A) The fundamental attribution error (C) The self-serving bias
(B) The actor-observer bias (D) Group polarization

Lời giải chi tiết

The player attributes a success (making the shot) to a dispositional cause (years of hard work) and a failure (missing the shot) to situational causes (lighting, illness) – exactly the pattern defined as the self-serving bias. (C).

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Thiên kiến tự tôn (self-serving bias): con người có xu hướng quy thành công của bản thân cho các yếu tố nội tại (năng lực, nỗ lực) nhưng quy thất bại của bản thân cho các yếu tố tình huống (may rủi, hoàn cảnh khó khăn). Đây là một cơ chế bảo vệ lòng tự trọng (self-esteem) và được ghi nhận rất nhất quán trong nhiều lĩnh vực: thể thao, học tập, công việc.

4.2 Attitudes, Cognitive Dissonance, and Persuasion

4.2.1 Attitudes and the attitude-behavior gap

An **attitude** is a learned evaluation of an object, person, idea, or event, typically described as having three components: a cognitive component (beliefs), an affective component (feelings), and a behavioral component (action tendencies). Common sense suggests attitudes should straightforwardly predict behavior – if you have a positive attitude toward exercise, you should exercise. In practice, the relationship between attitudes and behavior is often weak, especially when attitudes are vague, when situational pressures are strong, or when the specific behavior in question was not clearly considered when the attitude was measured. Attitudes predict behavior more reliably when they are strong, personally relevant, frequently expressed, and when situational constraints are minimal.

Behavior, however, has a strong and reliable effect on attitudes – acting a certain way tends to shift the attitudes that accompany that action, which is the basis of cognitive dissonance theory.

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VN

Thái độ (attitude) gồm ba thành phần: nhận thức (niềm tin), cảm xúc (cảm nhận), và hành vi (xu hướng hành động). Thái độ KHÔNG phải lúc nào cũng dự đoán tốt hành vi thực tế – đặc biệt khi thái độ mơ hồ hoặc áp lực tình huống quá lớn. Ngược lại, HÀNH VI lại có ảnh hưởng khá mạnh và ổn định lên thái độ theo sau nó – đây là nền tảng của thuyết bất hòa nhận thức.

4.2.2 Cognitive dissonance theory

Cognitive dissonance theory, developed by Leon Festinger, proposes that people experience psychological discomfort (**dissonance**) when they hold two or more cognitions (beliefs, attitudes, or awareness of their own behavior) that are inconsistent with one another. Because this discomfort is unpleasant, people are motivated to reduce it – often by changing an attitude to make it consistent with a behavior that has already occurred (since the behavior, once performed, cannot be undone).

Cognitive dissonance = the discomfort felt when two cognitions (or a cognition and a behavior) conflict. People resolve dissonance by (1) changing the attitude, (2) changing the behavior, (3) adding a new justifying cognition, or (4) minimizing the importance of the conflict. When a behavior cannot easily be undone, attitude change is the most common route out of dissonance.

The classic demonstration is the **Festinger and Carlsmith (1959)** experiment. Participants performed a tedious, boring task (turning pegs) and were then asked to tell the next “participant” (actually a confederate) that the task had been interesting and enjoyable. One group was paid \$1 for lying about the task; a second group was paid \$20. Afterward, participants rated how enjoyable they had actually found the task. Counterintuitively, participants paid only \$1 rated the task as significantly more enjoyable than participants paid \$20.

The explanation is dissonance reduction: the \$20 group had an obvious external justification for lying (a large sum of money), so they experienced little dissonance and their attitude toward the task did not need to change. The \$1 group had insufficient external justification for their lie – \$1 does not adequately explain to oneself why one just lied to a stranger – so they experienced strong dissonance between “I said the task was fun” and “I know the task was boring.” To resolve this dissonance, since the lie had already been spoken and could not be undone, many of them shifted their genuine attitude toward believing the task really had been somewhat enjoyable.

Ví dụ mẫu · Reasoning through the \$1/\$20 study

Explain, in terms of dissonance theory, why the \$1 group and not the \$20 group showed the larger attitude shift, and predict what would happen if a third group were paid \$1,000 for the same lie.

Dissonance arises when a behavior (lying that a boring task was fun) lacks sufficient external justification. The \$20 group had abundant justification – “*I said it because I was paid a substantial amount*” – so the inconsistency between belief and statement produced little discomfort, and their attitude toward the task stayed accurately negative. The \$1 group lacked a strong external excuse, so the inconsistency produced genuine dissonance, which they resolved by *internally* shifting their attitude to align with what they had said (“maybe it really wasn’t so bad”). Following the same logic, a group paid \$1,000 would again have overwhelming external justification for the lie, predicting little or no genuine attitude shift – dissonance-driven attitude change should be greatest when the incentive is just barely enough to obtain the behavior, not when it is very large.

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Nghiên cứu \$1/\$20 của **Leon Festinger và Carlsmith** là minh chứng kinh điển cho **thuyết bất hòa nhận thức (cognitive dissonance theory)**: người được trả chỉ \$1 để nói dối về một công việc nhàm chán lại thay đổi thái độ THẬT của mình (tin rằng công việc đó thú vị hơn) nhiều hơn người được trả \$20. Lý do: người được trả \$20 có đủ lý do biện minh bên ngoài cho lời nói dối nên không cảm thấy bất hòa; người chỉ được trả \$1 thiếu lý do biện minh, nên để giảm cảm giác bất hòa (giữa “tôi vừa nói dối” và “tôi biết đó là nói dối”), họ thay đổi chính thái độ bên trong của mình cho khớp với lời đã nói – vì hành vi (lời nói) đã xảy ra rồi, không thể rút lại.

4.2.3 Self-perception theory: an alternative account

Daryl Bem’s self-perception theory offers a different explanation for the same attitude-change findings that dissonance theory explains. Bem proposed that, especially when internal attitudes are weak, ambiguous, or not yet clearly formed, people infer their own attitudes by observing their own behavior – much as an outside observer would – rather than by resolving uncomfortable dissonance.

On this account, a participant in the Festinger and Carlsmith \$1 condition does not necessarily feel psychological discomfort at all; instead, upon later being asked how enjoyable the task was, they simply reason, “I told someone it was enjoyable, and I wasn’t paid much to say that, so I must have actually found it somewhat enjoyable” – inferring their attitude from their own freely chosen behavior rather than reducing dissonance.

The two theories generally agree on the prediction (insufficient external justification produces more attitude change), but disagree on the underlying mechanism: dissonance theory requires genuine psychological discomfort/arousal as the driving force, while self-perception theory requires no discomfort at all, only inference from behavior. Research has generally found support for both mechanisms operating in different circumstances: dissonance theory appears to fit situations involving attitudes that clearly conflict with behavior (producing measurable arousal), while self-perception theory appears to fit situations involving weak or previously unformed attitudes.

(!) Lỗi thường gặp: Đừng viết rằng thuyết bất hòa nhận thức và thuyết tự nhận thức (self-perception theory) là một. Cả hai đều dự đoán: biện minh bên ngoài CÀNG ÍT thì thay đổi thái độ CÀNG NHIỀU – nhưng khác nhau ở CƠ CHẾ: **bất hòa nhận thức (Festinger)** cho rằng có cảm giác KHÓ CHỊU thật sự (do hai nhận thức xung đột) thúc đẩy thay đổi thái độ để giảm khó chịu. **Tự nhận thức (Bem)** cho rằng KHÔNG cần cảm giác khó chịu – con người chỉ đơn giản suy luận thái độ của mình từ hành vi đã quan sát, giống như một người ngoài quan sát họ. Thuyết của Bem phù hợp hơn khi thái độ ban đầu còn MỜ HỒ hoặc CHƯA rõ ràng.

GIẢI THÍCH TIẾNG VIỆT

VN

Thuyết tự nhận thức (self-perception theory) của Daryl Bem là một cách giải thích khác cho cùng hiện tượng mà thuyết bất hòa nhận thức giải thích: khi thái độ nội tại còn yếu hoặc mờ hồ, con người suy luận thái độ của chính mình bằng cách **QUAN SÁT HÀNH VI** của bản thân (giống người ngoài quan sát), thay vì phải trải qua cảm giác bất hòa khó chịu. Hai thuyết đưa ra dự đoán giống nhau (ít biện minh bên ngoài → thay đổi thái độ nhiều hơn) nhưng khác cơ chế bên trong.

4.2.4 Measuring attitudes: explicit and implicit measures

Attitudes can be measured in two broad ways. **Explicit attitude measures** rely on direct self-report – asking someone straightforwardly to rate their agreement with a statement or their liking for a target – and are subject to social desirability bias (people may not honestly report attitudes they consider embarrassing or socially unacceptable). **Implicit attitude measures**, such as the **Implicit Association Test (IAT)**, attempt to capture automatic, less consciously controlled evaluative associations by measuring how quickly a person pairs concepts together (e.g., pairing photographs of different social groups with positive versus negative words), on the theory that faster pairings reflect stronger automatic associations. Implicit and explicit measures of the same underlying attitude often correlate only modestly, since implicit measures can reveal automatic associations that a person does not consciously endorse or is not fully aware of holding – a distinction relevant to understanding subtle or unconscious forms of prejudice (Section 6).

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Đo lường thái độ: đo lường tường minh (explicit) – hỏi trực tiếp, dễ bị ảnh hưởng bởi mong muốn tạo hình ảnh tốt (social desirability); **đo lường hàm ẩn (implicit)** – VD **Trắc nghiệm Liên kết Hàm ẩn (Implicit Association Test - IAT)**, đo tốc độ phản ứng khi ghép cặp khái niệm để phát hiện liên tưởng tự động, ít bị kiểm soát ý thức. Hai loại đo lường này thường chỉ tương quan ở mức trung bình – một người có thể có định kiến hàm ẩn (tự động) mà bản thân không nhận thức được hoặc không đồng thuận ở mức ý thức.

4.2.5 Persuasion: the Elaboration Likelihood Model

Persuasion is the process of changing someone's attitude, typically through communication. Richard Petty and John Cacioppo's **Elaboration Likelihood Model (ELM)** identifies two distinct routes by which persuasion can occur.

The **central route** operates when the audience is motivated and able to think carefully about a message, engaging in careful, effortful evaluation of the actual arguments, evidence, and logic presented. Central-route persuasion tends to produce attitude change that is relatively strong, durable, and resistant to counter-persuasion, because the new attitude is well-integrated with the person's other beliefs and reasoning.

The **peripheral route** operates when the audience is not motivated or not able to process the message carefully (due to distraction, low personal relevance, fatigue, or lack of expertise), so persuasion instead relies on superficial cues unrelated to the substance of the argument – the attractiveness or likability of the speaker, their perceived credibility or authority, the length of the message, or emotional associations (e.g., celebrity endorsements, upbeat music in an advertisement). Peripheral-route attitude change tends to be weaker, more superficial, and more susceptible to reversal because it was never based on the underlying merits of the argument.

Feature	Central route	Peripheral route
Processing style	Careful, effortful evaluation of arguments and evidence	Superficial reliance on cues unrelated to argument quality
When it occurs	High motivation and ability to process the message	Low motivation, distraction, low relevance, or lack of expertise
What drives change	Logic, evidence, quality of the argument itself	Speaker attractiveness/likability, credibility, emotional associations, message length
Durability of change	Strong, long-lasting, resistant to counter-argument	Weaker, more temporary, easily reversed
Typical example	Reading a detailed product review before buying a laptop	Buying a soft drink because a favorite celebrity appears in the ad

Ví dụ mẫu · Identifying the persuasion route

Two advertisements try to sell the same brand of running shoes. Ad A shows a famous athlete smiling while wearing the shoes, with upbeat music and no factual claims. Ad B presents a side-by-side comparison of cushioning material, weight, and durability test results from an independent lab. Identify which route of persuasion each ad relies on, and predict which produces more durable attitude change in a viewer who cares deeply about running performance.

Ad A relies on the **peripheral route**: celebrity likability and pleasant music are cues unrelated to the shoe's actual quality. **Ad B** relies on the **central route**: it supplies substantive evidence (material, weight, lab-tested durability) for the viewer to evaluate directly. For a viewer who is highly motivated (cares about running performance) and able to evaluate technical claims, Ad B's central-route appeal should produce a stronger and more durable attitude change, because the resulting attitude is grounded in evaluated evidence rather than an incidental association with a celebrity.

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Mô hình Khả năng Tinh giản (Elaboration Likelihood Model) của **Petty và Cacioppo** phân biệt hai con đường thuyết phục: **con đường trung tâm (central route)** – người nghe tập trung phân tích nội dung, lập luận, bằng chứng thực tế, tạo ra thay đổi thái độ bền vững, khó bị lật ngược; **con đường ngoại vi (peripheral route)** – người nghe dựa vào các tín hiệu bề ngoài không liên quan nội dung (độ hấp dẫn, uy tín người nói, cảm xúc), tạo ra thay đổi thái độ yếu và dễ mất

đi. Con đường nào được dùng phụ thuộc vào động lực và khả năng xử lý thông tin của người nghe tại thời điểm đó.

Communication research has identified additional factors that shape persuasion regardless of route. **Source credibility** – perceived expertise and trustworthiness of the communicator – generally increases persuasion, especially through the peripheral route, though a highly credible source can also make a strong central-route argument more compelling. The **sleeper effect** is a delayed increase in the persuasive impact of a message from a low-credibility source: immediately after hearing the message, audiences tend to discount it because they distrust the source, but over time people often forget the source while the message content itself is better retained, so the message's persuasive impact can paradoxically increase weeks later even though it decreased immediately after exposure.

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VN

Uy tín nguồn phát (source credibility) – mức độ chuyên môn và đáng tin cậy được cảm nhận của người truyền đạt – thường làm tăng hiệu quả thuyết phục, đặc biệt qua con đường ngoại vi. **Hiệu ứng “ngủ” (sleeper effect)**: một thông điệp từ nguồn có uy tín thấp ban đầu bị người nghe coi nhẹ, nhưng theo thời gian, khi người nghe QUÊN nguồn phát mà vẫn nhớ NỘI DUNG thông điệp, sức thuyết phục của thông điệp đó có thể tăng lên một cách nghịch lý sau vài tuần, dù ngay lúc đầu nó bị giảm hiệu quả vì nguồn kém tin cậy.

(!) **Lỗi thường gặp**: Đừng cho rằng con đường ngoại vi là “kém hiệu quả” theo mọi nghĩa – nó vẫn có thể thay đổi hành vi ngay lập tức (VD mua hàng ngay sau khi xem quảng cáo). Điểm khác biệt cốt lõi không phải là “hiệu quả ngay lúc đó” mà là **độ bền vững**: thay đổi thái độ qua con đường trung tâm có xu hướng tồn tại lâu và chống chịu được lập luận phản bác tốt hơn con đường ngoại vi.

4.3 Conformity and Obedience

4.3.1 Conformity: Asch's line-judgment experiments

Conformity is adjusting one's behavior or thinking to match a group standard, typically as a result of real or imagined group pressure. **Solomon Asch** designed a now-classic series of experiments to measure conformity under unambiguous conditions. A genuine participant sat with several confederates (secretly working with the experimenter) and was shown a reference line, then asked aloud, in turn, to state which of three comparison lines matched the reference line in length – an easy judgment with an objectively correct answer. On certain critical trials, all the confederates unanimously gave the same clearly incorrect answer before the real participant had to respond.

Asch found that, averaged across trials, roughly **1 in 3** responses conformed to the confederates' incorrect answer, and roughly **75%** of participants conformed to the wrong answer on at least one critical trial. In a control condition with no social pressure (participants answered privately or alone), errors were rare – under **1%**. Two variations sharply affected the conformity rate: when just **one** confederate broke unanimity and gave the correct answer (an ally), conformity dropped dramatically, to roughly **5–10%**; when the group size was small (just one or two confederates), conformity also dropped substantially, since unanimity and group size both matter more than sheer number of dissenters.

GIẢI THÍCH TIẾNG VIỆT

VN

Solomon Asch thiết kế thí nghiệm đánh giá độ dài đoạn thẳng để đo mức độ **tuân theo (conformity)**: người tham gia thực phải trả lời sau khi nghe nhiều người khác (thực chất là người phối hợp với thí nghiệm) đồng thanh đưa ra câu trả lời SAI rõ ràng. Kết quả: khoảng 1/3 số lượt trả lời bị ảnh hưởng theo nhóm sai; khoảng 75% người tham gia tuân theo cái sai ít nhất một lần;

khi trả lời một mình (không có áp lực nhóm) thì tỉ lệ sai chưa tới 1%. Khi có **MỘT** người trong nhóm dám nói đúng (một “đồng minh”), tỉ lệ tuân theo giảm mạnh xuống còn khoảng 5–10% – cho thấy tính **đồng thuận tuyệt đối (unanimity)** của nhóm quan trọng hơn số lượng người trong nhóm.

Variation of Asch's design	Approx. conformity rate	Interpretation
Answering privately, no group pressure	< 1% error	Baseline perceptual accuracy; conformity is not a perceptual illusion
Unanimous group of confederates gives wrong answer	≈ 33% of responses; ≈ 75% conform at least once	Strong normative pressure from unanimous, incorrect majority
One confederate breaks unanimity, gives correct answer	≈ 5–10%	Unanimity, not sheer group size, is the critical driver of conformity
Group size reduced to one or two confederates	Lower than with larger unanimous groups	Conformity increases with group size only up to a point, then levels off

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VN

Bảng trên tổng hợp các biến thể chính trong thiết kế của Asch: khi trả lời riêng lẻ (không áp lực nhóm), tỉ lệ sai gần như không đáng kể; khi đối mặt với một nhóm **ĐỒNG THUẬN TUYỆT ĐỐI** trả lời sai, tỉ lệ tuân theo tăng vọt; nhưng chỉ cần **MỘT** người phá vỡ sự đồng thuận đó, tuân theo giảm mạnh ngay – cho thấy **tính đồng thuận tuyệt đối (unanimity)** của nhóm là yếu tố quan trọng hơn số lượng thành viên nhóm.

4.3.2 Cross-cultural and demographic patterns

Both Asch's conformity paradigm and Milgram's obedience paradigm have been replicated across many countries and decades. Conformity rates on Asch-type tasks tend to be somewhat higher, on average, in more collectivist cultures (which place greater value on group harmony) than in more individualist cultures, though the general pattern – conformity rises sharply with a unanimous incorrect majority and drops sharply when unanimity is broken – has been replicated broadly across cultures. Milgram-style obedience studies, modified to meet modern ethical standards, have likewise found broadly similar obedience rates across numerous countries and time periods, suggesting the situational factors Milgram identified (proximity, legitimacy of authority, presence of dissenting peers) operate quite generally rather than reflecting something unique to the United States in the 1960s. Neither paradigm shows dramatic, consistent sex differences in overall conformity or obedience rates once situational factors are held constant, though some studies have found modest differences depending on the specific task domain.

GIẢI THÍCH TIẾNG VIỆT

VN

Cả hai mô hình Asch và Milgram đã được lặp lại ở nhiều quốc gia, nhiều thời kỳ khác nhau. Tỉ lệ tuân theo trong thí nghiệm kiểu Asch có xu hướng **CAO HƠN** một chút ở các nền văn hoá thiên về **TẬP THỂ** (coi trọng sự hoà hợp nhóm) so với nền văn hoá thiên về **CÁ NHÂN**, nhưng khuôn mẫu chung (tuân theo tăng vọt khi nhóm đồng thuận sai, giảm mạnh khi đồng thuận bị phá vỡ) vẫn được lặp lại rộng rãi. Tỉ lệ vâng lời kiểu Milgram (với các phiên bản đã điều chỉnh theo chuẩn đạo đức hiện đại) cũng khá tương đồng qua nhiều quốc gia và thời kỳ – cho thấy các yếu tố tình huống Milgram phát hiện (khoảng cách, tính hợp pháp của người ra lệnh, có người phản kháng) mang tính phổ quát, không chỉ đặc trưng cho nước Mỹ thập niên 1960.

4.3.3 Normative versus informational social influence

Two distinct motives can drive conformity. **Normative social influence** is conforming in order to be liked, accepted, or to avoid the discomfort of social rejection – going along with the group even while

privately believing the group is wrong (as in Asch's line studies, where participants often admitted afterward that they knew the correct answer but did not want to stand out). **Informational social influence** is conforming because the group provides useful evidence about reality, especially in ambiguous or unfamiliar situations where a person is genuinely uncertain what is correct – looking to others for guidance because they may know something you do not (e.g., following the crowd's pace when unsure how fast to walk down an unfamiliar, dim hallway).

Ví dụ mẫu · Normative or informational?

(a) A new employee wears a suit to their first day of work, even though they personally find it uncomfortable, because everyone else in the office dresses formally and they do not want to look out of place. (b) A hiker unsure whether a mushroom is safe to eat watches which mushrooms local foragers pick and eat, and copies them. Classify each case.

(a) is **normative social influence**: the employee privately disagrees with the norm (finds it uncomfortable) but conforms to avoid looking out of place – driven by the desire for social acceptance, not genuine uncertainty about what is objectively correct.

(b) is **informational social influence**: the hiker faces genuine ambiguity (which mushrooms are safe) and uses the foragers' behavior as evidence about an objective fact, not merely to fit in.

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Ảnh hưởng xã hội theo chuẩn mực (normative social influence): tuân theo để được nhóm chấp nhận, tránh bị từ chối – dù trong lòng biết nhóm sai (giống người tham gia thí nghiệm Asch). **Ảnh hưởng xã hội theo thông tin (informational social influence)**: tuân theo vì tin nhóm có thông tin đúng hơn mình, đặc biệt trong tình huống mơ hồ, không rõ đâu là đúng. Câu hỏi mẫu chốt để phân biệt: người đó tuân theo vì MUỐN ĐƯỢC THÍCH/CHẤP NHẬN, hay vì THỰC SỰ TIN nhóm đúng hơn mình?

4.3.4 Obedience: Milgram's shock-generator experiments

Obedience is complying with a direct command from an authority figure. **Stanley Milgram** designed one of the most famous (and most ethically debated) studies in psychology to measure how far ordinary people would go in obeying an authority figure who instructed them to harm another person.

In the basic design, a genuine participant was assigned the role of “teacher” and told to administer increasingly intense electric shocks to a “learner” (a confederate, in a separate room, who never actually received any shock) every time the learner answered a memory question incorrectly. The shock generator was labeled with voltage levels rising to a final switch marked “danger: severe shock” and beyond. As the “learner” pretended increasing distress – protesting, screaming, pounding on the wall, and eventually falling silent – an experimenter in a lab coat calmly instructed the teacher to continue, using a scripted series of verbal prods (“please continue,” “the experiment requires that you continue”).

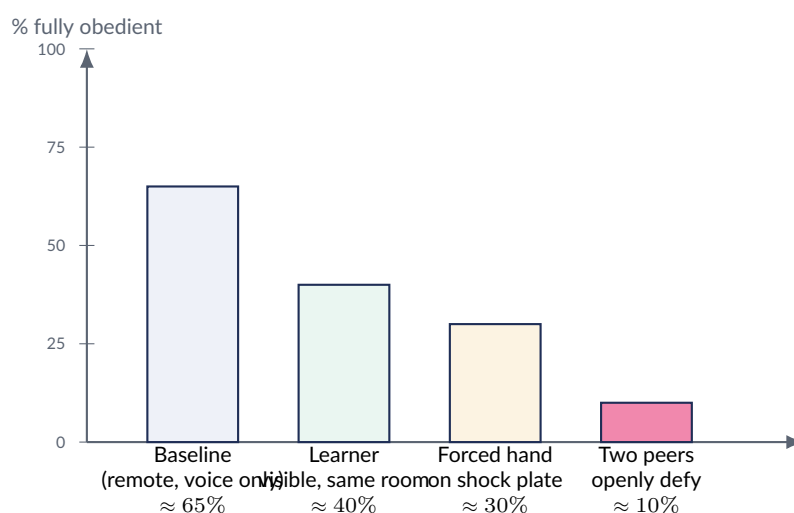
In the original baseline version, roughly **65%** of participants obeyed fully, continuing all the way to the highest shock level, despite many showing visible signs of significant distress themselves (sweating, trembling, nervous laughter).

Milgram's baseline finding: about 65% of participants obeyed the experimenter fully, delivering the maximum shock level, even though virtually all participants protested verbally at some point and many showed physical signs of distress. Obedience, not defiance, was the modal response under these specific conditions.

4.3.5 Factors that changed obedience rates

Milgram and later researchers systematically varied the experimental conditions, revealing that obedience is highly sensitive to situational factors:

- **Proximity to the victim:** obedience was highest when the learner was in a separate room, unseen and only heard (baseline, $\approx 65\%$); it dropped when the learner was in the same room and visible ($\approx 40\%$); it dropped further, to roughly 30% , when the teacher had to physically force the learner's hand onto a shock plate.
- **Proximity and legitimacy of the authority figure:** obedience dropped sharply (to roughly 20%) when the experimenter gave instructions by telephone from another room rather than standing in the same room, and dropped further if the authority figure appeared to be an ordinary person rather than a legitimate representative of a respected institution (the original study was conducted at Yale University, lending the authority figure institutional credibility).
- **Presence of defiant peers:** when the teacher was joined by two additional “teachers” (confederates) who both openly refused to continue past a certain shock level, obedience collapsed to roughly 10% – a dramatic demonstration that a visible model of defiance frees others to resist authority as well.



Approximate percentage of participants who obeyed fully (delivered the maximum shock) across selected variations of Milgram's obedience experiments. Reducing physical/psychological distance from the victim and introducing a model of peer defiance both sharply reduced obedience.

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VN Tỷ lệ vâng lời trong các thí nghiệm của **Milgram** thay đổi mạnh theo điều kiện: (1) **khoảng cách với người bị hại** – vâng lời cao nhất khi không thấy/không gần người học ($\approx 65\%$), giảm khi thấy trực tiếp ($\approx 40\%$), giảm sâu hơn khi phải tự tay ép tay người học lên tấm điện ($\approx 30\%$); (2) **tính hợp pháp/khoảng cách của người ra lệnh** – vâng lời giảm mạnh (xuống $\approx 20\%$) khi người thí nghiệm ra lệnh qua điện thoại thay vì có mặt trực tiếp; (3) **sự hiện diện của người phản kháng** – khi có hai “giáo viên” khác công khai từ chối tiếp tục, tỷ lệ vâng lời sụt xuống chỉ còn $\approx 10\%$, cho thấy một hình mẫu phản kháng có thể “giải phóng” người khác khỏi áp lực vâng lời.

4.3.6 Ethical controversy and its legacy

Milgram's experiments generated lasting ethical controversy. Participants were deceived (about the true purpose of the study and about the learner's safety), placed under substantial psychological distress without being able to easily withdraw, and some later reported lingering discomfort about what

they had learned about themselves. Milgram defended the work by pointing to its careful debriefing procedures (all participants were told the truth afterward and reunited with the unharmed “learner”) and to follow-up surveys suggesting most participants did not regret taking part. Nonetheless, the study – alongside the Stanford Prison Experiment discussed below – became a central case study in the development of modern research ethics standards, including the requirement of **informed consent**, the right to withdraw at any time without penalty, minimizing psychological and physical harm, and mandatory **debriefing**, now enforced in the United States through institutional review boards (IRBs) that must approve human-subjects research in advance.

Ví dụ mẫu · Evaluating research ethics

A modern institutional review board reviews a proposal to replicate Milgram’s original design exactly, including deceiving participants about the learner’s safety and using scripted prods to pressure continued participation. Explain why this proposal would almost certainly be rejected today, and describe what modification would be required to study obedience ethically.

The original design violates several core principles of modern research ethics: participants are **deceived** about a material fact (whether real harm is being caused), subjected to significant, foreseeable **psychological distress** without a straightforward, low-pressure way to withdraw, and the risk of harm is not minimized relative to the scientific value gained. A modern IRB would require, at minimum, that any deception be justified as scientifically necessary and be followed by full debriefing, that psychological risk to participants be minimized (e.g., using simulated or filmed confederates, or a paradigm that does not require participants to believe they are causing real harm, as in later replications using an “immersive digital” or role-play version of the paradigm), and that participants retain a clear, unpressured right to stop at any point. This is precisely why later researchers investigating obedience have generally moved to modified, lower-harm paradigms rather than replicating Milgram’s original procedure exactly.

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Thí nghiệm của Milgram gây tranh cãi đạo đức lớn: người tham gia bị **lừa dối** về mục đích thật và bị đặt vào tình trạng **căng thẳng tâm lý** đáng kể mà không dễ dàng rút lui. Dù Milgram có giải thích rõ sự thật sau thí nghiệm (debriefing) và khảo sát cho thấy phần lớn người tham gia không hối hận, nghiên cứu này (cùng với Thí nghiệm nhà tù Stanford) đã trở thành ví dụ kinh điển thúc đẩy ra đời các chuẩn đạo đức nghiên cứu hiện đại: **sự đồng ý có hiểu biết (informed consent)**, quyền rút lui bất cứ lúc nào, giảm thiểu tổn hại, và bắt buộc giải thích sau thí nghiệm (debriefing) – ngày nay được giám sát bởi các hội đồng đạo đức nghiên cứu (IRB).

(!) Lỗi thường gặp: Đừng viết rằng thí nghiệm Milgram “chứng minh con người vốn tàn ác.” Kết luận chính xác hơn là: hành vi vi phạm lời phụ thuộc **RẤT NHIỀU** vào các yếu tố **TÌNH HUỐNG** cụ thể (khoảng cách với nạn nhân, tính hợp pháp của người ra lệnh, có người phản kháng hay không) – tỉ lệ vi phạm dao động từ 10% đến 65% chỉ bằng cách thay đổi hoàn cảnh, cho thấy sức mạnh của tình huống lên hành vi con người, đúng như trọng tâm của tâm lý học xã hội.

4.4 Compliance Techniques and Group Dynamics

4.4.1 Compliance techniques

Compliance is agreeing to a specific request made by another person (distinct from obedience, which involves a command from a recognized authority, and from conformity, which involves matching group behavior without an explicit request). Social psychologists have identified several reliable techniques for increasing compliance.

The **foot-in-the-door technique** involves first getting a person to agree to a small request, which

increases the likelihood that they will later agree to a larger, related request – having already said “yes” once creates self-perception and consistency pressure toward saying “yes” again. The **door-in-the-face technique** works in the opposite order: starting with a large request that is expected to be refused, then following it with a smaller, more reasonable request, which appears more acceptable by comparison and often triggers a reciprocity-based desire to compromise. The **low-ball technique** involves getting a person to agree to a deal under favorable initial terms, then changing the terms to be less favorable (e.g., raising the price after the customer has committed) – because the person has already made a psychological commitment to the purchase, they often go through with the less favorable deal anyway rather than back out.

Technique	Sequence	Underlying mechanism
Foot-in-the-door	Small request accepted → larger related request follows	Self-perception/consistency: “I already said yes, so I must be the kind of person who helps”
Door-in-the-face	Large request refused → smaller request follows	Contrast effect and reciprocity: the smaller request looks reasonable by comparison
Low-ball	Favorable deal accepted → terms worsen before finalizing	Commitment: having already agreed, the person tends to follow through anyway

Ví dụ mẫu · Identifying compliance techniques

(a) A charity worker first asks a passerby to sign a petition about clean water (they agree), then asks the same person to donate \$20 to a well-building project. (b) A car salesperson quotes a very low price and gets the buyer to verbally commit, then reveals additional mandatory fees that raise the real price substantially, and the buyer goes through with the purchase anyway. Identify each technique.

(a) is **foot-in-the-door**: a small, easy request (signing a petition) precedes and increases compliance with a larger, related request (donating money).

(b) is the **low-ball technique**: the buyer commits under favorable terms, the terms are then made less favorable, and the prior commitment makes the buyer more likely to proceed anyway.

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Kỹ thuật chân trong cửa (foot-in-the-door): xin một yêu cầu nhỏ trước, sau đó xin yêu cầu lớn hơn – người đã đồng ý một lần dễ đồng ý tiếp vì muốn nhất quán với hành vi trước đó. **Kỹ thuật cửa trong mặt (door-in-the-face)**: đưa ra yêu cầu lớn (biết chắc sẽ bị từ chối) trước, sau đó hạ xuống yêu cầu nhỏ hơn – yêu cầu nhỏ trở nên “hợp lý” hơn khi so sánh, và người bị từ chối cảm thấy cần đáp lại bằng sự nhượng bộ. **Kỹ thuật hạ giá thấp (low-ball)**: cho đồng ý với điều kiện tốt trước, rồi thay đổi điều kiện thành kém hơn – người đã cam kết thường vẫn tiếp tục vì đã “lỡ” đồng ý.

4.4.2 Social facilitation and social loafing

The presence of other people changes individual performance in two opposite ways depending on the type of task. **Social facilitation** is the tendency to perform *better* on simple, well-learned, or dominant-response tasks when in the presence of others (an audience or co-actors), because the physiological arousal produced by being observed sharpens performance of tasks that do not require much deliberate thought. The same arousal, however, tends to *impair* performance on complex, unfamiliar, or poorly learned tasks, where extra arousal can be distracting – a skilled pianist may

play a familiar piece better in front of an audience, but the same pianist attempting to sight-read a difficult unfamiliar piece may perform worse under observation.

Social loafing is the tendency for individuals to exert *less* effort when working collectively in a group than when working individually, particularly on tasks where individual contributions cannot be identified or evaluated separately (e.g., a group tug-of-war, or a group project graded as a single combined score) – when personal accountability is diffused across the group, the incentive to work at full effort weakens. Social loafing is reduced when individual contributions remain identifiable, when the task is highly meaningful or personally involving, or when group members are highly cohesive.

Ví dụ mẫu · Facilitation or loafing?

(a) A veteran typist types noticeably faster when colleagues are nearby than when working alone, but a new employee learning an unfamiliar data-entry system makes more errors when supervisors watch. (b) Six students are assigned a single group grade for a class project with no way to identify who did which part; total group effort per person turns out to be markedly lower than what each would produce working alone on an individually graded project. Identify the phenomenon in each case, and explain the key situational difference that determines the outcome in (a).

(a) illustrates **social facilitation**: for the veteran typist, typing is a simple, well-learned task, so the arousal of being observed enhances performance; for the new employee, the unfamiliar data-entry system is a complex, poorly learned task, so the same arousal impairs performance. The key situational difference is task familiarity/complexity, not the mere presence of others.

(b) illustrates **social loafing**: because no individual's contribution can be identified within the shared group grade, individual accountability is diffused, and each student's incentive to exert full effort is reduced.

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Tạo điều kiện xã hội (social facilitation): có người khác quan sát/cùng làm giúp cải thiện hiệu suất ở các nhiệm vụ ĐƠN GIẢN, đã thành thục, nhưng lại làm giảm hiệu suất ở nhiệm vụ PHỨC TẠP, chưa quen – do sự kích hoạt sinh lý (arousal) khi bị quan sát. **Lười biếng xã hội (social loafing)**: mỗi cá nhân giảm nỗ lực khi làm việc trong NHÓM so với khi làm việc RIÊNG LẺ, đặc biệt khi không thể xác định rõ đóng góp của từng người (trách nhiệm bị phân tán). Cách giảm lười biếng xã hội: làm cho đóng góp cá nhân có thể nhận diện được, hoặc tăng tính gắn kết/ý nghĩa của nhiệm vụ với từng thành viên.

4.4.3 Deindividuation

Deindividuation is the loss of individual self-awareness and self-restraint that can occur in group or crowd settings, especially when anonymity is high and arousal is elevated. Stripped of the sense of being personally identifiable and accountable, individuals in a deindividuated state become more likely to act on impulses (aggressive, destructive, or otherwise norm-violating) that they would normally suppress when alone or clearly identifiable – a phenomenon invoked to explain behavior in large anonymous crowds, online anonymity, and, controversially, some of the guard behavior observed in the Stanford Prison Experiment (below).

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Mất cá tính hoá (deindividuation): khi ở trong một nhóm/đám đông lớn, đặc biệt khi được ẩn danh, con người mất đi cảm giác tự nhận diện bản thân và giảm khả năng tự kiểm chế, từ đó dễ có hành vi bốc đồng hoặc vi phạm chuẩn mực mà bình thường họ sẽ không làm khi đứng riêng lẻ, có thể bị nhận diện.

4.4.4 Group polarization

Group polarization is the tendency for group discussion among people who already share a similar view to strengthen and intensify that initial shared view, pushing the group's average position toward a more extreme version of its starting lean, rather than toward moderation. This can occur because group members are exposed mainly to arguments supporting the shared view (informational influence) and because expressing a stronger version of the shared position can earn social approval within the group (normative influence).

4.4.5 Groupthink

Groupthink, a term introduced by **Irving Janis**, describes the tendency within a highly cohesive decision-making group to prioritize consensus and group harmony over a realistic, critical appraisal of alternative courses of action. Janis originally developed the concept while analyzing several historically significant, poorly examined government policy decisions, arguing that strong group cohesion and insulation from outside opinion had suppressed critical debate before the decisions were made.

Janis identified several recurring symptoms of groupthink:

- **An illusion of invulnerability** – the group believes it cannot be making a serious mistake.
- **Suppression or dismissal of dissenting opinions**, sometimes by directly pressuring the dissenter to fall in line.
- **Self-censorship**, in which members who privately doubt the group's direction stay silent rather than voice their concerns.
- **A false sense of unanimity**, in which silence is mistaken for agreement, reinforcing the (mistaken) impression that everyone genuinely supports the decision.
- **Rationalization of warning signs**, in which the group collectively explains away information that should raise doubt about the chosen course of action.

Groupthink is more likely when a group is highly cohesive, insulated from outside perspectives, led by a directive leader who signals a preferred outcome, and under high stress or time pressure to reach a decision.

Ví dụ mẫu · Distinguishing polarization from groupthink

A city council, all of whom lean mildly in favor of a new development project before their meeting, discuss it and emerge strongly and unanimously in favor, having spent the meeting mostly reinforcing each other's supportive arguments and quickly dismissing the one member who raised financial concerns. Identify both phenomena present in this scenario and explain how they differ.

Group polarization is present because the council's initial mild lean toward the project became a strong, unanimous position after discussion – consistent with the pattern of group discussion intensifying an already-shared initial view. **Groupthink** is also present because the group prioritized apparent consensus over critical evaluation, specifically by dismissing the dissenting member's financial concerns rather than seriously weighing them. The two concepts overlap but are not identical: polarization describes the *direction and intensity* of the shift in opinion, while groupthink specifically describes a *breakdown in critical thinking* driven by the desire for harmony, often (as here) including active suppression of dissent.

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Phân cực nhóm (group polarization): khi thảo luận nhóm, quan điểm ban đầu mà đa số thành viên đã CÙNG CHIA SẺ sẽ trở nên CỰC ĐOAN HƠN (mạnh hơn theo chiều đã có), không phải trung hoà đi. **Tư duy nhóm (groupthink)** – khái niệm của **Irving Janis** – là hiện tượng nhóm gắn kết cao đặt sự đồng thuận, hoà hợp lên trên việc đánh giá thực tế các phương án khác nhau:

biểu hiện gồm cảm giác nhóm “không thể sai,” đàn áp ý kiến trái chiều, tự kiểm duyệt ý kiến bản thân, và ảo tưởng về sự nhất trí tuyệt đối. Hai hiện tượng có thể xảy ra cùng lúc nhưng khác nhau: phân cực nói về HƯỚNG và ĐỘ MẠNH của quan điểm, tư duy nhóm nói về sự SUY YẾU của tư duy phản biện.

(!) **Lỗi thường gặp:** Đừng đánh đồng phân cực nhóm với tư duy nhóm. Phân cực nhóm CÓ THỂ xảy ra một cách “lành mạnh” (nhóm cân nhắc kỹ rồi cùng đi đến một lập trường mạnh hơn dựa trên lý lẽ tốt). Tư duy nhóm LUÔN gắn với một khiếm khuyết trong QUÁ TRÌNH ra quyết định – cụ thể là việc bỏ qua/đàn áp thông tin và ý kiến trái chiều để giữ hoà khí nhóm.

4.5 Situational Power: The Stanford Prison Experiment

4.5.1 Design and findings

In 1971, **Philip Zimbardo** and colleagues at Stanford University conducted one of social psychology's most famous demonstrations of situational power over behavior. Male college-student volunteers, screened for psychological health, were randomly assigned to play the role of either “guard” or “prisoner” in a simulated prison built in a university basement. “Prisoners” were stripped of personal identity (given numbers instead of names, uniform smocks) and “guards” were given uniforms, sunglasses, and batons, with instructions to maintain order but no specific script for how to do so.

Planned to run for two weeks, the study was terminated after only about **six days** because guards had escalated to increasingly abusive, humiliating, and controlling treatment of prisoners, and several prisoners showed severe emotional distress. Zimbardo, who had assigned himself the role of prison superintendent within the simulation, argued that the rapid, dramatic behavioral changes in ordinary, psychologically healthy young men demonstrated the power of assigned social roles and institutional situations to override individual disposition – both deindividuation (anonymity behind uniforms and sunglasses) and diffusion of responsibility within an authority structure were proposed as contributing mechanisms.

4.5.2 Ethical and methodological criticism

The Stanford Prison Experiment is now also a central case study in ethical and methodological critique. Ethically, participants experienced substantial, foreseeable psychological harm, and Zimbardo's own dual role as both principal investigator and an active authority figure inside the simulation (“superintendent”) compromised his ability to intervene as an objective researcher when the situation deteriorated – a clear conflict of interest that would not be permitted under modern research ethics oversight.

Methodologically, later historical analysis of original recordings and Zimbardo's own instructions to the guards has raised serious questions about whether the guards' abusive behavior emerged spontaneously from the situation alone, or was substantially shaped by direct encouragement and coaching from the research team, which would undermine the study's claim to show a purely spontaneous, situational effect. Critics have also pointed out that the recruitment advertisement (seeking volunteers for a “prison study”) may have selectively attracted participants already higher in traits such as aggressiveness or authoritarianism, limiting how far the small, self-selected sample of participants generalizes to people in general (a sampling and **ecological validity** concern, since a simulated basement prison run for a handful of days differs substantially from a real custodial institution).

Ví dụ mẫu · Evaluating the Stanford Prison Experiment as a research design

A student claims the Stanford Prison Experiment definitively proves that “anyone, given a position of power, will inevitably become abusive.” Evaluate this claim using at least two specific methodological or ethical limitations of the study.

This claim overstates what the study can support. First, the study had **no true experimental control comparison** and a very **small, self-selected sample** of male college volunteers responding to an ad specifically about a prison study, which may have attracted participants already higher in certain traits, limiting generalizability to “anyone.” Second, later analysis suggests the guards’ behavior was not purely spontaneous but was influenced by direct coaching and demand characteristics introduced by the research team (including Zimbardo himself, acting as both lead researcher and an authority figure inside the simulation) – a serious **confound** that makes it difficult to attribute the abusive behavior to “the situation alone” as opposed to the specific instructions given. A more defensible conclusion is that the study is a suggestive, historically influential illustration of how assigned roles and institutional settings *can* shape behavior dramatically under some conditions, not a controlled demonstration that role assignment *inevitably* produces abuse in anyone.

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Thí nghiệm nhà tù Stanford (Stanford Prison Experiment) của **Philip Zimbardo** (1971) cho các nam sinh viên khoẻ mạnh về tâm lý đóng vai “giám ngục” hoặc “tù nhân” ngẫu nhiên trong một nhà tù giả lập. Dự kiến kéo dài 2 tuần nhưng phải dừng sau khoảng 6 ngày vì giám ngục trở nên lạm quyền, sỉ nhục tù nhân, và tù nhân có dấu hiệu suy sụp tâm lý nặng. Zimbardo cho rằng đây là minh chứng cho sức mạnh của VAI TRÒ và TÌNH HUỐNG lên hành vi con người. Tuy nhiên, nghiên cứu bị phê phán nặng về đạo đức (gây tổn hại tâm lý, Zimbardo vừa là nhà nghiên cứu vừa là “giám thị” trong thí nghiệm – xung đột lợi ích) và phương pháp (có dấu hiệu giám ngục được hướng dẫn/khuyến khích hành xử theo một cách nhất định, mẫu nghiên cứu nhỏ và có thể bị chọn lọc thiên lệch ngay từ đầu).

4.6 Prejudice and Discrimination

4.6.1 Stereotypes, prejudice, and discrimination

Social psychologists distinguish three related but conceptually separate components of intergroup bias. A **stereotype** is the cognitive component: a generalized belief about the characteristics of members of a social group, often overgeneralized and applied to individuals regardless of actual variation within the group. **Prejudice** is the affective/attitudinal component: a negative (or, less often studied, positive) feeling or evaluation directed at a person based on their group membership, typically rooted in a stereotype. **Discrimination** is the behavioral component: unjustified negative (or positive) treatment of individuals based on their group membership – the actual differential action, such as denying someone a job or a rental apartment because of their group identity.

Three components of intergroup bias: **stereotype** = belief (cognitive), **prejudice** = feeling/attitude (affective), **discrimination** = action (behavioral). A person can hold a stereotype without acting on it, and can discriminate for reasons other than personal prejudice (e.g., following a discriminatory institutional policy) – the three do not always travel together, though they frequently do.

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Ba thành phần của định kiến/phân biệt đối xử: **định kiến rập khuôn (stereotype)** – niềm tin khái quát (thường phi thực tế) về đặc điểm của một nhóm người (thành phần NHẬN THỨC); **định kiến/thái độ tiêu cực (prejudice)** – cảm xúc/đánh giá tiêu cực dựa trên tư cách thành viên nhóm (thành phần CẢM XÚC); **phân biệt đối xử (discrimination)** – hành động đối xử bất công dựa trên tư cách nhóm (thành phần HÀNH VI). Ba yếu tố này không nhất thiết luôn đi cùng

nhau: một người có thể có định kiến rập khuôn mà không hành động phân biệt, hoặc phân biệt đối xử vì tuân theo chính sách chứ không hẳn vì định kiến cá nhân.

4.6.2 Ingroup bias, outgroup homogeneity, and ethnocentrism

Ingroup bias (or ingroup favoritism) is the tendency to favor members of one's own group (the ingroup) over members of other groups (outgroups) in evaluation, resource allocation, and behavior, often occurring even when group membership is arbitrary or newly formed. **Outgroup homogeneity** is the tendency to perceive members of outgroups as more similar to one another ("they're all alike") than members of one's own ingroup, whom the same person readily perceives as diverse individuals. **Ethnocentrism** is evaluating other cultures using one's own culture's standards and values as the implicit baseline, often accompanied by the belief that one's own culture or group is superior.

Ví dụ mẫu · Ingroup bias and outgroup homogeneity

Members of a college's debate team, when asked to describe members of a rival school's debate team, offer a short, uniform description ("they're all overly aggressive and humorless"), but when asked to describe their own teammates, offer highly individualized descriptions ("Anh is quiet but ruthless in cross-examination, Mai is the strongest at rebuttals but nervous during opening statements..."). In a separate task, both teams are given identical debate performances to evaluate anonymously, and each team rates the performance attributed to their own school's debater more favorably than the identical performance attributed to the rival school. Identify the two distinct phenomena illustrated.

The uniform, generic description of the rival team alongside highly individualized descriptions of one's own team illustrates **outgroup homogeneity** (outgroup members are perceived as more alike than ingroup members). The more favorable rating given to an identical performance simply because it was attributed to one's own school illustrates **ingroup bias** (favoring the ingroup in evaluation, independent of actual merit). Both patterns can occur even though the two teams have a legitimate, real basis for rivalry (competition in debate), showing that these biases operate somewhat automatically once group boundaries are salient, not only under conditions of scarce-resource competition (contrast with realistic group conflict theory, below).

4.6.3 Origins of prejudice: scapegoat theory and realistic group conflict theory

Scapegoat theory proposes that prejudice increases when people are frustrated (for example, by economic hardship or social threat) and displace their frustration and aggression onto a relatively powerless outgroup, rather than the true, often more powerful or diffuse, source of their frustration – historically, this dynamic has been used to explain surges in prejudice against minority groups during periods of economic distress. **Realistic group conflict theory** proposes that prejudice and intergroup hostility increase when groups are in genuine competition over limited resources (jobs, land, political power); as competition intensifies, so does hostility toward the competing outgroup, even without any prior stereotype-driven animosity.

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Thiên kiến trong nhóm (ingroup bias): ưu ái thành viên nhóm mình hơn nhóm khác, dù ranh giới nhóm có thể hoàn toàn ngẫu nhiên/mới hình thành. **Tính đồng nhất ngoài nhóm (outgroup homogeneity):** xem các thành viên nhóm KHÁC "đều giống nhau," trong khi nhìn nhóm MÌNH đa dạng, khác biệt từng cá nhân. **Chủ nghĩa vị chủng (ethnocentrism):** lấy chuẩn mực văn hoá của mình làm gốc để đánh giá văn hoá khác, thường kèm niềm tin văn hoá mình ưu việt hơn. **Thuyết vật tế thần (scapegoat theory):** khi thất vọng/khó khăn (VD kinh tế suy thoái), con

người có xu hướng đổ lỗi và trút gậy hấn lên một nhóm yếu thế khác, thay vì nguyên nhân thật. **Thuyết xung đột nhóm thực tế (realistic group conflict theory):** định kiến tăng lên khi các nhóm thực sự cạnh tranh nguồn lực hạn chế (việc làm, đất đai, quyền lực).

4.6.4 Explicit and implicit prejudice

Modern prejudice research distinguishes prejudice that a person consciously holds and would openly report (**explicit prejudice**) from automatic, less consciously controlled negative associations that a person may not endorse or even be aware of holding (**implicit prejudice**), which can influence split-second judgments and behavior (e.g., in hiring decisions or split-second reactions) even in people who sincerely and consciously reject prejudiced beliefs. As discussed in Section 2, implicit prejudice is commonly assessed using reaction-time measures such as the Implicit Association Test, and research shows that implicit and explicit measures of prejudice toward the same group often correlate only modestly, since a person's automatic associations (often shaped by years of cultural exposure to stereotyped portrayals) can diverge from their consciously endorsed, explicit values.

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Định kiến tường minh (explicit prejudice): định kiến mà một người Ý THỨC được và sẵn sàng thừa nhận. **Định kiến hàm ẩn (implicit prejudice):** liên tưởng tiêu cực tự động, ít bị kiểm soát ý thức, có thể ảnh hưởng đến hành vi/quyết định nhanh (VD tuyển dụng) dù người đó thực lòng không đồng ý với định kiến đó. Hai loại định kiến này thường chỉ tương quan ở mức trung bình – một người có thể có giá trị tường minh không phân biệt đối xử nhưng vẫn mang định kiến hàm ẩn hình thành qua nhiều năm tiếp xúc văn hoá.

4.6.5 Reducing prejudice: the contact hypothesis

Gordon Allport's contact hypothesis proposes that prejudice between groups can be reduced through direct, sustained contact between members of the groups – but only under certain favorable conditions. Contact is most effective at reducing prejudice when the groups have **equal status** within the contact situation, share **common goals** that require genuine cooperation, engage in actual **co-operative interdependence** (working together toward a shared outcome, not just being physically present in the same space), and the contact is supported by broader **institutional/authority sanction** (e.g., endorsed by a school, workplace, or community leadership). Mere proximity or contact without these conditions can fail to reduce prejudice, and in some cases even increase intergroup tension.

Ví dụ mẫu · Applying the contact hypothesis

Two rival schools merge students into a single combined sports league. In one version, students from both schools are placed on entirely separate teams that never interact except during matches. In another version, students from both schools are mixed onto the same integrated teams, coached to pursue a shared championship goal, with strong support from both schools' administrations. Predict which version is more likely to reduce prejudice between the two student groups, citing the conditions of the contact hypothesis.

The **integrated-team version** is far more likely to reduce prejudice. It satisfies the key conditions Allport identified: students from both schools have **equal status** as teammates, they share a **common goal** (winning the championship) that requires **genuine cooperation** rather than passive coexistence, and the arrangement carries **institutional support** from both schools' administrations. The separate-teams version, by contrast, provides only competitive, non-cooperative contact (rivals meeting only as opponents), which the contact hypothesis predicts is unlikely to reduce – and may even reinforce – intergroup prejudice.

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Giả thuyết tiếp xúc (contact hypothesis) của **Gordon Allport**: tiếp xúc giữa các nhóm có thể giảm định kiến, nhưng CHỈ khi đủ điều kiện: (1) hai nhóm có **vị thế bình đẳng** trong tình huống tiếp xúc, (2) có **mục tiêu chung**, (3) thực sự **hợp tác phụ thuộc lẫn nhau** (không chỉ đứng cạnh nhau), và (4) được **thể chế/cấp trên ủng hộ**. Thiếu các điều kiện này, tiếp xúc đơn thuần (VD chỉ ở gần nhau hoặc thi đấu đối đầu) có thể **KHÔNG** giảm định kiến, thậm chí làm tăng thêm.

4.7 Aggression and Prosocial Behavior

4.7.1 Biological influences on aggression

Aggression is behavior intended to cause harm to another individual, physically or verbally. Biological research has identified several contributing influences: **genetic factors** (twin and adoption studies suggest a heritable component to aggressive tendencies); **testosterone**, a hormone whose levels correlate with aggressive behavior across species, though the relationship in humans is more modest and bidirectional than once assumed (testosterone can influence aggression, and aggressive/dominant experiences can also raise testosterone); brain structures including the **amygdala** (heightened reactivity is associated with increased aggressive responding to perceived threat) and the **frontal lobes** (which normally exert inhibitory control over impulsive aggressive responses – damage to the frontal lobes is associated with increased impulsivity and aggression); and **alcohol**, which reduces inhibition and impairs the frontal-lobe processes that would otherwise restrain aggressive impulses, and is strongly associated with increased aggressive behavior in intoxicated individuals.

4.7.2 Psychological and environmental influences: the frustration-aggression hypothesis

Beyond biology, aggression is strongly shaped by learning and situational triggers. Consistent with Albert Bandura's broader account of observational learning (Section 10), children and adults who repeatedly observe aggressive models – whether real people or aggressive figures in television, film, or video games – are more likely to imitate aggressive behavior themselves, particularly when the observed aggression appears to be rewarded or goes unpunished. This does not mean media exposure is the only or even the primary cause of real-world aggression, but it is one well-documented environmental input alongside aversive environmental conditions (heat, crowding, physical pain) and frustration. The **frustration-aggression hypothesis**, proposed by **John Dollard** and colleagues, states that frustration – the blocking of a goal-directed activity – increases the likelihood of aggressive behavior. Aggression triggered by frustration is not always directed at its true source; it is frequently **displaced** onto a safer or more available target, connecting this hypothesis back to the defense mechanism of displacement and to scapegoat theory's account of prejudice.

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Ảnh hưởng lên **gây hấn (aggression)** gồm hai nhóm: **sinh học** – yếu tố di truyền, hormone **testosterone**, hoạt động của **hạch hạnh nhân (amygdala)** (phản ứng với đe dọa) và **thùy trán (frontal lobe)** (ức chế xung động, tổn thương thùy trán làm tăng gây hấn), và **rượu** (làm giảm khả năng tự kiểm chế của thùy trán); **tâm lý/môi trường** – học tập qua quan sát mô hình gây hấn, môi trường bất lợi (nóng, chật chội, đau), và đặc biệt là **sự thất vọng (frustration)**. **Giả thuyết thất vọng-gây hấn (frustration-aggression hypothesis)** của **John Dollard** và đồng nghiệp: khi một hoạt động hướng đến mục tiêu bị cản trở, khả năng xuất hiện hành vi gây hấn tăng lên – và gây hấn đó thường bị **dịch chuyển (displaced)** sang một đối tượng khác an toàn hơn, không phải nguồn gây thất vọng thật sự.

4.7.3 Altruism, the bystander effect, and diffusion of responsibility

Altruism is prosocial behavior motivated by a genuine concern for another's welfare, without expectation of personal reward. One of social psychology's most influential lines of research on *failures*

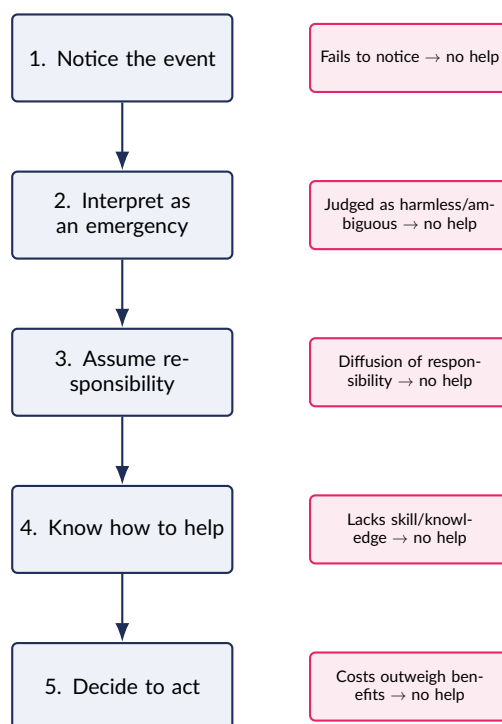
of prosocial behavior grew out of the 1964 murder of Kitty Genovese in New York City, in which media reports claimed (with details later shown to be exaggerated) that numerous witnesses failed to intervene or call for help. This case inspired **John Darley** and **Bibb Latané** to study the conditions under which bystanders do or do not help.

The **bystander effect** is the finding that an individual is *less* likely to help a person in need when other bystanders are present than when the individual is alone – counterintuitively, more witnesses can mean a lower probability that any one of them acts. A central mechanism behind the bystander effect is **diffusion of responsibility**: when multiple bystanders are present, each individual feels less personal responsibility to act, assuming (consciously or not) that someone else will step in, or has already done so.

4.7.4 Latané and Darley's decision model of bystander intervention

Latané and Darley proposed a five-step decision sequence that a bystander must complete, in order, before helping behavior occurs – a failure at *any* step results in no intervention:

1. **Notice** the event is happening at all (distraction or a busy environment can prevent this first step).
2. **Interpret** the event as an emergency requiring help (ambiguous situations – is that a fight or a game? is that person injured or just resting? – can lead bystanders to interpret the event as a non-emergency, and this interpretation step is itself distorted by informational social influence: bystanders often look to each other's calm reactions as evidence that nothing is wrong).
3. **Assume responsibility** for acting (this is precisely the step disrupted by diffusion of responsibility when many bystanders are present).
4. **Know how to help** (a bystander who assumes responsibility but lacks relevant skill or knowledge, e.g., how to perform first aid, may still fail to act effectively).
5. **Decide to act**, weighing the potential costs (risk, embarrassment, effort) against the benefits of helping.



Latané and Darley's five-step decision model of bystander intervention. Helping requires successfully passing through all five steps in sequence; a breakdown at any single step (right column) results in no intervention.

Ví dụ mẫu · Applying the decision model to a scenario

A man collapses on a crowded subway platform. Several people glance over but continue walking, assuming he is likely intoxicated rather than having a medical emergency; one bystander looks concerned but sees no one else reacting and concludes it must not be serious; nobody calls for help. Using Latané and Darley's model, identify the specific step (or steps) at which the intervention process broke down.

The breakdown occurs primarily at **Step 2 (interpret as an emergency)**: bystanders default to a non-emergency interpretation (intoxication rather than a medical event), partly reinforced by **informational social influence** – the concerned bystander looks to others' lack of visible concern as evidence that the situation is not serious, and revises their own interpretation downward as a result. Because the event is never collectively interpreted as an emergency, the process never reaches Step 3 (assuming responsibility), where **diffusion of responsibility** would also likely have weakened any single bystander's felt obligation to act, given the number of witnesses present.

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Hiệu ứng người đứng ngoài (bystander effect): một người có xu hướng ÍT giúp đỡ người gặp nạn khi có NHIỀU người xung quanh hơn là khi họ ở MỘT MÌNH – do **khuếch tán trách nhiệm (diffusion of responsibility)**, mỗi người cảm thấy trách nhiệm cá nhân giảm đi khi nghĩ người khác sẽ/đã hành động. **Mô hình quyết định 5 bước của Latané & Darley**: (1) nhận ra sự việc đang xảy ra, (2) diễn giải đó là một tình huống cấp cứu, (3) nhận trách nhiệm hành động, (4) biết cách giúp, (5) quyết định hành động. Chỉ cần **THẤT BẠI** ở MỘT bước là không có hành vi giúp đỡ xảy ra – vì vậy khi phân tích một tình huống thực tế, cần xác định rõ sự cố xảy ra ở bước nào.

4.7.5 Social exchange theory and prosocial norms

Social exchange theory proposes that human relationships and helping behavior can be understood partly through a cost-benefit analysis: people help others when the perceived benefits of helping (social approval, reduced distress at witnessing suffering, reciprocity expectations) outweigh the perceived costs (time, risk, effort, embarrassment). Two social norms are frequently cited as motivating helping independent of a strict cost-benefit calculation: the **reciprocity norm**, the expectation that helping others increases the likelihood that they (or others) will help you in the future, and the **social-responsibility norm**, the learned expectation that people ought to help those who are dependent on them or genuinely in need, regardless of what they can offer in return (e.g., helping a lost child or an injured stranger).

(!) Lỗi thường gặp: Đừng lẫn giữa **chuẩn mực đáp trả (reciprocity norm)** và **chuẩn mực trách nhiệm xã hội (social-responsibility norm)**. Chuẩn mực đáp trả dựa trên kỳ vọng “có qua có lại” – giúp người khác vì mong họ (hoặc người khác) sẽ giúp lại mình. Chuẩn mực trách nhiệm xã hội **KHÔNG** đòi hỏi sự đáp trả – ta giúp người phụ thuộc/khó khăn (VD trẻ nhỏ, người bị thương) đơn giản vì họ **CẦN** được giúp, bất kể họ có thể đáp trả gì hay không.

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Thuyết trao đổi xã hội (social exchange theory): hành vi giúp đỡ được xem như một phép tính chi phí-lợi ích – người ta giúp khi lợi ích cảm nhận được (được khen, giảm bớt khó chịu khi thấy người khác đau khổ, kỳ vọng được đáp lại) lớn hơn chi phí (thời gian, rủi ro, công sức). **Chuẩn mực đáp trả (reciprocity norm)**: giúp vì kỳ vọng được giúp lại. **Chuẩn mực trách nhiệm xã hội (social-responsibility norm)**: giúp người phụ thuộc/cần giúp đỡ dù không mong được

đáp trả.

4.8 Interpersonal Attraction

4.8.1 Proximity and the mere exposure effect

Proximity – physical or functional closeness – is one of the strongest and most consistent predictors of who becomes friends or romantic partners, simply because closeness increases the frequency of interaction. Related to proximity is the **mere exposure effect**: repeated exposure to a novel stimulus (including unfamiliar people, images, sounds, or words) tends to increase one's liking for that stimulus, even without conscious awareness of having been exposed to it before. Together, these findings explain why people frequently form relationships with neighbors, classmates, and coworkers rather than with equally compatible people they simply never encounter repeatedly.

4.8.2 Similarity, physical attractiveness, and the matching hypothesis

Similarity in attitudes, values, interests, and background strongly predicts attraction and relationship satisfaction – the popular notion that “opposites attract” is not well supported by research; people are consistently more drawn to others who share their views and background. **Physical attractiveness** reliably influences initial attraction and is also subject to a **halo effect**, in which physically attractive people are often assumed (without direct evidence) to also possess other positive traits, such as competence or kindness.

Taken together, proximity, similarity, and attractiveness can be understood through a general **reward theory of attraction**: people are drawn to relationships that are rewarding at relatively low cost – proximity reduces the cost (time, effort) of maintaining contact; similarity reduces the cost of friction and disagreement while providing the reward of validation; and physical attractiveness (along with the halo effect's assumed positive traits) is itself experienced as rewarding to be around. This framework connects interpersonal attraction back to the cost-benefit logic of social exchange theory introduced earlier in this unit (Section 7).

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Thuyết tưởng thưởng của sự hấp dẫn (reward theory of attraction) tổng hợp các yếu tố trên: con người bị thu hút bởi những mối quan hệ mang lại LỢI ÍCH với CHI PHÍ thấp – sự gần gũi làm giảm chi phí duy trì liên lạc; sự tương đồng làm giảm xung đột và tăng cảm giác được xác nhận (validation); sự hấp dẫn ngoại hình (kèm hiệu ứng vòng hào quang) tự nó mang lại cảm giác tưởng thưởng khi ở gần. Khung lý thuyết này liên kết trực tiếp với logic chi phí-lợi ích của thuyết trao đổi xã hội đã học ở phần trước.

The **matching hypothesis** proposes that people tend to select romantic partners who are roughly similar to themselves in physical attractiveness (and other traits, such as social status), rather than uniformly pursuing the most attractive partner available – partly because pursuing a much more attractive partner carries a higher perceived risk of rejection, so people calibrate their romantic pursuits toward partners of comparable desirability.

Ví dụ mẫu · Applying attraction principles

A dating-app study finds that (a) users are far more likely to match with people who live within a short distance of them than with equally compatible people who live farther away, and (b) among matched couples who stay together long-term, self-rated physical attractiveness scores of the two partners are highly correlated with each other (rather than everyone simply pursuing the highest-rated partners). Identify the principle illustrated by each finding.

(a) illustrates **proximity**: physical/functional closeness increases the frequency of interaction

and thus the likelihood of forming a relationship, independent of underlying compatibility.

(b) illustrates the **matching hypothesis**: long-term partners tend to be similar to each other in physical attractiveness rather than everyone converging on the single most attractive available partners, consistent with people calibrating romantic pursuit toward partners of comparable desirability.

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Các yếu tố dự đoán sự **hấp dẫn giữa các cá nhân**: **sự gần gũi (proximity)** – ở gần nhau làm tăng tần suất tương tác, từ đó tăng khả năng trở thành bạn/người yêu; **hiệu ứng tiếp xúc thường xuyên (mere exposure effect)** – tiếp xúc lặp lại với một điều gì đó mới lạ làm tăng mức độ yêu thích, dù không nhận thức được đã từng tiếp xúc; **sự tương đồng (similarity)** – về giá trị, sở thích, quan điểm (không phải “trái dấu hút nhau” như quan niệm phổ biến); **sự hấp dẫn ngoại hình kèm hiệu ứng vòng hào quang (halo effect)** – người đẹp thường bị gán thêm các đặc điểm tốt khác mà chưa có bằng chứng; và **giả thuyết ghép đôi tương xứng (matching hypothesis)** – người ta có xu hướng chọn đối tác có mức độ hấp dẫn tương đương mình, để giảm rủi ro bị từ chối.

4.9 Personality: Psychoanalytic Theory

4.9.1 Freud's structure of personality

Sigmund Freud's psychoanalytic theory proposes that personality arises from the dynamic interaction of three structures. The **id** operates on the **pleasure principle**, seeking immediate gratification of basic biological drives (sex, aggression, hunger) without regard for reality or morality; it is present from birth and operates entirely in the unconscious. The **ego** operates on the **reality principle**, mediating between the id's demands, the constraints of the external world, and the superego's moral demands – the ego is the seat of conscious decision-making and uses defense mechanisms (below) to manage conflict among these competing pressures. The **superego** represents internalized moral standards and societal rules, developed through upbringing, and includes both an idealized “ego-ideal” and a punishing conscience that produces guilt when its standards are violated.

Id (pleasure principle, entirely unconscious, seeks immediate gratification) ↔ **Ego** (reality principle, largely conscious, mediates and manages conflict) ↔ **Superego** (morality/conscience, partly unconscious, internalized standards). Freud viewed personality and behavior as the outcome of ongoing conflict and negotiation among these three structures.

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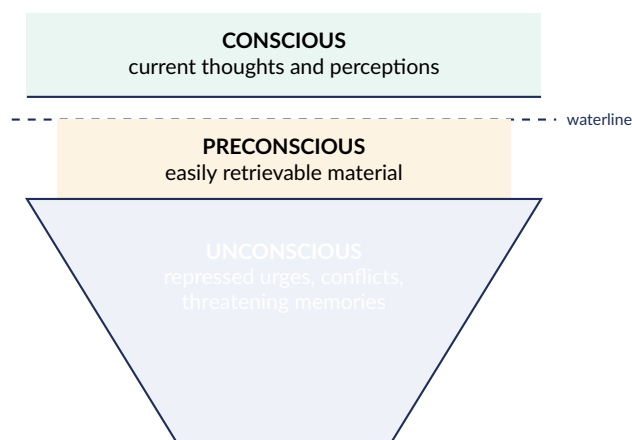
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Theo **Sigmund Freud**, nhân cách gồm ba cấu trúc: **cái Ấy (id)** – hoạt động theo nguyên tắc khoái lạc, đòi thỏa mãn ngay lập tức các bản năng (tính dục, gây hấn), hoàn toàn ở tầng vô thức; **cái Tôi (ego)** – hoạt động theo nguyên tắc thực tế, làm trung gian điều hoà giữa cái Ấy, thực tế bên ngoài, và cái Siêu Tôi; **cái Siêu Tôi (superego)** – đại diện cho các chuẩn mực đạo đức nội tâm hoá, gây ra cảm giác tội lỗi khi vi phạm. Nhân cách và hành vi, theo Freud, là kết quả của sự xung đột và thương lượng liên tục giữa ba cấu trúc này.

4.9.2 Levels of awareness

Freud also divided mental life into three levels of awareness. The **conscious** mind holds thoughts and perceptions one is currently aware of. The **preconscious** holds material that is not currently in awareness but can be readily brought to consciousness (e.g., a memory you are not thinking about right now but could easily recall). The **unconscious** holds thoughts, memories, and urges – especially

threatening or unacceptable ones – that have been kept out of conscious awareness, yet Freud believed continue to exert a powerful influence on behavior, emotion, and even slips of speech (“Freudian slips”).



Id: entirely unconscious **Superego:** partly unconscious **Ego:** spans all three levels

Freud's “iceberg” model. Only a small portion of mental life (the conscious tip) is directly visible; the bulk of mental content, including the id's drives, lies submerged in the unconscious.

GIẢI THÍCH TIẾNG VIỆT

VN Mô hình “tảng băng chìm” của Freud minh họa ba tầng ý thức: **ý thức (conscious)** – phần nổi trên mặt nước, những gì ta đang nhận thức ngay lúc này; **tiền thức (preconscious)** – ngay dưới mặt nước, dễ dàng gọi lại khi cần; **vô thức (unconscious)** – phần lớn nhất, chìm sâu dưới nước, chứa các xung động, ký ức, xung đột bị dồn nén. **Cái Ấy** nằm hoàn toàn trong vô thức; **cái Siêu Tôi** một phần vô thức; **cái Tôi** trải rộng qua cả ba tầng, vì nó phải liên tục điều phối giữa ý thức và vô thức.

4.9.3 Psychosexual stages

Freud proposed that personality develops through a fixed sequence of **psychosexual stages**, each centered on a different erogenous zone, and that unresolved conflict at any stage can produce a lasting **fixation** – a personality pattern reflecting problems from that stage persisting into adulthood.

Stage	Approx. age	Focus	Possible fixation
Oral	0–18 months	Pleasure centered on the mouth (sucking, biting)	Overeating, smoking, nail-biting, or excessive dependency
Anal	18 months–3 years	Pleasure/control centered on bowel and bladder elimination; toilet training	Anal-retentive (rigid, excessively neat, stingy) or anal-expulsive (messy, disorganized) traits
Phallic	3–6 years	Pleasure centered on the genitals; unconscious attraction to the opposite-sex parent (Oedipus/Electra dynamics), resolved by identifying with the same-sex parent	Unresolved conflict linked (in Freud's account) to later difficulties with authority or gender identity
Latency	6 years–puberty	Sexual urges dormant; energy redirected to social and intellectual development	(No specific fixation; a quiet consolidation stage)
Genital	Puberty onward	Mature sexual interest directed toward others, if earlier stages resolved well	(Successful resolution predicts healthy adult sexuality/relationships)

GIẢI THÍCH TIẾNG VIỆT

VN

Các giai đoạn tâm lý tính dục (psychosexual stages) của Freud: **miệng (oral, 0–18 tháng)** – khoái lạc qua miệng (bú, cắn); **hậu môn (anal, 18 tháng–3 tuổi)** – khoái lạc/kiểm soát qua đại tiểu tiện, gắn với huấn luyện đi vệ sinh; **dương vật/bộ phận sinh dục (phallic, 3–6 tuổi)** – khoái lạc qua bộ phận sinh dục, hình thành cảm xúc gắn bó vô thức với cha/mẹ khác giới (phức cảm Oedipus/Electra), giải quyết bằng cách đồng nhất hoá với cha/mẹ cùng giới; **ẩn tàng (latency, 6 tuổi–dậy thì)** – xung động tính dục tạm lắng, tập trung phát triển xã hội/trí tuệ; **sinh dục (genital, từ dậy thì)** – hứng thú tính dục trưởng thành hướng đến người khác. **Cố định (fixation)** xảy ra khi xung đột ở một giai đoạn không được giải quyết, để lại dấu ấn trong tính cách trưởng thành.

4.9.4 Defense mechanisms

The **ego** manages anxiety arising from conflict among the id, superego, and reality using largely unconscious **defense mechanisms** that distort or disguise the true source of anxiety.

Defense mechanism	Definition	Example
Repression	Pushing a threatening thought, memory, or impulse out of conscious awareness entirely	A person has no conscious memory of a frightening childhood accident
Denial	Refusing to acknowledge a painful or threatening reality	A person with a serious illness insists nothing is wrong and refuses treatment
Projection	Attributing one's own unacceptable feelings or impulses to someone else	A person who secretly harbors hostility insists that others are hostile toward them
Displacement	Redirecting an impulse from a threatening target to a safer substitute target	A person yells at a family member after having a bad day at work
Rationalization	Generating a self-justifying, "logical" excuse to disguise a less acceptable true motive	Explaining a failing grade as "the test was unfair" rather than admitting to not studying
Regression	Retreating to an earlier, more childlike stage of development or behavior under stress	An adult under extreme stress curls up and cries like a small child
Reaction formation	Expressing the opposite of one's true, unacceptable feeling	Acting with exaggerated hostility toward someone one is secretly attracted to
Sublimation	Redirecting an unacceptable impulse into a socially acceptable, often productive activity	Channeling aggressive urges into competitive sports

Ví dụ mẫu · Identifying defense mechanisms

For each scenario, name the defense mechanism illustrated. (a) A manager who is furious at her own boss instead snaps irritably at her assistant. (b) A student who did not study for an exam tells himself the exam "didn't even matter for the final grade anyway." (c) A man who feels intensely insecure about his own competence constantly criticizes coworkers for being incompetent.

(a) Displacement: the anger is redirected from its true target (the boss, a threatening target) to a safer substitute (the assistant).

(b) Rationalization: a self-justifying explanation is generated to disguise the true, less flattering

reason for the outcome (not studying).

(c) **Projection**: the manager's own unacceptable feelings of incompetence are attributed to others instead of being consciously acknowledged in himself.

GIẢI THÍCH TIẾNG VIỆT

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Tám cơ chế phòng vệ (defense mechanisms) chính của cái Tôi: **dồn nén (repression)** – đẩy hoàn toàn suy nghĩ/ký ức đe dọa ra khỏi ý thức; **phủ nhận (denial)** – từ chối chấp nhận thực tế đau đớn; **phóng chiếu (projection)** – gán cảm xúc không thể chấp nhận của mình cho người khác; **dịch chuyển (displacement)** – chuyển hướng xung động sang một đối tượng an toàn hơn; **hợp lý hoá (rationalization)** – tạo lý do nghe hợp lý để che giấu động cơ thật; **thoái lui (regression)** – lùi về hành vi của giai đoạn phát triển sớm hơn khi căng thẳng; **hình thành phản ứng (reaction formation)** – thể hiện cảm xúc NGƯỢC với cảm xúc thật; **thăng hoa (sublimation)** – chuyển xung động không thể chấp nhận thành hoạt động có ích cho xã hội.

(!) **Lỗi thường gặp**: Học sinh thường nhầm **hợp lý hoá (rationalization)** với **hình thành phản ứng (reaction formation)**. Hợp lý hoá là tạo ra một LÝ DO nghe có vẻ logic để che giấu động cơ thật (vẫn cùng chiều cảm xúc, chỉ đổi lý do). Hình thành phản ứng là thể hiện cảm xúc/hành vi NGƯỢC HẸN với cảm xúc thật đang bị dồn nén (VD ghét ai đó nhưng lại đối xử quá mức tử tế, hoặc thích ai đó nhưng lại thể hiện thái độ thù địch).

4.9.5 Neo-Freudians

Several of Freud's followers retained his emphasis on unconscious processes while departing sharply from specific aspects of his theory. **Carl Jung** proposed the **collective unconscious**, a shared, inherited reservoir of memories and images common to all of humanity (distinct from Freud's personal unconscious), populated by universal symbolic patterns called **archetypes** (e.g., the hero, the mother, the shadow) that Jung believed appear across cultures in myths, art, and dreams. **Alfred Adler** emphasized feelings of inferiority developed in childhood (the **inferiority complex**) as a central motivating force, proposing that much of adult personality and behavior reflects a compensatory **striving for superiority** to overcome these early feelings of inadequacy. **Karen Horney** offered an influential critique of Freud's theory of female psychology (rejecting concepts such as "penis envy" as reflecting the biases of Freud's own culture rather than universal psychology) and proposed that **basic anxiety** – a pervasive childhood feeling of helplessness and insecurity arising from inadequate parenting – is a more central driver of personality development than Freud's psychosexual stages.

GIẢI THÍCH TIẾNG VIỆT

VN

Các nhà tân Freud vẫn giữ trọng tâm về vô thức nhưng bất đồng với Freud ở nhiều điểm. **Carl Jung**: đề xuất **vô thức tập thể (collective unconscious)** – tầng vô thức chung của toàn nhân loại, chứa các **mẫu gốc (archetypes)** (VD người hùng, người mẹ, "mặt tối") xuất hiện xuyên suốt văn hoá, thần thoại, giấc mơ. **Alfred Adler**: nhấn mạnh **mặc cảm tự ti (inferiority complex)** từ thời thơ ấu là động lực trung tâm, dẫn đến **phấn đấu vươn tới sự vượt trội (striving for superiority)** để bù đắp. **Karen Horney**: phê phán quan điểm của Freud về tâm lý phụ nữ (bác bỏ khái niệm "ganh tị dương vật" vì cho rằng phản ánh thiên kiến văn hoá của Freud), và đề xuất **lo âu cơ bản (basic anxiety)** – cảm giác bất an, bất lực từ thời thơ ấu do nuôi dạy không phù hợp – là động lực cốt lõi hình thành nhân cách, quan trọng hơn các giai đoạn tâm lý tính dục.

4.10 Personality: Humanistic Theory

4.10.1 Carl Rogers: self-concept and unconditional positive regard

Reacting against both psychoanalytic pessimism about human nature and behaviorism's mechanical view of the person, **humanistic psychology** emphasizes personal growth, free will, and each individual's inherent potential. **Carl Rogers** proposed that healthy personality development depends heavily on receiving **unconditional positive regard** – acceptance and love from significant others (especially caregivers) that is not contingent on the person's behavior or achievements. Children who instead receive love only conditionally (only when they meet certain standards) develop **conditions of worth**, internalized beliefs that they are acceptable only under specific conditions, which can distort authentic self-development.

Central to Rogers's theory is the **self-concept** – one's overall sense of who one is – and the relationship between one's **real self** (who one actually is) and one's **ideal self** (who one would like to be). **Congruence** is a close match between the real self and the ideal self, associated with psychological health and genuineness; a large gap between the two (**incongruence**) is associated with anxiety and poor psychological adjustment. These ideas laid the foundation for Rogers's **person-centered (client-centered) therapy**, which aims to provide the therapeutic relationship itself – unconditional positive regard, genuineness, and empathic understanding – as the primary vehicle for a client's growth.

GIẢI THÍCH TIẾNG VIỆT

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Carl Rogers: phát triển nhân cách lành mạnh cần **sự tôn trọng vô điều kiện (unconditional positive regard)** – được yêu thương/chấp nhận không phụ thuộc vào hành vi hay thành tích. Thiếu điều này, trẻ hình thành **điều kiện giá trị (conditions of worth)** – niềm tin chỉ được chấp nhận khi đáp ứng những điều kiện nhất định. **Khái niệm bản thân (self-concept)** gồm **bản thân thật (real self)** và **bản thân lý tưởng (ideal self)**; khi hai bên gần khớp nhau gọi là **sự hoà hợp (congruence)** (dấu hiệu tâm lý lành mạnh), khi cách xa nhau gọi là **sự bất hoà hợp (incongruence)**, gắn với lo âu và thích nghi kém.

4.10.2 Abraham Maslow: the hierarchy of needs and self-actualization

Abraham Maslow proposed that human motivation is organized in a **hierarchy of needs**, typically depicted as a pyramid, in which lower-level needs generally must be reasonably satisfied before higher-level needs become primary motivators: **physiological needs** (food, water, sleep) at the base, then **safety needs** (security, stability), then **love and belonging needs** (relationships, acceptance), then **esteem needs** (respect, achievement, status), and at the peak, **self-actualization** – the ongoing process of fulfilling one's unique personal potential, creativity, and growth.

Self-actualization represents the humanistic ideal of psychological health: a state of authenticity, self-awareness, and the pursuit of meaningful personal growth. Maslow studied people he considered highly self-actualized (through biographical and historical case analysis) and identified a set of common characteristics:

- **Self-acceptance**: a realistic, non-defensive acceptance of oneself, including one's own flaws.
- **Spontaneity** and comfort with novelty, rather than rigid conformity to convention.
- **Deep, genuine relationships** with a relatively small circle of significant others, rather than many superficial connections.
- A well-developed, autonomous **sense of ethics** not simply borrowed from external authority.
- A tendency toward **creative, problem-centered engagement** with life and a capacity for what Maslow called "peak experiences" – moments of intense meaning, joy, or transcendence.

Ví dụ mẫu · Applying humanistic theory to a case

A talented artist reports feeling unable to pursue her creative passions because she is pre-occupied with an unstable living situation and worries about paying rent each month. Using Maslow's hierarchy, explain why her creative ambitions (linked to self-actualization) are not currently her primary motivation, and predict what would need to change for that to shift.

According to Maslow's hierarchy, lower-level needs generally take priority over higher-level ones when they are unmet. The artist's unstable living situation and financial insecurity represent unmet **safety needs**, which sit below **self-actualization** in the hierarchy. Because these more basic needs are not being reliably satisfied, they are predicted to dominate her attention and motivation, leaving comparatively little psychological "room" for pursuing self-actualization through her art. Maslow's model would predict that once her housing and financial situation becomes stable (safety needs satisfied) and she has adequate social support (love/belonging, esteem needs reasonably met), pursuing her creative potential is more likely to become a salient, primary motivator.

GIẢI THÍCH TIẾNG VIỆT

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Abraham Maslow: động lực con người được sắp xếp theo **tháp nhu cầu (hierarchy of needs)** từ thấp đến cao – **nhu cầu sinh lý** (ăn, uống, ngủ), **nhu cầu an toàn**, **nhu cầu yêu thương/thuộc về**, **nhu cầu được tôn trọng**, và ở đỉnh là **tự thể hiện bản thân (self-actualization)** – quá trình hiện thực hoá tiềm năng, sự sáng tạo và phát triển độc đáo của mỗi cá nhân. Nguyên tắc chung: các nhu cầu tầng dưới thường cần được đáp ứng tương đối đầy đủ trước khi nhu cầu tầng trên trở thành động lực chính. Tự thể hiện bản thân là lý tưởng tâm lý học của trường phái nhân văn.

4.11 Personality: Trait and Social-Cognitive Theories**4.11.1 Early trait theorists**

Trait theories treat stable, enduring dispositions – **traits** – as the fundamental building blocks of personality, in contrast to psychoanalytic and humanistic theories' emphasis on underlying dynamic processes or growth. **Gordon Allport** was among the first to argue that traits, rather than unconscious conflicts or stages, are the basic unit for describing and studying personality, and undertook an early large-scale effort to catalog the thousands of trait-descriptive words in the English language. **Raymond Cattell** used the statistical technique of factor analysis on trait ratings to reduce this vast vocabulary down to a proposed set of **16 personality factors** that he argued could describe the essential dimensions along which individuals differ. **Hans Eysenck** proposed a simpler model built around two (later three) core biologically based dimensions, most centrally **extraversion-introversion** (sociable, outgoing versus reserved, solitary) and **neuroticism-emotional stability** (anxious, moody versus calm, even-tempered), and argued these dimensions reflect underlying differences in nervous system arousal and reactivity.

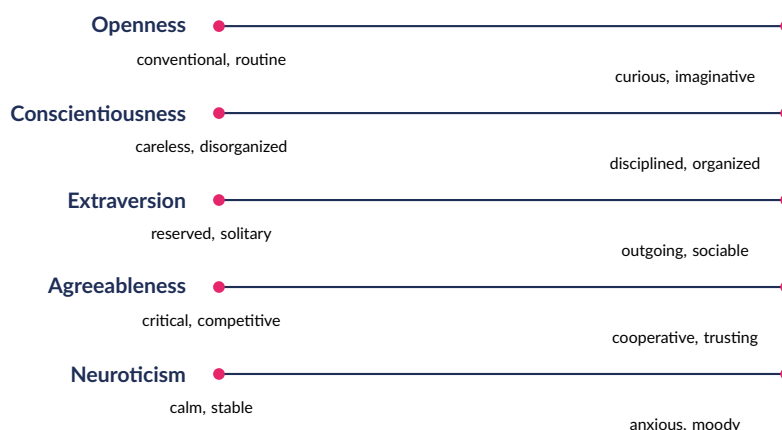
GIẢI THÍCH TIẾNG VIỆT

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Các nhà lý thuyết đặc nét đời đầu: **Gordon Allport** cho rằng **nét tính cách (trait)** là đơn vị cơ bản của nhân cách (khác với Freud coi trọng xung đột vô thức). **Raymond Cattell** dùng phân tích nhân tố (factor analysis) để rút gọn hàng nghìn từ mô tả tính cách xuống **16 yếu tố nhân cách**. **Hans Eysenck** đề xuất mô hình đơn giản hơn với hai trục chính: **hướng ngoại-hướng nội (extraversion-introversion)** và **nhiều tâm-ổn định (neuroticism-stability)**, cho rằng các trục này có cơ sở sinh học (mức độ kích hoạt của hệ thần kinh).

4.11.2 The Big Five (Five-Factor Model)

The dominant modern trait framework is the **Big Five** or **Five-Factor Model**, commonly remembered by the acronym **OCEAN**: **O**penness to experience (curious, imaginative, open to novelty versus conventional, prefers routine), **C**onscientiousness (organized, disciplined, dependable versus careless, disorganized), **E**xtraversion (outgoing, sociable, energetic versus reserved, solitary), **A**greeableness (cooperative, compassionate, trusting versus critical, competitive, antagonistic), and **N**euroticism (anxious, moody, emotionally reactive versus calm, even-tempered, emotionally stable). Each dimension is treated as a continuum along which any individual can be placed, rather than a discrete category, and the model has shown considerable consistency across cultures and over the lifespan.



The Big Five (OCEAN) traits, each treated as a continuum between two poles rather than a fixed category. Any individual can be placed at any point along each of the five scales independently.

Ví dụ mẫu · Rating someone on the Big Five

A colleague is described as: meticulously organized and always meets deadlines; quiet and prefers working alone; generally trusting and quick to compromise in disagreements; anxious before presentations and easily rattled by unexpected changes; and uninterested in trying new restaurants or unfamiliar hobbies. Characterize this person on each of the five OCEAN dimensions.

Openness: low (prefers the familiar, uninterested in novelty). **Conscientiousness:** high (organized, meets deadlines reliably). **Extraversion:** low (quiet, prefers solitude). **Agreeableness:** high (trusting, compromises readily). **Neuroticism:** high (anxious, easily rattled by change). Note that the five dimensions are independent of one another – this person is high on conscientiousness and agreeableness while simultaneously low on openness and extraversion, illustrating that the Big Five is a five-dimensional profile, not a single overall “good” or “bad” personality score.

GIẢI THÍCH TIẾNG VIỆT

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Mô hình Năm Yếu Tố Lớn (Big Five/Five-Factor Model) – viết tắt **OCEAN**: **O**penness (tính cởi mở) – tò mò, sáng tạo vs. bảo thủ, thích quen thuộc; **C**onscientiousness (tính tận tâm) – có tổ chức, đáng tin vs. bất cẩn, thiếu tổ chức; **E**xtraversion (tính hướng ngoại) – hoà đồng, năng động vs. khép kín, đơn độc; **A**greeableness (tính hoà đồng/dễ chịu) – hợp tác, tin tưởng vs. hay chỉ trích, cạnh tranh; **N**euroticism (tính nhiễu tâm) – lo âu, dễ xúc động vs. bình tĩnh, ổn định cảm xúc. Mỗi yếu tố là một THANG LIÊN TỤC độc lập – một người có thể vừa cao ở yếu tố này vừa thấp ở yếu tố khác.

4.11.3 Behavior genetics: the heritability of personality traits

Twin and adoption studies provide a way to estimate the relative contributions of genes and environment to individual differences in personality. Because identical (monozygotic) twins share essentially all of their genes while fraternal (dizygotic) twins share, on average, about half, comparing how similar each type of twin pair is on a given trait – especially when reared together versus reared apart – allows researchers to estimate **heritability**: the proportion of variation in a trait *within a specific studied population* that is statistically associated with genetic variation. Across large twin studies, most Big Five traits show heritability estimates in roughly the 40%–50% range, meaning genetic differences account for a substantial share of individual differences in traits like extraversion or neuroticism, but environment (including unique personal experiences) accounts for at least as much, if not more, of the remaining variation.

(!) Lỗi thường gặp: Đừng hiểu “khả năng di truyền $\approx$ 40–50%” là “40–50% tính cách của MỘT người là do gen quyết định.” Khả năng di truyền (heritability) là một con số THỐNG KÊ áp dụng cho SỰ KHÁC BIỆT giữa các cá nhân trong một QUẦN THỂ được nghiên cứu, không áp dụng cho một cá nhân đơn lẻ. Nó cũng không cố định tuyệt đối – ước tính khả năng di truyền có thể thay đổi tùy quần thể và môi trường được nghiên cứu.

GIẢI THÍCH TIẾNG VIỆT

VN Các nghiên cứu trên **cặp song sinh (twin studies)** và trẻ được nhận nuôi giúp ước lượng **khả năng di truyền (heritability)** của các nét tính cách – tỉ lệ biến thiên của một đặc điểm GIỮA CÁC CÁ NHÂN trong một quần thể có liên quan đến biến thiên di truyền. Với hầu hết các yếu tố trong Big Five, khả năng di truyền ước tính khoảng 40–50% – cho thấy gen đóng góp đáng kể, nhưng môi trường (bao gồm trải nghiệm cá nhân riêng biệt) cũng đóng góp ít nhất tương đương. Đây KHÔNG có nghĩa là 40–50% tính cách của một người cụ thể là do gen – đây là một số liệu thống kê ở cấp độ QUẦN THỂ, không áp dụng cho từng cá nhân.

4.11.4 The person-situation debate

Walter Mischel challenged core assumptions of trait theory by showing that behavior is often far less consistent across different situations than trait theory would predict – a person rated as highly conscientious at work might behave quite differently at a casual social gathering. This **person-situation debate** questioned whether broad, cross-situationally stable traits are as powerful a predictor of specific behavior as trait theorists had assumed, versus the specific features of a given situation. The resolution generally accepted today is an **interactionist** view: traits do predict a person's average behavioral tendency reasonably well when aggregated across many situations and over time, while specific situational factors strongly shape behavior in any single instance – both trait and situation contribute, and personality is best understood as the product of their interaction rather than either one alone.

Ví dụ mẫu · Resolving the person-situation debate

A researcher observes that an individual rated high in extraversion is talkative and energetic at a friend's birthday party but notably quiet during a solemn funeral, and argues this proves traits are meaningless. Evaluate this argument using the interactionist resolution of the person-situation debate.

The argument overreaches. Mischel's critique correctly shows that a single observation in one specific situation is a poor predictor of a trait rating, and that situational demands (the somber norms of a funeral versus the celebratory norms of a party) can override typical dispositional tendencies in any one instance. However, the **interactionist** resolution holds that if this same individual's behavior were sampled across *many* different situations and averaged

over time, they would still likely show a reliably higher average level of talkativeness and social energy than a low-extraversion person sampled across the same range of situations. The correct conclusion is not that traits are meaningless, but that traits predict *average tendencies across situations*, not behavior in any single situation taken in isolation – both the trait and the specific situation matter.

GIẢI THÍCH TIẾNG VIỆT

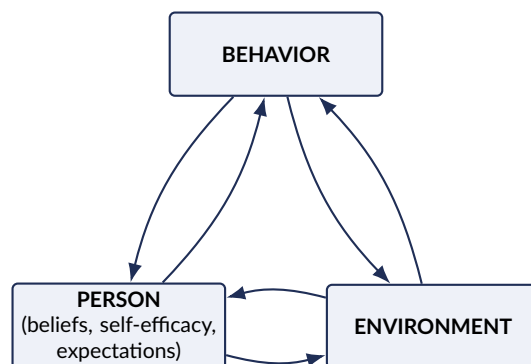
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Tranh luận người-tình huống (person-situation debate): Walter Mischel chỉ ra rằng hành vi thực tế thường KHÔNG nhất quán xuyên suốt các tình huống khác nhau như lý thuyết đặc nét giả định, đặt câu hỏi liệu nét tính cách có thực sự dự đoán tốt hành vi cụ thể hay không. Giải pháp được chấp nhận rộng rãi hiện nay là quan điểm **tương tác (interactionist)**: nét tính cách dự đoán tốt XU HƯỚNG TRUNG BÌNH của hành vi qua nhiều tình huống và thời gian, còn tình huống CỤ THỂ quyết định mạnh hành vi trong TỪNG trường hợp riêng lẻ – cả hai yếu tố (con người và tình huống) đều quan trọng, không loại trừ nhau.

4.11.5 Social-cognitive theory: Bandura and Rotter

Albert Bandura's **social-cognitive theory** of personality emphasizes **reciprocal determinism**: behavior, personal/cognitive factors (beliefs, expectations, attitudes), and environmental factors continuously and mutually influence one another in an ongoing loop, rather than any single factor unilaterally causing the others. A central construct in Bandura's theory is **self-efficacy**: a person's belief in their own capability to successfully perform a specific behavior or accomplish a specific goal. High self-efficacy in a domain predicts greater persistence, effort, and resilience in the face of setbacks within that domain; self-efficacy beliefs are themselves shaped by past performance experience, observing others succeed (modeling), and social persuasion – an illustration of reciprocal determinism, since beliefs (personal factor) both arise from and shape subsequent behavior and the environments a person seeks out.

Julian Rotter proposed **locus of control** as a key personality dimension describing a person's general belief about what determines outcomes in their life. People with an **internal locus of control** believe their own actions and choices primarily determine their outcomes; people with an **external locus of control** believe outcomes are primarily determined by factors outside their control – luck, fate, or powerful others. An internal locus of control is generally associated with greater persistence, achievement, and better health-related behavior, though the relationship is moderated by how much genuine control a given situation actually allows.



Bandura's reciprocal determinism: behavior, person/cognitive factors, and environment each influence the other two in a continuous, mutual loop.

Ví dụ mẫu · Applying reciprocal determinism and locus of control

A student with low self-efficacy in mathematics avoids challenging math electives (behavior), which limits her exposure to environments where she could build math skill and confidence (environment), which in turn reinforces her belief that she “is not good at math” (person/cognitive factor). Explain how this cycle illustrates reciprocal determinism, and characterize the student’s likely locus of control regarding her math performance if she also believes “no amount of effort would change my math grade anyway.”

This cycle illustrates **reciprocal determinism** because each of Bandura’s three factors both causes and is caused by the other two: her low self-efficacy belief (person) causes avoidance (behavior); avoidance limits her skill-building environment (environment); and the resulting lack of skill development feeds back to confirm and strengthen her original low self-efficacy belief (person) – a self-reinforcing loop rather than a one-directional cause-and-effect chain. Her stated belief that “no amount of effort would change my math grade anyway” reflects an **external locus of control** specifically regarding math: she attributes her outcomes to factors outside her own effort or control, which (per Rotter’s theory) would be predicted to further reduce her persistence and effort in that domain.

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Thuyết nhận thức xã hội (social-cognitive theory) của **Albert Bandura**: nhân cách hình thành qua **định luật tương hỗ (reciprocal determinism)** – hành vi, yếu tố cá nhân/nhận thức (niềm tin, kỳ vọng), và môi trường liên tục ảnh hưởng NGƯỢC LẠI lẫn nhau, không phải một chiều. **Niềm tin vào năng lực bản thân (self-efficacy)** – niềm tin về khả năng hoàn thành một nhiệm vụ cụ thể – là khái niệm trung tâm, ảnh hưởng đến sự kiên trì và nỗ lực. **Julian Rotter** đề xuất **điểm kiểm soát (locus of control)**: người có **điểm kiểm soát nội tại (internal)** tin hành động của mình quyết định kết quả; người có **điểm kiểm soát ngoại tại (external)** tin kết quả do may rủi/người khác/hoàn cảnh quyết định.

4.11.6 Comparing the major personality theories

Before turning to how personality is measured, it is useful to place the major theoretical perspectives covered in this unit side by side.

Perspective	Primary driver of personality	View of change	Key limitation
Psychoanalytic (Freud)	Unconscious conflict among id, ego, superego; early psychosexual experience	Deep-rooted, requires uncovering unconscious material	Difficult to test scientifically; overemphasis on sexuality
Humanistic (Rogers, Maslow)	Innate drive toward growth and self-actualization	Growth-oriented, optimistic, self-directed	Vague, difficult to operationalize; may underweight biology/situations
Trait (Allport, Cattell, Eysenck, Big Five)	Stable, largely biologically influenced dispositions	Traits are relatively stable over time	Descriptive more than explanatory; person-situation debate
Social-cognitive (Bandura, Rotter)	Reciprocal interaction of behavior, cognition, and environment	Beliefs (self-efficacy, locus of control) can shift with new experience	Can underweight stable biological/genetic contributions

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So sánh bốn hướng lý thuyết nhân cách lớn: **phân tâm học** nhấn mạnh xung đột vô thức và trải nghiệm thời thơ ấu, thay đổi khó khăn vì cần khai thác vô thức; **nhân văn** nhấn mạnh động

lực bẩm sinh hướng tới phát triển và tự thể hiện bản thân, lạc quan và tự định hướng; **đặc nét** nhấn mạnh các đặc điểm ổn định có cơ sở sinh học, ít nhấn mạnh sự thay đổi; **nhận thức-xã hội** nhấn mạnh tương tác qua lại giữa hành vi, nhận thức, môi trường, cho phép thay đổi linh hoạt hơn qua trải nghiệm mới. Mỗi hướng có điểm mạnh và hạn chế riêng – không có lý thuyết nào giải thích toàn bộ nhân cách một mình.

4.12 Personality Assessment

4.12.1 Projective tests

Projective tests present ambiguous stimuli and ask the test-taker to interpret or respond freely, on the theoretical rationale that people will unconsciously “project” their own inner conflicts, needs, and personality dynamics onto an ambiguous stimulus that has no single objectively correct interpretation. The **Rorschach inkblot test** shows a series of symmetrical inkblots and asks the respondent what each blot might represent; scoring systems analyze not just the content but the form, detail, and reasoning of responses. The **Thematic Apperception Test (TAT)** shows ambiguous scenes depicting people in unclear situations and asks the respondent to tell a story about what is happening, what led up to it, and how it will end – the theory being that the story reveals the respondent’s own underlying motives, conflicts, and concerns.

Projective tests remain popular in some clinical settings and offer rich, open-ended qualitative material, but face persistent criticism for generally **low reliability** (different scorers, or even the same scorer at different times, often reach inconsistent interpretations of the same responses) and **low validity** (scores frequently fail to predict independently verified outcomes, such as actual diagnosed conditions or later behavior, as consistently as their proponents have claimed).

4.12.2 Self-report inventories

Self-report inventories ask respondents direct, structured questions about their own thoughts, feelings, and behaviors, typically using standardized true/false or rating-scale items. The best-known example, the **Minnesota Multiphasic Personality Inventory (MMPI)**, was constructed using an **empirical (criterion) approach**: items were retained not because they seemed intuitively meaningful, but because they were empirically shown to distinguish between people with a diagnosed clinical condition and people without it, regardless of whether the specific item content seemed logically related to that condition on its face.

Because of this empirical construction and standardization on large samples, self-report inventories like the MMPI generally show substantially **better reliability and validity** than projective tests, though they remain vulnerable to certain response biases (e.g., socially desirable responding, or deliberately answering to create a particular impression), which the MMPI attempts to detect using built-in validity scales.

Feature	Projective tests (Rorschach, TAT)	Self-report inventories (MMPI)
Stimulus/format	Ambiguous images; open-ended interpretation	Structured statements; true/false or rating-scale items
Theoretical basis	Unconscious projection of inner conflicts onto ambiguous material	Direct empirical link between item response and diagnostic criterion group
Scoring	Often subjective, examiner-dependent	Standardized, objective, machine-scorable
Reliability/validity	Generally low	Generally higher
Main vulnerability	Inconsistent interpretation across scorers/testers	Socially desirable responding, faking (partly addressed by validity scales)

4.12.3 Other assessment methods: interviews and behavioral observation

Beyond projective tests and self-report inventories, psychologists also assess personality through **structured and unstructured clinical interviews** (direct conversation, ranging from a fixed set of stan-

standardized questions to open-ended discussion, allowing a trained clinician to gather detailed qualitative information but introducing potential examiner bias and inconsistency across interviewers) and **behavioral observation** (systematically recording how a person actually behaves in a natural or structured setting, such as rating a child's cooperative behavior during structured play, which has the advantage of assessing actual behavior directly rather than relying on self-report, but is time-consuming and may be influenced by the person's awareness of being observed).

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Phỏng vấn có cấu trúc/không cấu trúc (structured/unstructured clinical interview): trò chuyện trực tiếp với nhà tâm lý học, có thể theo bộ câu hỏi cố định hoặc mở, cho thông tin định tính chi tiết nhưng dễ bị ảnh hưởng bởi thiên kiến người phỏng vấn. **Quan sát hành vi (behavioral observation):** ghi nhận hệ thống hành vi thực tế của một người trong tình huống tự nhiên hoặc có cấu trúc – ưu điểm là đo hành vi THẬT chứ không dựa vào tự báo cáo, nhưng tốn thời gian và có thể bị sai lệch nếu người được quan sát biết mình đang bị theo dõi.

4.12.4 Reliability and validity

Any personality (or other psychological) assessment tool is evaluated on two core criteria. **Reliability** is the consistency of a measure – would the same test give similar results if repeated on the same person (test-retest reliability), or do different items/scorers agree with one another (internal consistency, inter-rater reliability)? **Validity** is whether a measure actually assesses what it claims to assess – does a high anxiety-inventory score actually correspond to a person who is, by independent measures, genuinely more anxious? A test can be reliable (consistent) without being valid (measuring the intended construct), but a test cannot be valid unless it is at least reasonably reliable – an inconsistent measure cannot accurately capture a genuine underlying trait.

Ví dụ mẫu · Reliability versus validity in test evaluation

A newly developed 10-item “creativity test” produces nearly identical scores when the same people retake it one month later, but scores on this test show no meaningful relationship with any independently rated measure of creative output (art, writing, invention) collected from the same people. Evaluate the reliability and validity of this test, and explain the relationship between the two findings.

The test demonstrates good **test-retest reliability**: scores are consistent when the same people are measured again after a delay. However, the test shows poor **validity**: it fails to correspond to independently verified creative output, meaning it likely is not actually measuring “creativity” as intended, whatever consistent characteristic it does measure. This illustrates a key principle: reliability does not guarantee validity – a test can consistently produce the same (wrong) answer. The test's good reliability is a necessary foundation (an unreliable test could not be valid either), but by itself it is not sufficient evidence that the test measures what it claims to measure.

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Thắc nghiệm phóng chiếu (projective test) – Rorschach (vết mực), TAT (kể chuyện theo tranh mơ hồ) – dựa trên ý tưởng người trả lời sẽ “phóng chiếu” xung đột nội tâm vô thức của mình lên hình ảnh mơ hồ; tuy nhiên **độ tin cậy (reliability)** và **độ hiệu lực (validity)** thường THẤP vì cách chấm điểm mang tính chủ quan. **Bảng kiểm kê tự báo cáo (self-report inventory)** – điển hình là **MMPI** – được xây dựng theo phương pháp thực nghiệm (chọn câu hỏi dựa trên khả năng phân biệt thực tế giữa nhóm có/không có chẩn đoán), nên có độ tin cậy và độ hiệu lực tốt hơn. **Độ tin cậy** = tính ỔN ĐỊNH, NHẤT QUÁN của kết quả đo; **độ hiệu lực** = mức độ công cụ đo ĐÚNG cái nó tuyên bố đo. Một công cụ có thể tin cậy (ổn định) nhưng KHÔNG hiệu lực

(đo sai thứ cần đo).

(!) Lỗi thường gặp: Đừng viết rằng một công cụ “có độ tin cậy cao nên chắc chắn hiệu lực cao.” Độ tin cậy chỉ đảm bảo kết quả ỔN ĐỊNH qua các lần đo, KHÔNG đảm bảo công cụ đó đo đúng khái niệm cần đo. Một chiếc cân bị lệch 2kg vẫn có thể cho ra kết quả nhất quán (tin cậy cao) mỗi lần cân, nhưng luôn sai lệch với cân nặng thật (hiệu lực thấp).

4.13 The Self and Culture

4.13.1 Self-concept, self-esteem, and the spotlight effect

One's **self-concept** – the total set of beliefs about who one is – and **self-esteem** – one's overall evaluation of one's own worth – are shaped by many of the social-cognitive processes covered earlier in this unit, including the **self-serving bias** (Section 1), which helps protect self-esteem by attributing successes internally and failures externally. A related self-focused bias is the **spotlight effect**: the tendency to overestimate the extent to which other people notice, judge, or are paying attention to one's appearance, behavior, or mistakes – most people, in fact, notice and remember far less about any given individual's minor slip-ups than that individual assumes, because everyone else is largely preoccupied with their own concerns.

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Khái niệm bản thân (self-concept) và tự trọng (self-esteem) bị ảnh hưởng bởi các thiên kiến nhận thức xã hội đã học, đặc biệt **thiên kiến tự tôn**. **Hiệu ứng ánh đèn spotlight (spotlight effect)**: con người có xu hướng đánh giá QUÁ CAO mức độ người khác chú ý/để tâm đến ngoại hình, hành vi, hay lỗi sai của mình – thực tế người khác thường bận tâm đến chính họ hơn là quan sát kỹ ta.

4.13.2 Individualism versus collectivism

Cross-cultural research, notably by **Hazel Markus** and **Shinobu Kitayama**, has shown that culture shapes the very structure of the self-concept. Cultures emphasizing **individualism** (common in much of North America and Western Europe) tend to foster an **independent self-construal**: the self is understood as a distinct, autonomous entity defined primarily by internal traits, personal goals, and individual achievement, relatively separate from social roles and relationships. Cultures emphasizing **collectivism** (common in much of East Asia, Latin America, and Africa) tend to foster an **interdependent self-construal**: the self is understood as fundamentally embedded within a web of relationships, group memberships, and social roles, with personal identity and goals closely tied to the goals and expectations of one's family and community.

This cultural dimension shapes several patterns already discussed in this unit: individualist cultures tend to show a stronger **fundamental attribution error** and self-serving bias (consistent with viewing the self as an independent agent whose traits explain outcomes), while collectivist cultures more often incorporate situational and relational context into explanations of behavior and tend to show somewhat more modest self-serving attributional patterns, since individual success or failure is more readily understood as embedded within group and situational context.

Ví dụ mẫu · Cultural self-construal and attribution

A student from a strongly individualist cultural background and a student from a strongly collectivist cultural background both fail an important exam. Predict, based on Markus and Kitayama's research on self-construal, how each student's explanation for the failure and sense of self might differ.

The student from the more **individualist** background, with a more **independent self-construal**, is more likely to interpret the failure primarily in terms of personal traits or effort (consistent with a stronger tendency toward dispositional, self-serving, or self-critical individual attribution) and to experience the outcome mainly as a statement about their own personal ability. The student from the more **collectivist** background, with a more **interdependent self-construal**, is more likely to interpret the failure with greater reference to situational and relational context (e.g., concern about how the failure reflects on or affects their family, or attention to specific circumstances of the exam) and to experience the outcome as embedded within their web of relationships and group standing, not purely as an isolated individual event.

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Nghiên cứu của **Hazel Markus** và **Shinobu Kitayama** cho thấy văn hoá định hình cấu trúc của bản thân: **chủ nghĩa cá nhân (individualism)** (phổ biến ở Bắc Mỹ, Tây Âu) gắn với **bản thân độc lập (independent self-construal)** – bản thân được hiểu là một thực thể riêng biệt, xác định qua đặc điểm và mục tiêu cá nhân. **Chủ nghĩa tập thể (collectivism)** (phổ biến ở Đông Á, Mỹ Latinh, châu Phi) gắn với **bản thân phụ thuộc lẫn nhau (interdependent self-construal)** – bản thân được hiểu là một phần gắn bó trong mạng lưới quan hệ, vai trò xã hội, mục tiêu gia đình/cộng đồng. Sự khác biệt này ảnh hưởng đến cả cách quy kết nguyên nhân: văn hoá cá nhân chủ nghĩa có xu hướng quy kết nội tại/thiên kiến tự tôn mạnh hơn văn hoá tập thể.

4.14 Unit Review: Key Theorists and Theories

The tables below collect the researchers, theories, and core concepts covered in this unit, organized by topic area, as a consolidated reference for review.

Researcher(s)	Theory/concept	Core idea
Fritz Heider	Attribution theory	Behavior is explained via dispositional (internal) or situational (external) causes
Harold Kelley	Covariation model	Consensus, distinctiveness, and consistency information guide attribution
Leon Festinger	Cognitive dissonance theory	Inconsistent cognitions produce discomfort that motivates attitude change
Daryl Bem	Self-perception theory	Weak/ambiguous attitudes are inferred from observing one's own behavior
Petty & Cacioppo	Elaboration Likelihood Model	Persuasion occurs via a central route (arguments) or peripheral route (cues)

Researcher(s)	Theory/concept	Core idea
Solomon Asch	Conformity (line studies)	Unanimous incorrect majorities produce high conformity; one ally sharply reduces it
Stanley Milgram	Obedience (shock studies)	Obedience to authority is highly sensitive to proximity, legitimacy, and peer defiance
Irving Janis	Groupthink	Desire for group harmony overrides critical evaluation of alternatives
Philip Zimbardo	Stanford Prison Experiment	Assigned roles/institutional situations can dramatically shape behavior

Researcher(s)	Theory/concept	Core idea
Gordon Allport	Contact hypothesis	Equal-status, cooperative, sanctioned contact can reduce prejudice
John Dollard et al.	Frustration-aggression hypothesis	Blocked goals increase the likelihood of aggression, often displaced
Darley & Latané	Bystander effect; decision model	More bystanders reduce individual helping via diffusion of responsibility
Markus & Kitayama	Self-construal theory	Culture shapes independent versus interdependent views of the self

Researcher(s)	Theory/concept	Core idea
Sigmund Freud	Psychoanalytic theory	Id, ego, superego in conflict; unconscious drives, psychosexual stages, defense mechanisms
Carl Jung	Collective unconscious	Universal archetypes shared across humanity, inherited rather than personal
Alfred Adler	Individual psychology	Inferiority complex drives compensatory striving for superiority
Karen Horney	Basic anxiety theory	Childhood insecurity, not psychosexual stages, drives personality; critiqued Freud on gender
Carl Rogers	Person-centered/humanistic theory	Unconditional positive regard fosters congruence between real and ideal self
Abraham Maslow	Hierarchy of needs	Needs are satisfied in order, from physiological up to self-actualization

Researcher(s)	Theory/concept	Core idea
Gordon Allport	Trait theory foundations	Traits are the basic descriptive unit of personality
Raymond Cattell	16 personality factors	Factor analysis reduces trait vocabulary to 16 core dimensions
Hans Eysenck	Biological trait dimensions	Extraversion-introversion and neuroticism-stability have biological roots
Costa & McCrae (Big Five)	Five-Factor Model (OCEAN)	Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism
Walter Mischel	Person-situation debate	Cross-situational behavioral consistency is lower than trait theory assumed
Albert Bandura	Social-cognitive theory	Reciprocal determinism among behavior, person, and environment; self-efficacy
Julian Rotter	Locus of control	Internal versus external beliefs about what determines life outcomes

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Bảng tổng hợp trên giúp hệ thống hoá nhanh các nhà nghiên cứu và lý thuyết chính của Chương 4: từ các thuyết **quy kết và thái độ** (Heider, Kelley, Festinger, Bem, Petty & Cacioppo), đến các hiện tượng **ảnh hưởng xã hội** (Asch, Milgram, Janis, Zimbardo), các cơ sở của **quan hệ xã hội** (Allport, Dollard, Darley & Latané, Markus & Kitayama), và hai nhóm lớn của **lý thuyết nhân cách** – phân tâm học/nhân văn (Freud, Jung, Adler, Horney, Rogers, Maslow) và đặc nét/nhận thức-xã hội (Allport, Cattell, Eysenck, Big Five, Mischel, Bandura, Rotter). Khi ôn tập, hãy tự kiểm tra: với mỗi tên, có thể nhắc lại được khái niệm cốt lõi và ít nhất một ví dụ áp dụng không?

4.15 Problem Bank

A supervisor watches an employee arrive late to work and immediately concludes, “he’s just an irresponsible person,” without considering that the employee’s car broke down that morning. This best illustrates:

- (A) The self-serving bias
- (B) The fundamental attribution error
- (C) Cognitive dissonance
- (D) The spotlight effect

Lời giải chi tiết

The supervisor, judging someone else’s behavior, favors a dispositional explanation (irresponsibility) over an equally plausible situational one (car trouble) – the defining pattern of the fundamental attribution error. **(B)**.

When explaining her own late arrival to work, the same employee says, “my car broke down – it wasn’t my fault.” When explaining a coworker’s identical lateness, she says, “he’s careless.” This contrast best illustrates:

- (A) The actor-observer bias
- (B) Groupthink
- (C) The matching hypothesis
- (D) Deindividuation

Lời giải chi tiết

She attributes her own behavior situationally (as the actor, with access to her own circumstances) but attributes the same behavior in someone else dispositionally (as an observer without access to their circumstances) – the actor-observer bias. **(A)**.

Explain the difference between the fundamental attribution error and the self-serving bias, using an original example for each.

Lời giải chi tiết

The **fundamental attribution error** concerns explaining *other people’s* behavior in general, with a bias toward dispositional (trait) explanations over situational ones – example: assuming a stranger who snapped at a barista is simply rude, without considering they may be having an emergency. The **self-serving bias** concerns explaining *one’s own outcomes* specifically (successes versus failures) – example: a salesperson who closes a big deal credits her own skill (disposition), but blames a lost deal on an unreasonable client or bad timing (situation). The key distinction: the fundamental attribution error is about judging *others’* behavior broadly; the self-serving bias is about explaining *one’s own* successes versus failures specifically.

In Festinger and Carlsmith’s classic study, participants paid only \$1 to lie about an enjoyable task later rated the task as more enjoyable than participants paid \$20. The best explanation is:

- (A) The \$1 group experienced more cognitive dissonance and reduced it by changing their genuine attitude
- (B) The \$1 group was simply telling the truth about their honest opinion
- (C) The \$20 group experienced more cognitive dissonance because they were paid more
- (D) Participants in both groups were equally influenced by peripheral-route persuasion

Lời giải chi tiết

The \$1 group lacked sufficient external justification for lying, producing dissonance between their statement and their true belief; because the lie could not be undone, they resolved the dissonance by shifting their actual attitude toward the task. The \$20 group had ample external justification and experienced little dissonance, so no attitude shift was needed. (A).

A researcher wants to replicate Festinger and Carlsmith's \$1/\$20 dissonance paradigm in a modern online sample, using a hypothetical, non-consequential task and asking participants to imagine (rather than actually state to someone) that they enjoyed it. Evaluate one strength and one weakness of this modification with respect to the study's ecological validity and its ability to produce genuine cognitive dissonance.

Lời giải chi tiết

Strength: the modification is more ethical, since no participant is actually deceiving another real person, reducing the risk of the mild social discomfort and deception present in the original design. **Weakness:** this modification likely undermines the study's ability to produce genuine dissonance and reduces its **ecological validity** – the original effect depended on participants believing they had made a real, consequential public statement to a real person that conflicted with their private belief; asking someone merely to *imagine* making the statement removes the actual behavioral commitment that Festinger's theory identifies as the trigger for dissonance, so the modified study may fail to reproduce the original attitude-change effect even if participants behave identically in the lab.

An advertisement for a technical software product features a lengthy, detailed comparison of processing speed, security certifications, and third-party benchmark results, aimed at IT professionals who will use the product daily. This message is most likely to persuade its audience via:

- (A) The peripheral route, because IT professionals are busy and distracted
- (B) The central route, because the audience is motivated and able to evaluate the technical claims
- (C) Neither route, because persuasion requires an attractive spokesperson
- (D) The peripheral route, because long messages are inherently peripheral

Lời giải chi tiết

IT professionals are both motivated (the product affects their daily work) and able (they have relevant expertise) to evaluate detailed technical claims, which is precisely the condition under which the ELM predicts central-route processing – careful evaluation of the actual argument

content. (B).

Which pair correctly matches a persuasion route with its typical durability of resulting attitude change?

- (A) Central route – weak and easily reversed; peripheral route – strong and durable
(B) Central route – strong and durable; peripheral route – weak and easily reversed
(C) Both routes produce equally durable attitude change
(D) Neither route reliably changes attitudes

Lời giải chi tiết

Central-route persuasion, grounded in careful evaluation of arguments, produces durable, well-integrated attitude change; peripheral-route persuasion, based on superficial cues, produces weaker, more easily reversed change. (B).

In Solomon Asch's line-judgment experiments, approximately what percentage of participants conformed to a unanimous, clearly incorrect group answer on at least one critical trial?

- (A) About 1%
(B) About 25%
(C) About 75%
(D) About 100%

Lời giải chi tiết

Asch found that roughly 75% of participants conformed to the incorrect majority on at least one critical trial, while errors were rare (under 1%) when participants answered without group pressure. (C).

Asch's original line-judgment studies were conducted in the 1950s using exclusively male American college students making a simple, low-stakes perceptual judgment among strangers who would never interact again. Critique the ecological validity and generalizability of this design, and propose one specific modification that would test whether the original conformity rate generalizes to a different, realistic social context.

Lời giải chi tiết

The design raises real **generalizability** concerns: an all-male, all-college-student, single-nationality, single-era sample cannot establish that the same conformity rate applies to women, older adults, non-Western cultures, or different historical periods, and later cross-cultural replications have in fact found conformity rates that vary by culture (generally somewhat higher in more collectivist cultures). The task also raises **ecological validity** concerns: judging line lengths among total strangers in a single brief lab session, with no real relationship or future consequences at stake, may understate or overstate conformity relative to higher-stakes, real-world group settings (e.g., conforming to a work team's judgment on a decision that affects one's career, or conforming among close friends rather than strangers). A specific modification: repeat the design using small existing friend groups instead of strangers as confederates, to test whether conformity rates increase, decrease, or stay the same when

normative social influence is anchored in an ongoing relationship rather than a one-time encounter with strangers.

A person conforms to a group's answer on an ambiguous, difficult perceptual task because they genuinely believe the group has better information than they do. This is best described as:

- | | |
|------------------------------------|------------------------------------|
| (A) Normative social influence | (C) The door-in-the-face technique |
| (B) Informational social influence | (D) Deindividuation |

Lời giải chi tiết

Conforming because one believes the group is a source of accurate information, especially under genuine ambiguity, is the definition of informational social influence (as opposed to normative social influence, which is driven by a desire for acceptance rather than accuracy). (B).

In the original baseline version of Milgram's obedience experiments (learner unseen, in a separate room), approximately what percentage of participants delivered the maximum shock level?

- | | |
|---------------|---------------|
| (A) About 10% | (C) About 65% |
| (B) About 35% | (D) About 95% |

Lời giải chi tiết

In the baseline condition, approximately 65% of participants obeyed fully and delivered the maximum shock, despite widespread visible distress. (C).

Which single modification produced the LARGEST drop in obedience across Milgram's experimental variations?

- | | |
|---|--|
| (A) Moving the learner into the same room as the teacher | (C) Having two peer "teachers" openly refuse to continue |
| (B) Requiring the teacher to physically force the learner's hand onto the shock plate | (D) Conducting the study at a university other than Yale |

Lời giải chi tiết

Obedience dropped most sharply, to roughly 10%, when the teacher was joined by two peers who openly and visibly defied the experimenter – a much larger drop than the reductions produced by increasing victim proximity or reducing institutional prestige. (C).

Milgram's obedience studies are frequently cited in discussions of research ethics. Identify two specific ethical concerns raised by the original design, and explain how each contributed to the development of modern institutional review board (IRB) standards.

Lời giải chi tiết

Concern 1 – deception without adequate protection: participants were deceived about the true purpose of the study and about whether the learner was actually being harmed, without a mechanism to identify or exclude participants who might be especially vulnerable to distress from that deception. This contributed to modern requirements that any necessary deception be minimized, justified by scientific value, and followed by mandatory debriefing.

Concern 2 – inadequate right to withdraw: although participants could technically stop, the experimenter's scripted verbal prods ("the experiment requires that you continue") actively pressured continued participation, undermining a genuinely free right to withdraw. This contributed to the modern IRB requirement that consent be ongoing and withdrawal be possible at any time without pressure or penalty, and that anticipated psychological risk be weighed against scientific benefit before a study is approved.

A charity first asks people to place a small sticker supporting a cause on their car, and successfully gets many to agree. Weeks later, the same people are asked to place a large, more prominent yard sign for the same cause, and a substantially higher percentage agrees compared to people who were never asked about the sticker. This illustrates:

- | | |
|------------------------------------|----------------------------|
| (A) The door-in-the-face technique | (C) The low-ball technique |
| (B) The foot-in-the-door technique | (D) Groupthink |

Lời giải chi tiết

Starting with a small request (the sticker) that increases later compliance with a larger, related request (the yard sign) is the defining sequence of the foot-in-the-door technique. **(B)**.

A negotiator opens by demanding a very large concession that she expects will be refused, then quickly offers a much smaller, more reasonable concession, which the other party accepts more readily than they would have if it had been the opening offer. Name this technique and explain the psychological mechanism that makes it effective.

Lời giải chi tiết

This is the **door-in-the-face technique**. It works through a contrast effect (the smaller request appears more reasonable when compared to the large initial request) and a reciprocity-based pull toward compromise (having refused the first request, the other party may feel some social pressure to grant a concession on the second, smaller one).

A car dealer gets a customer to verbally agree to buy a car at an advertised low price, then, after the customer has mentally committed and told friends about the purchase, reveals additional mandatory fees that raise the total cost substantially – yet the customer still completes the purchase. This illustrates:

- | | |
|------------------------------------|----------------------------|
| (A) The foot-in-the-door technique | (C) The low-ball technique |
| (B) The door-in-the-face technique | (D) The bystander effect |

Lời giải chi tiết

Securing agreement under favorable terms and then making the terms less favorable before the deal is finalized, relying on the customer's prior commitment to follow through anyway, is the low-ball technique. **(C)**.

An experienced violinist plays a well-rehearsed concerto more precisely in front of a large audience than alone in a practice room, but the same violinist sight-reading a brand-new, difficult piece for the first time performs worse in front of an audience than alone. This pattern illustrates:

- (A) Social loafing on both tasks (C) Deindividuation
(B) Social facilitation, with the effect of an audience depending on task familiarity (D) Group polarization

Lời giải chi tiết

The presence of an audience enhances performance on the simple, well-learned task (the rehearsed concerto) but impairs performance on the complex, unfamiliar task (sight-reading) – exactly the pattern predicted by social facilitation theory, where arousal from an audience helps dominant/well-learned responses but hurts effortful, unfamiliar ones. **(B)**.

A five-person rowing team's combined boat speed, measured with all five rowing together, is substantially less than five times the speed each rower individually produces when rowing alone on an ergometer where individual output is separately recorded. Identify the phenomenon and propose one specific change to the task that should reduce it.

Lời giải chi tiết

This is **social loafing**: when rowing together as a team, no single rower's individual contribution to boat speed is separately identifiable, diffusing accountability and reducing each person's exerted effort relative to when they are individually measured and identifiable (as on the ergometer). A specific fix supported by social loafing research: install individual effort sensors on each rower's oar so that each person's specific contribution can be measured and reported even during team rowing, restoring individual accountability and reducing the incentive to coast on the group's effort.

Individuals in a large, anonymous protest crowd, wearing masks and unable to be individually identified, engage in vandalism that most of them, interviewed afterward, say they would never have done alone or if identifiable. This is best explained by:

- (A) Deindividuation (C) The contact hypothesis
(B) The matching hypothesis (D) Reciprocal determinism

Lời giải chi tiết

Anonymity within a large group reduces individual self-awareness and self-restraint, making normally suppressed impulsive or norm-violating behavior more likely – the definition of deindividuation.

dividuation. (A).

A jury that leans mildly toward conviction before deliberation emerges from deliberation strongly and unanimously convinced of guilt, having spent most of the discussion reinforcing the initial leaning and briefly dismissing a juror who raised a reasonable doubt. Identify both group phenomena present, and explain how they differ from one another.

Lời giải chi tiết

Group polarization is present: the jury's initial mild lean toward conviction becomes a strong, unanimous position after discussion, consistent with group discussion intensifying an already-shared view. **Groupthink** is also present: the group prioritized apparent consensus over critical evaluation by dismissing the dissenting juror's reasonable doubt rather than seriously engaging with it. The two differ in focus: polarization describes the *direction/intensity* of opinion change, while groupthink specifically describes a *failure of critical appraisal* driven by the desire for harmony, often including suppression of dissent, as seen here.

Which of the following is a documented methodological criticism of the Stanford Prison Experiment (distinct from purely ethical concerns about participant harm)?

- | | |
|---|--|
| (A) The study used random assignment, which biologists consider invalid | (C) Evidence suggests guards may have been directly coached toward abusive behavior rather than behaving spontaneously |
| (B) The sample size was larger than any comparable study, making results too broad to interpret | (D) The study found that guards and prisoners behaved identically regardless of role |

Lời giải chi tiết

Later analysis of recordings and instructions has suggested the guards' escalating abusive behavior was substantially shaped by direct coaching and encouragement from the research team, undermining the claim that behavior emerged purely spontaneously from the assigned situation – a methodological confound, not simply an ethical concern. (C).

A critic argues that the Stanford Prison Experiment proves that “the situation alone, with no other contributing factor, determines whether ordinary people become abusive.” Using specific features of the study's design, explain why this strong causal claim is not well supported by the evidence.

Lời giải chi tiết

The claim overstates what an uncontrolled, small, self-selected case study can support. First, the recruitment ad specifically sought volunteers for a “prison study,” which may have selectively attracted participants already higher in traits like aggressiveness, meaning the sample may not represent “ordinary people” at large – a sampling confound. Second, Philip Zimbardo held a dual role as lead researcher and an in-simulation authority figure (“superintendent”), and later evidence suggests he and the research team actively encouraged certain guard behaviors, meaning the abusive behavior cannot be cleanly attributed to “the situation alone”

as an isolated variable – researcher influence is a separate, confounded factor. A defensible conclusion is that assigned roles and institutional settings *can* strongly influence behavior under some conditions, not that the situation alone, independent of coaching or self-selection, guarantees abuse in literally anyone.

A news report states, “Group X is lazy, and Group Y is dishonest,” reflecting a widely shared belief within a community, even though many individuals hold no personal hostility toward either group and have never directly discriminated against them. This belief alone is best classified as:

- | | |
|--------------------|------------------------------|
| (A) Discrimination | (C) A stereotype |
| (B) Prejudice | (D) Realistic group conflict |

Lời giải chi tiết

A generalized belief about the characteristics of a group, without a stated emotional/attitudinal component or a specific discriminatory action, is the cognitive component of intergroup bias – a stereotype. **(C)**.

A landlord privately dislikes members of a particular ethnic group (feeling contempt whenever the topic comes up) but has never actually refused to rent an apartment to anyone from that group. A second landlord holds no personal negative feelings about the group at all but follows a company policy that automatically rejects applicants from that group. Identify which component of intergroup bias (stereotype, prejudice, discrimination) is most clearly present in each case.

Lời giải chi tiết

The first landlord displays **prejudice** (the affective/attitudinal component – a negative feeling toward the group) without discrimination (no differential action has occurred). The second landlord engages in **discrimination** (the behavioral component – differential, unjustified treatment based on group membership) without necessarily holding personal prejudice, since the biased action stems from an institutional policy rather than personal feeling. This illustrates that the three components of intergroup bias do not always co-occur in the same person.

During a period of high unemployment, hostility toward a relatively powerless immigrant group rises sharply, even though the immigrant group did not cause the unemployment. This pattern is best explained by:

- | | |
|----------------------------|-----------------------------|
| (A) The contact hypothesis | (C) The matching hypothesis |
| (B) Scapegoat theory | (D) Social facilitation |

Lời giải chi tiết

Frustration from a diffuse, powerful, or hard-to-target source (a struggling economy) gets displaced onto a relatively powerless, more available outgroup – the mechanism described by scapegoat theory. **(B)**.

Two ethnic groups in a city, previously on relatively good terms, begin competing intensely for a limited number of newly scarce manufacturing jobs, and intergroup hostility rises sharply as competition intensifies. This scenario is best explained by:

- (A) Realistic group conflict theory
- (B) The spotlight effect
- (C) Cognitive dissonance theory
- (D) The bystander effect

Lời giải chi tiết

Genuine competition between groups over scarce, tangible resources (jobs) driving increased intergroup hostility is the defining scenario of realistic group conflict theory, distinct from scapegoat theory, in which the target group is not the actual source of competition or frustration. (A).

According to Gordon Allport's contact hypothesis, under which condition is intergroup contact LEAST likely to reduce prejudice?

- (A) Groups have equal status within the contact setting
- (B) Groups share a common goal requiring cooperation
- (C) Groups occupy the same physical space but interact only as competitors with no shared goal
- (D) The contact is endorsed by relevant institutions or authorities

Lời giải chi tiết

Mere physical proximity combined with competitive, non-cooperative interaction lacks the conditions Allport identified as necessary (equal status, common goals, genuine cooperation, institutional support) and can fail to reduce – or even increase – prejudice. (C).

Explain the biological contributions of the amygdala, the frontal lobes, and alcohol to aggressive behavior, and describe how damage or impairment to each could increase a person's likelihood of acting aggressively.

Lời giải chi tiết

The **amygdala** is involved in detecting and reacting to threat; heightened amygdala reactivity is associated with stronger, faster aggressive responses to perceived provocation. The **frontal lobes** normally exert inhibitory, regulatory control over impulsive responses, including aggressive impulses; damage or reduced functioning in the frontal lobes is associated with increased impulsivity and a reduced ability to suppress aggressive urges. **Alcohol** impairs frontal-lobe functioning and reduces inhibition generally, weakening the same regulatory control that normally restrains aggressive impulses – which is why intoxication is strongly associated with increased aggressive behavior. In all three cases, the common thread is a weakening of the brain's normal restraint on aggressive impulses, whether through heightened threat-reactivity (amygdala) or reduced inhibitory control (frontal lobes, alcohol).

A student's application to a prestigious summer program is rejected (a blocked goal). That evening, the student snaps angrily at a younger sibling over a minor, unrelated issue. This sequence most directly illustrates:

- (A) The frustration-aggression hypothesis, including displacement of the aggressive response (B) Social loafing
(C) The matching hypothesis
(D) The spotlight effect

Lời giải chi tiết

A blocked goal (rejection) produces frustration, which increases the likelihood of aggression; because the true source of frustration (the program) is not an available target, the aggression is displaced onto a safer, unrelated target (the sibling) – exactly the pattern predicted by the frustration-aggression hypothesis combined with displacement. **(A)**.

Research inspired by the Kitty Genovese case found that bystanders were LESS likely to help a person in apparent distress when more other bystanders were present. This finding is known as:

- (A) The matching hypothesis (C) Realistic group conflict theory
(B) The bystander effect (D) Reaction formation

Lời giải chi tiết

The finding that the presence of more bystanders reduces, rather than increases, the likelihood that any one bystander intervenes is the bystander effect, studied by Darley and Latané following the widely reported (and later shown to be partly exaggerated) 1964 Kitty Genovese case. **(B)**.

A woman collapses in a busy shopping mall food court. Several nearby shoppers glance over briefly, see other people continuing to eat without reacting, and conclude the situation must not be serious; no one calls for help, though a few feel a vague sense of unease. Using Latané and Darley's five-step decision model, identify the specific step at which the helping process most clearly breaks down, and explain the social-psychological mechanism responsible.

Lời giải chi tiết

The breakdown occurs at **Step 2 (interpreting the event as an emergency)**. Because the situation is ambiguous, bystanders rely on **informational social influence**, looking to other bystanders' lack of visible concern as evidence that nothing serious is happening; each bystander's calm, uncertain reaction reinforces every other bystander's conclusion that the event is not an emergency, collectively producing a shared (mis)interpretation of "no emergency here." Because the event is never collectively interpreted as an emergency, the process never proceeds to Step 3 (assuming responsibility), where diffusion of responsibility would likely further weaken the likelihood of any single bystander stepping forward given the number of witnesses present.

A researcher designs a field experiment to test the bystander effect by staging a person dropping groceries in different locations, varying only the number of other pedestrians nearby, and measuring how quickly (if at all) someone offers help. Identify one confound that could threaten this design's internal validity, and one consideration relevant to its ecological validity.

Lời giải chi tiết

Internal validity confound: locations with more pedestrians nearby may systematically differ in other ways that also affect helping (e.g., busier locations may also be noisier, more rushed, or have pedestrians who are strangers to one another to a different degree than quieter locations), making it hard to attribute any observed difference in helping purely to the number of bystanders rather than to these correlated location differences; a stronger design would hold location constant and experimentally vary only the number of confederate bystanders present. **Ecological validity consideration:** because the staged scenario (dropped groceries) is a real-world, naturalistic field setting rather than a lab simulation, it has relatively strong ecological validity for predicting how people behave in similarly low-stakes real emergencies, though it may still generalize poorly to genuinely high-stakes or dangerous emergencies, where perceived personal risk (not manipulated here) could change bystander behavior substantially.

Explain the difference between the reciprocity norm and the social-responsibility norm as explanations for helping behavior, using one original example of each.

Lời giải chi tiết

The **reciprocity norm** is the expectation that helping others increases the likelihood that they (or others) will help you in return – example: helping a coworker finish a report because you expect they will cover a shift for you later. The **social-responsibility norm** is the expectation that people ought to help those who are dependent on them or genuinely in need, regardless of any expectation of repayment – example: helping a lost, frightened young child find their parent, with no expectation that the child could ever repay the favor. The key difference: reciprocity norm-based helping is motivated by anticipated repayment; social-responsibility norm-based helping is motivated by the recipient's need or dependency alone.

Two strangers who are randomly assigned to be neighbors in a college dormitory become close friends over the semester, despite having few interests in common, mainly because they see each other constantly in the hallway and at meals. This outcome is best explained by:

- (A) The matching hypothesis (C) The contact hypothesis
(B) Proximity and the mere exposure effect (D) Reaction formation

Lời giải chi tiết

Repeated, frequent contact due to physical closeness (proximity), which also increases familiarity and liking through repeated exposure, best explains the friendship forming despite limited shared interests. (B).

Long-term dating research finds that couples' self-rated physical attractiveness scores are more strongly correlated with each other's than would be expected by chance, rather than everyone pairing with the single most attractive people available. This finding most directly supports:

- | | |
|-----------------------------|---|
| (A) The matching hypothesis | (C) The frustration-aggression hypothesis |
| (B) Scapegoat theory | (D) Diffusion of responsibility |

Lời giải chi tiết

People tending to pair with partners of similar physical attractiveness, rather than everyone pursuing the most attractive available partners, is the specific pattern predicted by the matching hypothesis. (A).

According to Freud, which personality structure operates entirely in the unconscious and follows the pleasure principle?

- | | |
|------------------|----------------------|
| (A) The ego | (C) The id |
| (B) The superego | (D) The preconscious |

Lời giải chi tiết

The id is entirely unconscious and seeks immediate gratification of basic drives according to the pleasure principle, with no regard for reality or morality. (C).

A young child feels intense, unconscious guilt after having an angry thought toward a parent, and this guilt-inducing conscience is, according to Freud, primarily a function of which structure?

- | | |
|-------------|--------------------------------|
| (A) The id | (C) The superego |
| (B) The ego | (D) The collective unconscious |

Lời giải chi tiết

The superego represents internalized moral standards and produces guilt (via its punishing conscience component) when those standards are violated, even by a mere thought. (C).

For each scenario, identify the specific defense mechanism illustrated: (a) A man who is furious with his employer instead comes home and shouts at his dog. (b) A heavy smoker, shown clear evidence of health risks, insists smoking has never harmed anyone and refuses to discuss it further. (c) A soldier who feels ashamed of hostile urges toward civilians instead becomes an outspoken, almost exaggerated advocate for civilian protection. (d) A person who feels intense unacceptable jealousy toward a sibling channels that energy into becoming an extremely successful competitive athlete.

Lời giải chi tiết

(a) **Displacement**: anger is redirected from its true, threatening target (the employer) to a safer substitute (the dog). (b) **Denial**: the smoker refuses to acknowledge a painful, well-documented reality. (c) **Reaction formation**: the soldier expresses the opposite of his true, unacceptable feeling (hostility) through exaggerated advocacy in the other direction. (d) **Sublimation**: an unacceptable impulse (jealousy) is redirected into a socially valued, productive activity (competitive achievement).

An adult, upon receiving devastating news, begins crying uncontrollably, curls into a fetal position, and refuses to speak – behavior resembling a much younger developmental stage. This best illustrates which defense mechanism?

- (A) Regression (C) Projection
(B) Rationalization (D) Sublimation

Lời giải chi tiết

Retreating to an earlier, more childlike pattern of behavior under extreme stress is the definition of regression. (A).

According to Freud's stages of psychosexual development, fixation during the anal stage (associated with toilet-training conflicts) is theorized to produce which adult personality pattern?

- (A) Excessive dependency and oral habits like nail-biting (C) Difficulty forming a mature adult sexual identity
(B) Rigid, excessively neat, and stingy traits, or alternatively messy and disorganized (D) An inflated sense of moral superiority

Lời giải chi tiết

Fixation at the anal stage, centered on control of elimination during toilet training, is theorized to produce either anal-retentive traits (rigid, excessively neat, stingy) or anal-expulsive traits (messy, disorganized), depending on how the conflict was resolved. (B).

Match each neo-Freudian theorist to their key concept: (1) Carl Jung, (2) Alfred Adler, (3) Karen Horney. Concepts: (a) basic anxiety and critique of Freud's view of female psychology; (b) collective unconscious and archetypes; (c) inferiority complex and striving for superiority.

Lời giải chi tiết

(1) Carl Jung – (b) collective unconscious and archetypes. (2) Alfred Adler – (c) inferiority complex and striving for superiority. (3) Karen Horney – (a) basic anxiety and critique of Freud's view of female psychology.

A child consistently receives love and acceptance from her parents only when she achieves top grades or wins competitions, and rarely otherwise. According to Carl Rogers, this child is likely to develop:

- | | |
|--|--|
| (A) Unconditional positive regard | (C) A strong internal locus of control |
| (B) Conditions of worth, feeling acceptable only when meeting specific standards | (D) Reciprocal determinism |

Lời giải chi tiết

Receiving acceptance only contingent on specific achievements, rather than unconditionally, leads (per Rogers) to conditions of worth – the belief that one is acceptable only under certain conditions – rather than unconditional positive regard. **(B)**.

A person's "real self" (how they actually are) and "ideal self" (how they wish to be) are very far apart, and this person reports chronic anxiety and dissatisfaction. In Carl Rogers's terms, this person is experiencing:

- | | |
|------------------|----------------------------|
| (A) Congruence | (C) Self-actualization |
| (B) Incongruence | (D) Reciprocal determinism |

Lời giải chi tiết

A large gap between the real self and the ideal self is defined by Rogers as incongruence, associated with anxiety and poor psychological adjustment; a close match is congruence. **(B)**.

According to Maslow's hierarchy of needs, a person who is chronically food-insecure and lacks stable housing is LEAST likely to be strongly motivated, at this point in their life, by which of the following?

- | | |
|---------------------------------------|---|
| (A) Finding a reliable source of food | (C) Pursuing self-actualization through creative work |
| (B) Securing stable housing | (D) Avoiding immediate physical danger |

Lời giải chi tiết

Because lower-level needs (physiological needs like food, and safety needs like stable housing) are unmet, Maslow's model predicts these needs will dominate motivation, leaving self-actualization – the highest-level need – comparatively unlikely to be a strong current motivator until the more basic needs are reasonably satisfied. **(C)**.

On a Big Five (OCEAN) personality assessment, an individual scores very high on conscientiousness and very low on openness. Describe two specific behavioral tendencies you would expect from this combination, and explain why the Big Five treats these two traits as independent dimensions rather than a single combined score.

Lời giải chi tiết

High conscientiousness combined with low openness predicts a person who is highly organized, reliable, and disciplined (e.g., consistently meets deadlines, keeps a tidy, well-planned schedule) while also strongly preferring familiar routines, conventional approaches, and established procedures over novel or unconventional ones (e.g., resistant to changing a well-established work process even when a new method is proposed). The Big Five treats the five traits as independent because empirical factor-analytic research shows a person's standing on one dimension (here, conscientiousness) does not reliably predict their standing on another (here, openness) – knowing someone is highly conscientious tells you little about whether they are open or closed to new experiences, so each dimension must be measured and reported separately to fully describe a personality profile.

Walter Mischel's research showing that behavior is often inconsistent across different situations posed a challenge to which theoretical approach to personality?

- (A) Psychoanalytic theory (C) Trait theory
(B) Humanistic theory (D) Social exchange theory

Lời giải chi tiết

Mischel's findings on low cross-situational behavioral consistency directly challenged trait theory's core assumption that broad, stable traits strongly and consistently predict behavior across differing situations, launching the person-situation debate. (C).

The generally accepted resolution to the person-situation debate is best described as:

- (A) Traits are meaningless and only situations determine behavior many situations, while specific situations strongly shape behavior in any single instance
(B) Situations are irrelevant and only traits determine behavior
(C) An interactionist view: traits predict average behavioral tendencies across (D) Traits and situations cannot be studied together using the same research methods

Lời giải chi tiết

The interactionist resolution holds that traits reliably predict a person's average tendency across many situations sampled over time, while the specific situation strongly determines behavior in any single instance – both factors matter and interact, rather than either one alone fully determining behavior. (C).

A student with low self-efficacy in public speaking avoids signing up for any class requiring presentations (behavior), which prevents her from gaining practice and positive feedback (environment), which reinforces her belief that she is simply bad at public speaking (person/cognitive factor), which further increases her avoidance. Identify the personality theory and specific concept illustrated, and explain why this qualifies as reciprocal rather than one-directional causation.

Lời giải chi tiết

This illustrates Albert Bandura's **social-cognitive theory**, specifically **reciprocal determinism** operating together with low **self-efficacy**. It qualifies as reciprocal (not one-directional) because each factor both causes and is caused by the other two: her belief (person) causes her avoidance (behavior); her avoidance shapes the environments she experiences, denying her practice opportunities (environment); and the resulting lack of practice and feedback loops back to confirm and strengthen her original belief (person) – a continuous cycle in which no single factor can be identified as the sole, one-way starting cause.

Two employees receive identical negative performance reviews. Employee A concludes, "I need to work harder and change my approach next quarter"; Employee B concludes, "my manager just has it out for me, and nothing I do would change the outcome." According to Julian Rotter's theory, Employee A shows a more ____ locus of control, and Employee B shows a more ____ locus of control.

- (A) external; external
(B) internal; external

- (C) external; internal
(D) internal; internal

Lời giải chi tiết

Employee A attributes the outcome to factors within their own control (their effort and approach), reflecting an internal locus of control; Employee B attributes the outcome to external, uncontrollable factors (a biased manager, futility of effort), reflecting an external locus of control. **(B)**.

A clinician shows a client a series of symmetrical inkblots and asks what each one might represent, then also administers a well-validated, empirically-derived true/false questionnaire. Which assessment is more likely to face criticism for low reliability and low validity, and why?

- (A) The inkblot test, because scoring is often subjective and examiner-dependent
(B) The questionnaire, because it was empirically validated against real diagnostic criteria
(C) Both are equally reliable and valid, since both are widely used
(D) Neither test can be evaluated for reliability or validity

Lời giải chi tiết

Projective tests like the Rorschach inkblot test rely on largely subjective interpretation of ambiguous stimuli, producing inconsistent scoring across examiners (low reliability) and inconsistent correspondence with independently verified outcomes (low validity), in contrast to empirically-derived self-report inventories like the MMPI, which were constructed and validated by testing items directly against diagnostic criterion groups. **(A)**.

A company designs a 50-item leadership-potential questionnaire. When 200 employees re-take the same questionnaire one month later, their scores are highly consistent with their first-round scores. However, when the company tracks these same employees over the next three years, questionnaire scores show no meaningful relationship with who actually gets promoted

into leadership roles or who succeeds in those roles. Evaluate the reliability and validity of this questionnaire, and explain what additional evidence would be needed to establish validity.

Lời giải chi tiết

The questionnaire shows strong **test-retest reliability**, since scores are highly consistent across the one-month retest. However, it shows poor **validity**, because scores fail to predict the real-world outcome (promotion and success in leadership roles) that the test claims to measure. To establish validity, the company would need evidence that questionnaire scores correlate with an independent, well-defined criterion of actual leadership potential or performance (such as supervisor ratings of leadership behavior, objective team performance metrics under the person's management, or peer evaluations) collected in a way that is not itself contaminated by prior questionnaire scores – reliability alone, however strong, does not substitute for this kind of validity evidence.

After tripping in a crowded hallway, a student is convinced that “everyone saw that and is definitely talking about it,” though in reality most passersby did not notice or have already forgotten the incident entirely. This best illustrates:

- | | |
|-----------------------------|-------------------------------------|
| (A) The spotlight effect | (C) Groupthink |
| (B) The matching hypothesis | (D) Realistic group conflict theory |

Lời giải chi tiết

Overestimating how much other people notice and remember one's own minor mistakes or appearance is the definition of the spotlight effect. **(A)**.

Based on Markus and Kitayama's research on cultural self-construal, predict how a person raised in a strongly collectivist culture is likely to complete the sentence “I am...” differently than a person raised in a strongly individualist culture, and explain the underlying theoretical reason for the difference.

Lời giải chi tiết

A person from a strongly **individualist** culture, with a more **independent self-construal**, is more likely to complete the sentence with individual traits, abilities, or personal preferences (e.g., “I am ambitious,” “I am curious”), reflecting a view of the self as a distinct entity defined by internal characteristics. A person from a strongly **collectivist** culture, with a more **interdependent self-construal**, is more likely to complete the sentence with references to relationships, roles, or group memberships (e.g., “I am a daughter,” “I am a member of my community”), reflecting a view of the self as fundamentally embedded within a web of relationships and social roles. The underlying reason is that culture shapes not just surface-level values but the basic cognitive structure of what the self-concept is understood to consist of.

A social psychology instructor summarizes four classic studies covered in this unit – Asch's conformity study, Milgram's obedience study, Festinger and Carlsmith's dissonance study, and Zimbardo's Stanford Prison Experiment – and asks students to identify one shared method-

ological or ethical limitation common to at least three of the four. Propose a defensible answer.

Lời giải chi tiết

A defensible shared limitation across at least three of the four (Asch, Milgram, and Zimbardo) is limited **sample diversity and generalizability**: all three relied heavily on relatively narrow samples (disproportionately male, college-aged, and drawn from a single culture and era), raising the question of whether the specific rates and patterns observed (Asch's conformity rate, Milgram's obedience rate, Zimbardo's guard behavior) would generalize to more diverse populations, cultures, or later time periods. A second defensible shared limitation across at least three of the four (Milgram, Zimbardo, and to some extent Festinger and Carlsmith's use of deception) is significant **use of deception and/or induced psychological distress**, which raises ethical concerns under modern research standards and could itself be a confound if participants' awareness (or suspicion) of the true purpose of the study varied and influenced their behavior in ways the original researchers could not fully rule out.

A teacher notices that a particular student, Huy, falls asleep during her class. She learns that no other student in that class falls asleep (low consensus), that Huy stays fully alert and attentive in every one of his other classes (high distinctiveness), but that Huy has fallen asleep in this specific class every single day this month (high consistency). According to Kelley's covariation model, the teacher should most reasonably conclude that the cause is:

- | | |
|---|--|
| (A) Something specific about this class or class period, rather than a general trait of Huy's | (C) The data are too inconsistent to draw any conclusion |
| (B) Huy has a general, stable trait of laziness that appears in all his classes | (D) Huy's behavior is caused by unanimous group conformity |

Lời giải chi tiết

Low consensus, high distinctiveness, and high consistency together point to a **situational attribution** specific to this particular class (e.g., perhaps it meets right after lunch, or the room is overheated) rather than a general dispositional trait, since Huy's alertness in all his other classes rules out a general laziness explanation. (A).

Explain how self-perception theory (Bem) would reinterpret the finding that participants paid only \$1 to lie about a boring task later rated the task as more enjoyable than participants paid \$20, WITHOUT invoking the concept of psychological discomfort or dissonance.

Lời giải chi tiết

Self-perception theory holds that, because participants' attitudes toward the boring peg-turning task were not strongly or clearly formed beforehand, the \$1 participants inferred their own attitude by observing their own freely chosen behavior, much as an outside observer would: having told someone the task was enjoyable, and having received only a trivial \$1 payment (not enough to fully explain the statement as pure financial incentive), they reasoned that they must have found the task at least somewhat enjoyable to have said so. The \$20 participants, by contrast, could simply attribute their statement to the substantial payment,

so they had no reason to infer a genuinely positive attitude from their own behavior. Critically, this account requires no discomfort or arousal at all – only a process of inferring one's own attitude from observed behavior, the same way one might infer a stranger's attitude from watching what the stranger does.

A person scores low in prejudice on an explicit self-report questionnaire but shows strong, fast automatic associations between a particular social group and negative words on an Implicit Association Test (IAT). This pattern best illustrates:

- (A) A contradiction that proves the IAT is invalid
- (B) The distinction between explicit and implicit attitudes, which often correlate
- (C) The self-serving bias
- (D) The matching hypothesis

Lời giải chi tiết

Explicit (self-reported, consciously endorsed) and implicit (automatic, reaction-time-based) attitude measures often diverge because implicit measures can capture automatic associations a person does not consciously hold or endorse; this is a well-documented pattern, not evidence that either measure is inherently invalid. (B).

A persuasive message from a source initially perceived as untrustworthy is largely dismissed by an audience immediately after they hear it, but a follow-up survey conducted six weeks later finds the same audience has become considerably more persuaded by the message's content. This delayed increase in persuasion is known as:

- (A) The sleeper effect
- (B) The bystander effect
- (C) The spotlight effect
- (D) Reaction formation

Lời giải chi tiết

A delayed increase in persuasion from an initially low-credibility source, occurring as the audience forgets the untrustworthy source while retaining the message content itself, is the sleeper effect. (A).

Twin studies estimate that approximately 45% of the variation in extraversion scores within a large studied population is statistically associated with genetic differences among individuals. A student concludes: "this means 45% of my own personality is caused by my genes." Explain what is wrong with this interpretation of heritability.

Lời giải chi tiết

The student misapplies a population-level statistic to a single individual. **Heritability** describes the proportion of *variation between individuals in a specific studied population* that is statistically associated with genetic variation – it is not a statement about what proportion of any one person's individual traits are "caused by" genes versus environment. A heritability estimate of 45% for extraversion means that, across the population studied, genetic differences account

for roughly 45% of why people differ from each other in extraversion; it says nothing about decomposing a single specific person's personality into a "genetic percentage" and an "environmental percentage," which is not how heritability estimates are calculated or intended to be interpreted.

Replications of Asch's conformity paradigm across many countries generally find:

- (A) Conformity rates are identical in every culture with no variation whatsoever
- (B) The general pattern (sharp rise in conformity with a unanimous incorrect majority, sharp drop when unanimity is broken) replicates broadly, though average conformity levels vary somewhat by culture
- (C) Conformity only occurs in the United States and has never been replicated elsewhere
- (D) Conformity rates are highest in the most individualist cultures

Lời giải chi tiết

Cross-cultural replications show the core pattern Asch identified generalizes broadly, though average conformity levels tend to run somewhat higher in more collectivist cultures (which place greater value on group harmony) than in more individualist cultures – not identical everywhere, but not culturally limited to the original 1950s American sample either. **(B)**.

A clinical psychologist assesses a client using three methods: (1) a structured interview with a fixed set of standardized questions, (2) direct behavioral observation of the client interacting with family members in a clinic playroom, and (3) the MMPI. Identify one specific strength and one specific limitation of the behavioral observation method (2), distinguishing it from the other two methods.

Lời giải chi tiết

Strength: behavioral observation directly records what the client actually does in a real or structured interaction, rather than relying on the client's (or an interviewer's) verbal report, giving the clinician direct evidence of actual behavior rather than self-described or inferred behavior. **Limitation:** it is time-consuming to conduct and score systematically, and the client's behavior may be altered simply because they are aware of being observed (in contrast to the MMPI, which is quickly and objectively scored, and the structured interview, which is faster to administer but relies on self-report rather than directly observed behavior).

A hiring manager sincerely and consciously believes she treats all candidates equally regardless of background, yet a controlled audit of her past hiring decisions reveals a consistent pattern of rating equally qualified candidates from one particular group slightly lower on "culture fit," a pattern she was previously unaware of. This scenario most directly illustrates:

- (A) Explicit prejudice
- (B) Implicit prejudice
- (C) The contact hypothesis
- (D) Realistic group conflict theory

Lời giải chi tiết

A consistent biased pattern in behavior that contradicts a person's sincerely held, consciously endorsed egalitarian beliefs, and of which the person was previously unaware, is the signature of implicit prejudice – an automatic association influencing judgment below the level of conscious awareness or endorsement. **(B)**.

Referring to the bar chart of Milgram's obedience conditions earlier in this unit, which single comparison between two bars provides the strongest evidence that the presence of defiant peers was a more powerful situational factor than victim proximity alone?

Lời giải chi tiết

The comparison between the “forced hand on shock plate” condition ($\approx 30\%$ obedience) and the “two peers openly defy” condition ($\approx 10\%$ obedience) is the strongest evidence: both conditions increase psychological pressure on the participant relative to the baseline, but the peer-defiance condition produces a much larger drop in obedience (roughly a 20-percentage-point difference between these two conditions alone) than any of the proximity-based manipulations produce relative to each other, indicating that the presence of a visible model of resistance had a larger effect than increasing physical/psychological closeness to the victim.

Using the five-step bystander decision-model flowchart from this unit, explain why a bystander who successfully completes Steps 1 through 4 (notices the event, interprets it as an emergency, assumes responsibility, and knows how to help) might still fail to help at Step 5.

Lời giải chi tiết

Step 5 (“decide to act”) requires the bystander to weigh the perceived **costs** of helping (physical risk, social embarrassment, time, effort, potential legal liability) against the perceived **benefits** (relief of the victim's suffering, personal satisfaction, social approval, avoiding guilt). Even a bystander who has cleared every earlier step – noticing, correctly interpreting the emergency, feeling personally responsible, and possessing the relevant skill – can still decide not to act if the perceived costs of intervening (e.g., a visibly dangerous assailant, high risk of physical harm) are judged to outweigh the benefits. This shows that successfully completing the first four steps is necessary but not sufficient for helping behavior to occur.

Referring to the iceberg diagram of Freud's levels of awareness in this unit, explain why the **ego** is drawn spanning all three levels (conscious, preconscious, and unconscious) while the **id** is drawn located entirely below the waterline.

Lời giải chi tiết

The **id** operates entirely on unconscious, instinctual drives and has no direct access to conscious reasoning, so it is depicted entirely submerged, below the waterline. The **ego**, by contrast, must actively mediate between the id's unconscious demands, the superego's (partly unconscious) moral standards, and the conscious, real-world constraints the person navigates moment to moment – performing conscious reasoning and decision-making while also employing unconscious defense mechanisms to manage anxiety. Because the ego's functions

span from fully conscious deliberation down to unconscious defensive processes, it is depicted spanning all three levels of the iceberg rather than being confined to any single level.

On the Big Five continuum-bar figure in this unit, a person's mark on the Conscientiousness scale sits very close to the low pole, while their mark on the Neuroticism scale sits very close to the high pole. Describe two specific, realistic everyday behaviors this combination would predict, and explain why a low mark on Conscientiousness does not by itself tell you anything about where this person would fall on Extraversion.

Lời giải chi tiết

Low conscientiousness combined with high neuroticism predicts behaviors such as frequently missing deadlines or losing track of commitments (low conscientiousness) combined with becoming visibly anxious or overwhelmed when those missed deadlines create problems (high neuroticism) – for example, procrastinating on a project until the last minute (low conscientiousness) and then experiencing significant anxiety and self-criticism about the resulting rushed, lower-quality work (high neuroticism). A low mark on Conscientiousness says nothing about Extraversion because the Big Five dimensions are statistically and conceptually **independent** of one another: knowing someone is disorganized (low conscientiousness) provides no information about whether they are also outgoing or reserved (extraversion), since each trait varies separately in the population and must be measured on its own scale.

Two rival fan bases, when asked to describe their own fans, give varied, individualized descriptions, but when asked to describe rival fans, both groups converge on a single uniform stereotype ("they're all obnoxious"). Separately, each fan base rates an identical piece of sports commentary more favorably when told it was written by one of their own fans than when told it was written by a rival fan. Name the two distinct biases illustrated by these two findings, respectively.

Lời giải chi tiết

The uniform description of rival fans, contrasted with varied descriptions of one's own fans, illustrates **outgroup homogeneity**. The more favorable rating of identical commentary based solely on perceived group membership illustrates **ingroup bias**. Both can occur simultaneously but are conceptually distinct: outgroup homogeneity concerns *perceived diversity* within a group, while ingroup bias concerns *favorable evaluation* of the ingroup.

Proximity, similarity, and physical attractiveness are frequently cited as separate predictors of interpersonal attraction. Explain how the reward theory of attraction offers a single unifying account of why all three predict attraction, and connect this account to social exchange theory.

Lời giải chi tiết

The reward theory of attraction proposes that people are drawn to relationships that provide reward at relatively low cost. **Proximity** lowers the cost (time, effort, planning) of maintaining contact with a person; **similarity** lowers the cost of friction and disagreement while providing the reward of feeling validated in one's own views; and **physical attractiveness** is itself rewarding to experience, and further triggers the halo effect's assumption of other positive

traits. This account is essentially an application of **social exchange theory** (Section 7) to romantic and platonic attraction specifically: relationships, like helping behavior, are evaluated (consciously or not) along a cost-benefit calculus, and proximity, similarity, and attractiveness all shift that calculus toward a more favorable reward-to-cost ratio.

A company's senior leadership team, known for high group cohesion and led by a forceful CEO who has already stated a preference, approves a risky business expansion after a single meeting in which one member's data-driven objection was quickly waved aside and no formal alternative was seriously discussed. List three specific symptoms of groupthink present in this scenario.

Lời giải chi tiết

Three symptoms of groupthink are identifiable: (1) **suppression/dismissal of dissenting opinions** – the data-driven objection was quickly waved aside rather than seriously engaged with; (2) a likely **illusion of invulnerability** and/or **self-censorship** among other members, since no formal alternative was seriously discussed despite a real risk being raised; and (3) conditions strongly associated with groupthink are present and reinforcing the pattern – high group cohesion and a forceful, directive leader who had already signaled a preferred outcome, both of which Janis identified as key antecedent conditions that make groupthink more likely to occur.

A clinician is deciding between administering a structured clinical interview and conducting direct behavioral observation to assess a client's social anxiety. The clinician has limited time available for this specific assessment. Which method more directly measures actual behavior, and which method is generally faster to administer? Explain the trade-off the clinician faces.

Lời giải chi tiết

Behavioral observation more directly measures actual behavior, since it involves systematically recording what the client actually does in a real or structured social situation, rather than relying on the client's verbal self-report. The **structured interview** is generally faster to administer, since it follows a fixed, efficient set of standardized questions rather than requiring an extended observation period in a naturalistic or simulated setting. The trade-off: given limited time, the clinician must weigh the more direct, but time-consuming, behavioral evidence from observation against the faster, but self-report-dependent, information gathered through the structured interview.

Using the comparison table of personality theories in this unit, explain why a strict Freudian psychoanalytic clinician and a strict Bandura-style social-cognitive clinician would likely give different treatment recommendations to a client who reports low confidence in job interviews, and identify the key theoretical difference driving this disagreement.

Lời giải chi tiết

A strict **psychoanalytic** clinician would look for the low confidence's roots in unconscious conflict or unresolved early developmental experience (e.g., unresolved conflicts from childhood relationships with authority figures), and would likely recommend extended therapy aimed at uncovering and working through this unconscious material. A strict **social-cognitive** clinician,

following Bandura, would focus on the client's current **self-efficacy** beliefs specifically regarding job interviews and the reciprocal cycle of avoidance, limited practice, and reinforced low confidence, and would likely recommend a more direct, present-focused intervention such as graduated practice interviews and modeling successful interview behavior to build self-efficacy through direct experience. The key theoretical difference driving this disagreement is where each perspective locates the primary driver of personality and behavior change: deep, historical, unconscious conflict (psychoanalytic) versus the current, modifiable interaction of belief, behavior, and environment (social-cognitive).

Mental and Physical Health

Mục tiêu Unit: Các lý thuyết động cơ (bản năng, giảm thiểu nhu cầu, hưng phấn tối ưu với quy luật Yerkes–Dodson, khuyến khích, tháp nhu cầu Maslow) và cơ chế sinh học của đói (vùng dưới đồi, ghrelin, leptin, insulin, điểm định mức – set point); động cơ thành tựu và động cơ nội tại/ngoại tại; ba thành phần và các lý thuyết cảm xúc (James–Lange, Cannon–Bard, Schachter–Singer, thẩm định nhận thức của Lazarus), nghiên cứu của Paul Ekman về biểu cảm khuôn mặt phổ quát, giả thuyết phản hồi khuôn mặt, và độ tin cậy của máy phát hiện nói dối (polygraph); khái niệm stress và thẩm định sơ cấp/thứ cấp của Lazarus, hội chứng thích nghi chung (GAS) của Hans Selye, phản ứng chiến-hay-chạy (Cannon) và chăm sóc-kết bạn (Taylor), tâm-thần kinh-miễn dịch học, các chiến lược ứng phó (tập trung vào vấn đề/cảm xúc), hỗ trợ xã hội, nhân cách Type A/B, và mô hình sinh học-tâm lý-xã hội trong y tế; tiêu chuẩn DSM-5 để xác định rối loạn tâm lý (lệch chuẩn, đau khổ, rối loạn chức năng, nguy hiểm) và các nhóm rối loạn chính – lo âu (GAD, hoảng loạn, ám ảnh sợ, lo âu xã hội), ám ảnh cưỡng chế (OCD), stress sau sang chấn (PTSD), khí sắc (trầm cảm chủ yếu, rối loạn lưỡng cực), tâm thần phân liệt, phân ly, nhân cách, ăn uống, và phát triển thần kinh (ADHD, tự kỷ); và các phương pháp trị liệu tâm lý (phân tâm học, nhân văn, hành vi, nhận thức, nhận thức-hành vi – CBT) cùng trị liệu y sinh (thuốc hướng thần, sốc điện – ECT, phẫu thuật tâm thần) và các tiêu chí đánh giá hiệu quả điều trị dựa trên chứng cứ.

How this unit fits together

This unit follows a natural arc. **Motivation** and **emotion** explain what activates and colors everyday behavior — including how the body and mind respond when a goal is blocked or a demand exceeds resources, which is precisely the definition of **stress**. Prolonged or severe stress, interacting with an individual's underlying biological and psychological **vulnerability** (the diathesis-stress model), helps explain why some people develop diagnosable **psychological disorders** while others facing similar circumstances do not. Finally, because disorders have biological, psychological, and social contributors (the biopsychosocial model), effective **treatment** typically draws on a matching combination of psychotherapy and biomedical approaches, tailored to the individual.

GIẢI THÍCH TIẾNG VIỆT

VN

Mạch nội dung của Unit 5: **động cơ** và **cảm xúc** giải thích điều gì kích hoạt và "tô màu" hành vi hằng ngày – bao gồm cách cơ thể/tâm trí phản ứng khi mục tiêu bị cản trở hoặc đòi hỏi vượt quá nguồn lực, chính là định nghĩa của **stress**. Stress kéo dài/nghiêm trọng, kết hợp với **khuyh hướng dễ mắc bệnh** nền tảng của mỗi người (mô hình diathesis-stress), giúp giải thích tại sao một số người phát triển **rối loạn tâm lý** có thể chẩn đoán được trong khi người khác gặp hoàn cảnh tương tự thì không. Cuối cùng, vì rối loạn có nguyên nhân sinh học-tâm lý-xã hội (mô hình biopsychosocial), **điều trị** hiệu quả thường cần kết hợp trị liệu tâm lý và trị liệu y sinh phù hợp với từng cá nhân.

5.1 Theories of Motivation

Motivation refers to the biological, psychological, and social forces that activate, direct, and sustain goal-directed behavior. It is psychology's answer to the question "why" — why we eat when hungry, avoid pain, pursue achievement, and stay in relationships. No single theory explains every motivated

behavior; instead, psychologists rely on several complementary models, each spotlighting a different mechanism.

5.1.1 Instinct Theory and Drive-Reduction Theory

Early twentieth-century psychologists proposed **instinct theory**: complex behaviors are motivated by unlearned, genetically programmed, species-typical patterns (instincts), much as birds migrate or spiders spin webs. The theory fell out of favor because simply *naming* a behavior an "instinct" does not *explain* it, and lists of proposed human instincts grew implausibly long (one influential textbook cataloged thousands). Instinct theory nonetheless planted the seed for the modern evolutionary perspective, which explains universal behavioral tendencies in terms of natural selection rather than a fixed, unlearned "instinct" module — a related concept, the **fixed action pattern** (an innate, stereotyped behavioral sequence triggered automatically by a specific stimulus, such as a graylag goose retrieving an egg-shaped object rolled near its nest, studied by ethologist Konrad Lorenz), remains a legitimate part of modern behavioral biology even though "instinct" as a catch-all explanation for complex human behavior was abandoned.

Drive-reduction theory proposed that a physiological **need** (a biological requirement for survival, such as for water) produces a **drive** — an aroused, uncomfortable state of tension that pushes the organism to act in ways that satisfy the need and reduce the tension. The underlying goal is **homeostasis**: the body's tendency to maintain a stable, balanced internal environment (constant body temperature, blood glucose, hydration, and so on).

Primary vs. secondary drives

A **primary drive** is directly tied to a biological, survival-relevant need (hunger, thirst, the need for sleep or warmth). A **secondary drive** is learned rather than innate — it does not reduce any direct biological need but has become motivating through association with primary reinforcers (e.g., the drive to earn money, which is not itself biologically necessary but is strongly motivating because money has repeatedly been paired with access to food, shelter, and status).

GIẢI THÍCH TIẾNG VIỆT

VN

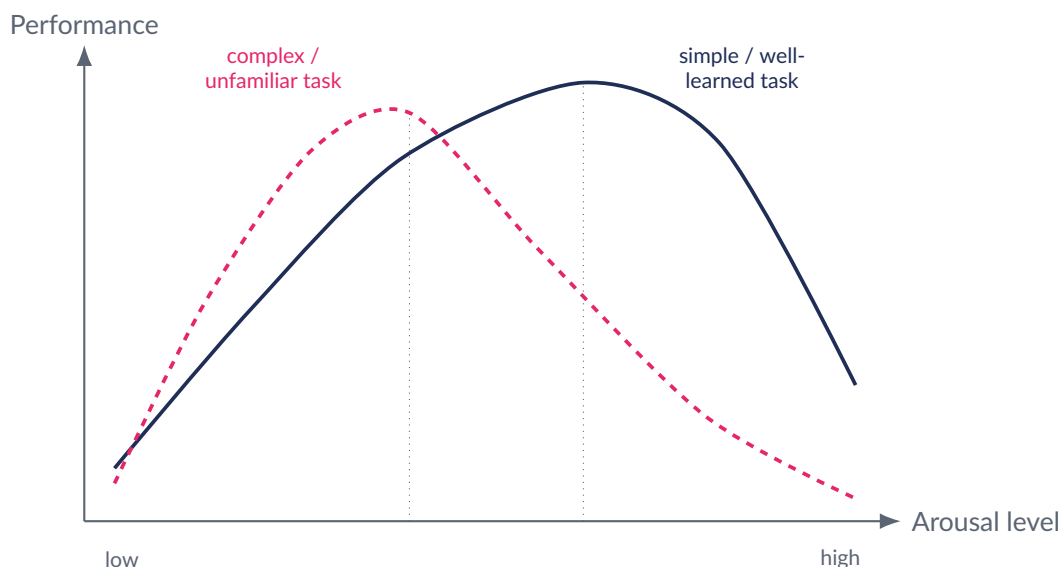
Lý thuyết bản năng (instinct theory) cho rằng hành vi phức tạp được thúc đẩy bởi các khuôn mẫu bẩm sinh, không học được (bản năng) – lý thuyết này bị bỏ qua vì chỉ gọi tên hành vi là "bản năng" không thực sự *giải thích* được nó. Lý thuyết giảm thiểu nhu cầu (drive-reduction theory) cho rằng một **nhu cầu** sinh học (need) tạo ra một **động lực thúc đẩy** (drive) – trạng thái căng thẳng khiến cơ thể hành động để thỏa mãn nhu cầu và duy trì **cân bằng nội môi** (homeostasis). **Động lực nguyên phát** (primary drive) gắn trực tiếp với nhu cầu sinh học (đói, khát); **động lực thứ phát** (secondary drive) là động lực học được qua liên kết với các yếu tố củng cố nguyên phát (VD: động lực kiếm tiền).

5.1.2 Arousal Theory and the Yerkes–Dodson Law

Arousal theory observes that drive-reduction alone cannot explain behaviors like curiosity, exploration, or sensation-seeking, which occur even with no biological deficit to fix — sometimes people and animals act specifically to *increase* stimulation. Arousal theory proposes instead that organisms are motivated to seek and maintain an **optimal level of physiological arousal**: too little arousal (boredom, understimulation) is itself uncomfortable and motivates activity, just as too much arousal (overstimulation, anxiety) motivates a search for calm.

The law originated in 1908, when Robert Yerkes and John Dodson trained mice to discriminate between a darker and a lighter compartment, delivering increasingly strong electric shocks for incorrect choices; they found that stronger shocks (higher arousal) sped up learning only up to a point, beyond which further increases in shock intensity impaired performance — the original empirical basis for what became known as the **Yerkes–Dodson law**, which describes the resulting relationship

between arousal and performance as an **inverted U**: performance is poor at very low arousal (inattentive, unmotivated), improves as arousal rises toward a moderate, optimal level, and then declines again as arousal becomes excessive (anxiety, distraction, tunnel vision impair performance). Crucially, the *location* of that optimal point depends on task difficulty: for simple or well-learned tasks, performance keeps improving at relatively high arousal (the peak shifts right); for complex, unfamiliar, or cognitively demanding tasks, performance peaks at a comparatively lower level of arousal and declines sooner (the peak shifts left), because high arousal disrupts the fine-grained attention and working-memory resources complex tasks require.



The Yerkes–Dodson law: performance follows an inverted-U relationship with arousal. The optimal arousal level (dotted lines) is higher for simple, well-learned tasks (solid navy curve) and shifts left, toward lower arousal, for complex or unfamiliar tasks (dashed pink curve), since high arousal disrupts the attention and working memory that difficult tasks demand.

Ví dụ mẫu · Arousal and exam performance

A student performs well on routine multiple-choice vocabulary questions even while quite nervous, but the same level of nervousness causes her to blank out on a complex multi-step proof. Explain both outcomes using the Yerkes–Dodson law.

The vocabulary questions are a simple, well-rehearsed task, so the optimal-arousal peak sits farther to the right — her nervousness (moderately high arousal) still falls near or before that peak, keeping performance strong. The multi-step proof is a complex, demanding task, so its optimal-arousal peak sits farther to the left, at a lower arousal level; the same degree of nervousness now falls well past that lower peak, on the declining part of the inverted-U curve, disrupting the working memory and step-by-step reasoning the proof requires.

GIẢI THÍCH TIẾNG VIỆT

VN

Lý thuyết hưng phấn (arousal theory) cho rằng cơ thể muốn duy trì một **mức hưng phấn tối ưu** – không chỉ đơn giản là giảm nhu cầu về 0. Quy luật Yerkes–Dodson mô tả quan hệ hình **chữ U ngược** giữa mức hưng phấn và hiệu suất: hiệu suất thấp khi hưng phấn quá thấp (chán, mất tập trung) hoặc quá cao (lo lắng, quá tải), và đạt cao nhất ở mức hưng phấn **vừa phải**. Điểm tối ưu này phụ thuộc vào độ khó của nhiệm vụ: nhiệm vụ đơn giản/quen thuộc có điểm tối ưu ở mức hưng phấn **cao hơn**; nhiệm vụ phức tạp/mới lạ có điểm tối ưu ở mức hưng phấn **thấp hơn** (vì hưng phấn cao làm rối loạn khả năng tập trung và trí nhớ làm việc cần thiết cho nhiệm vụ khó).

5.1.3 Incentive Theory

Incentive theory shifts attention from internal push factors to external **pull** factors: behavior is drawn toward or away from **incentives** – external stimuli, objects, or goals (a paycheck, a trophy, the smell of food, praise) that we have learned to want or fear, independent of any current internal deficit. Motivated behavior, in this view, is typically the joint product of an internal drive (push) and the attractiveness of an available incentive (pull): a person who is not currently hungry may still eat when served a favorite dessert, because the powerful external incentive drives behavior even without an urgent internal need.

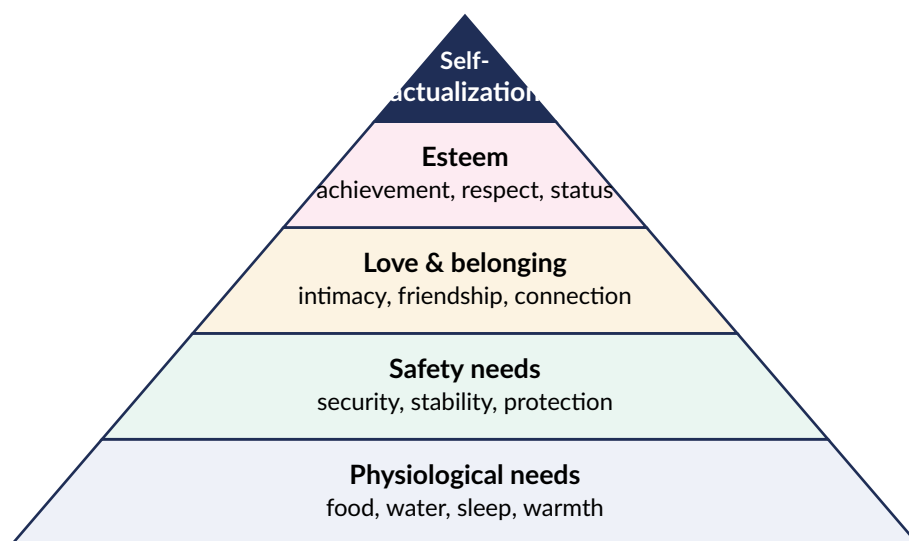
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Lý thuyết khuyến khích (incentive theory) nhấn mạnh yếu tố **bên ngoài** (kích thích, mục tiêu hấp dẫn – lương, giải thưởng, mùi thức ăn) "kéo" hành vi, thay vì nhu cầu bên trong "đẩy" hành vi như lý thuyết giảm thiểu nhu cầu. Trong thực tế, hành vi có động cơ thường là kết quả kết hợp của cả động lực nội tại (push) và sức hấp dẫn của khuyến khích bên ngoài (pull) – VD: ăn món tráng miệng yêu thích dù không đói.

5.1.4 Maslow's Hierarchy of Needs

Abraham Maslow proposed that human needs are organized into a **hierarchy**, often depicted as a pyramid, in which lower, more basic needs generally must be reasonably satisfied before higher-level needs become strongly motivating.



Maslow's hierarchy of needs. Physiological and safety needs (the base) are the most fundamental and pressing; esteem and self-actualization (the peak) become motivating only once lower needs are reasonably met. Self-actualization is the ongoing process of fulfilling one's unique potential.

Maslow in the motivation context

Maslow's hierarchy is also discussed as a humanistic theory of *personality* elsewhere in the curriculum, but within motivation it specifically explains *which* needs dominate behavior at a given moment: a person struggling to find food or shelter (physiological/safety needs unmet) is unlikely to be strongly motivated by esteem-related goals like career recognition. Real life often violates the strict order – people can be motivated by love or esteem even while a lower need goes unmet (a starving artist pursuing recognition) – so the hierarchy is best read as a general tendency, not an ironclad law.

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Tháp nhu cầu Maslow (Maslow's hierarchy of needs) sắp xếp nhu cầu con người theo 5 tầng từ thấp đến cao: **sinh lý** (ăn, uống, ngủ) → **an toàn** → **yêu thương/thuộc về** → **được tôn trọng (esteem)** → **tự hiện thực hoá (self-actualization)**. Nguyên tắc chung: nhu cầu tầng dưới cần được thoả mãn tương đối trước khi nhu cầu tầng trên trở thành động lực mạnh – tuy nhiên đây không phải quy luật tuyệt đối, vẫn có ngoại lệ trong đời thực (VD: nghệ sĩ nghèo vẫn theo đuổi được công nhận).

5.1.5 Motivational Conflict

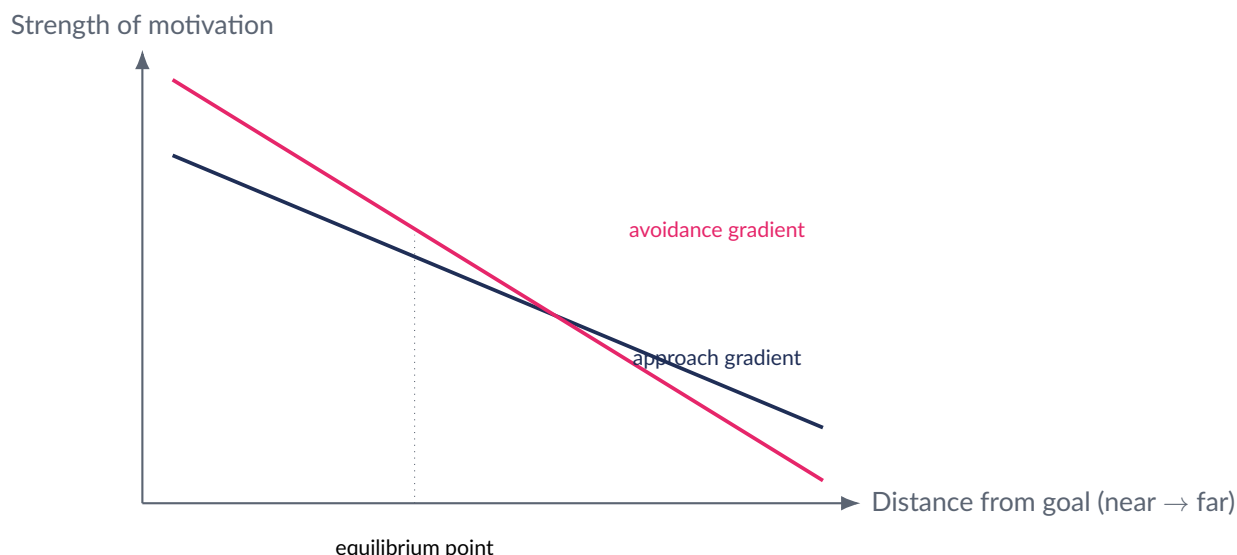
People frequently pursue multiple competing goals or drives at the same time, producing psychological conflict. **Kurt Lewin's** classic typology describes three basic conflict structures. In an **approach-approach conflict**, a person must choose between two simultaneously appealing options (e.g., deciding between two equally attractive university acceptances) – generally the *least* stressful type, since either choice yields something desirable. In an **avoidance-avoidance conflict**, a person must choose between two simultaneously unappealing options (e.g., undergoing an unpleasant medical procedure or living with a worsening health problem) – typically highly stressful, since every available option carries a real cost. In an **approach-avoidance conflict**, a single goal or object carries both appealing and unappealing features at once (e.g., a tempting but fattening dessert, or a promotion that brings prestige but also an unwanted relocation) – often the most psychologically difficult to resolve, because vacillation can persist even as a person approaches the goal: the closer they get, the more strongly the negative feature can loom.

Ví dụ mẫu · Classifying a motivational conflict

A student is offered a spot in a prestigious study-abroad program that would fulfill a long-held dream, but accepting requires giving up a paid position she also values and cannot defer or resume later. Identify the type of motivational conflict this represents and explain why this particular conflict structure is often difficult to resolve.

This is an **approach-avoidance conflict**: a single opportunity (the study-abroad program) carries both an appealing feature (fulfilling a long-held dream) and an unappealing cost (losing valued, non-deferrable income) bundled into the very same choice. This structure is often the hardest to resolve because, unlike choosing between two clearly separate options, the person cannot simply keep the positive feature while discarding the negative one – indecision frequently persists right up to (and sometimes past) a decision deadline, since both the pull and the push are attached to the identical option.

Neal Miller's **approach-avoidance gradient** model refines this last conflict type further: as a person gets physically or psychologically closer to a goal with mixed appeal, *both* the pull to approach it and the push to avoid it grow stronger – but the avoidance gradient typically grows steeper than the approach gradient at close range. This produces a stable point of **equilibrium** partway toward the goal, where the two competing forces balance and the person tends to hover or oscillate rather than fully approaching or fully retreating.



Miller's approach-avoidance gradient. Both gradients rise as the goal is approached, but the avoidance gradient rises more steeply at close range; the two lines cross at an equilibrium point where the person tends to hover rather than fully approach or retreat.

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Xung đột động cơ (motivational conflict) theo **Kurt Lewin** có 3 dạng: **xung đột tiếp cận–tiếp cận (approach-approach)** – chọn giữa hai lựa chọn đều hấp dẫn (ít gây stress nhất); **xung đột né tránh–né tránh (avoidance-avoidance)** – chọn giữa hai lựa chọn đều không mong muốn (gây stress cao); **xung đột tiếp cận–né tránh (approach-avoidance)** – MỘT mục tiêu duy nhất vừa có đặc điểm hấp dẫn vừa có đặc điểm không mong muốn (thường khó giải quyết nhất, dễ dao động/lưỡng lự kéo dài). Mô hình **gradient tiếp cận–né tránh** của **Neal Miller** bổ sung: khi càng gần mục tiêu, cả động lực tiếp cận VÀ né tránh đều tăng, nhưng động lực né tránh tăng NHANH hơn ở khoảng cách gần – tạo ra một điểm **cân bằng** nơi cá nhân dao động qua lại thay vì tiến hẳn hoặc rút hẳn.

Theory	Core idea	Illustrative example
Instinct theory	Complex behavior is driven by unlearned, species-typical patterns	(Largely abandoned; precursor to evolutionary perspective)
Drive-reduction theory	A biological need creates a drive, motivating behavior that restores homeostasis	Drinking water when dehydrated
Arousal theory (Yerkes–Dodson)	Organisms seek an optimal, task-dependent level of arousal	Moderate nervousness improving exam performance
Incentive theory	External stimuli "pull" behavior, independent of internal deficit	Eating dessert while not hungry
Maslow's hierarchy of needs	Lower-level needs generally must be met before higher-level needs motivate strongly	Prioritizing safety/food over career prestige when both are threatened

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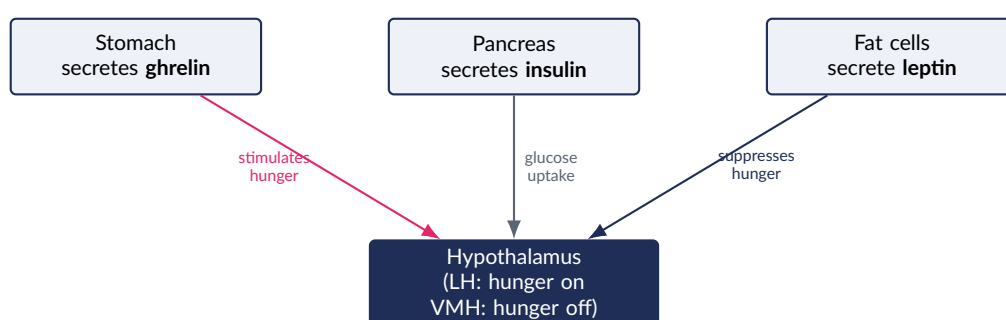
Bảng tổng hợp 5 lý thuyết động cơ: bản năng (khuôn mẫu bẩm sinh – ít dùng); giảm thiểu nhu cầu (nhu cầu sinh học tạo động lực, hướng đến cân bằng nội môi); hưng phấn/Yerkes–Dodson (tìm mức hưng phấn tối ưu theo độ khó nhiệm vụ); khuyến khích (kích thích bên ngoài "kéo" hành vi); và tháp nhu cầu Maslow (nhu cầu tầng dưới cần được đáp ứng trước khi nhu cầu tầng trên trở thành động lực mạnh).

5.2 Hunger and Achievement Motivation

5.2.1 Biological Regulation of Hunger

Hunger is regulated by a tightly interacting biological system centered on the **hypothalamus**, which monitors blood chemistry and receives neural signals from the digestive system to determine when eating should start and stop.

Factor	Source / location	Effect on hunger
Lateral hypothalamus (LH)	Region of the hypothalamus	Generates hunger; stimulation triggers eating, and damage causes <i>aphagia</i> (refusal to eat) – often summarized as the brain's "hunger on" switch.
Ventromedial hypothalamus (VMH)	Region of the hypothalamus	Produces satiety (fullness); damage causes overeating and obesity – the brain's "hunger off" switch.
Blood glucose	Bloodstream	Falling glucose levels are detected by the hypothalamus and trigger hunger; rising glucose after a meal contributes to satiety.
Ghrelin	Secreted by the stomach	Rises before meals; stimulates appetite and signals hunger to the brain.
Leptin	Secreted by fat (adipose) cells	Higher body-fat stores generally mean more leptin, which suppresses appetite; obesity can involve <i>leptin resistance</i> , in which the brain under-responds to leptin's signal.
Insulin	Secreted by the pancreas	Regulates blood glucose uptake into cells; also influences hunger signaling in the hypothalamus.



Hormonal regulation of hunger converges on the hypothalamus. Ghrelin from the stomach pulls the lateral hypothalamus's "hunger on" signal; leptin from fat cells pulls the ventromedial hypothalamus's "hunger off" signal; insulin from the pancreas shapes glucose availability, which the hypothalamus also monitors.

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Vùng dưới đồi (hypothalamus) điều khiển cảm giác đói: **vùng dưới đồi bên (lateral hypothalamus – LH)** là "công tắc bật" cảm giác đói (tổn thương gây bỏ ăn); **vùng dưới đồi giữa-bụng (ventromedial hypothalamus – VMH)** là "công tắc tắt" (tổn thương gây ăn quá nhiều, béo phì). **Đường huyết** giảm gây đói. Ba hormone chính: **ghrelin** (từ dạ dày, tăng trước bữa ăn, kích thích đói), **leptin** (từ mô mỡ, gây no – béo phì có thể liên quan đến *đề kháng leptin*), và **insulin** (từ tuyến tụy, điều hoà đường huyết và cảm giác đói).

Ví dụ mẫu · Leptin resistance and appetite regulation

A researcher finds that an obese participant has unusually *high* circulating leptin levels, yet the participant continues to report strong, frequent hunger and does not lose weight easily. How can leptin be elevated and hunger still be poorly controlled?

Leptin is produced by fat cells in proportion to fat stores, so more body fat normally means more leptin, which *should* suppress appetite. If hunger remains high despite elevated leptin, the most likely explanation is **leptin resistance**: the hypothalamus has become less sensitive to leptin's signal, so the "fullness" message is not being received effectively even though plenty of the hormone is present — much like insulin resistance in type 2 diabetes, where insulin is present but cells respond to it poorly.

5.2.2 Set Point Theory and Psychological/Cultural Influences on Eating

Set point theory proposes that the body has a genetically influenced "settling point" weight (or fat level) that it actively defends: when weight drops below this point, metabolism slows and hunger/ghrelin signaling intensifies to restore the set point; when weight rises above it, metabolism may speed up somewhat. This helps explain why sustained weight loss through dieting alone is often difficult — the body's regulatory systems work to push weight back toward its set point.

Hunger and eating are not purely biological, however. **Psychological and social/cultural factors** substantially shape what, when, and how much people eat: learned taste preferences (exposure and cultural familiarity strongly predict food liking), culturally scheduled meal times (feeling "hungry" at noon partly because that is when one's culture eats lunch), social facilitation of eating (eating more in the presence of others), stress-related eating, and the powerful influence of media/cultural body-image ideals on food choices and portion perception.

(!) **Lỗi thường gặp:** Đừng cho rằng lý thuyết điểm định mức (set point) có nghĩa là cân nặng không thể thay đổi bền vững. Set point chỉ giải thích tại sao cơ thể *chống lại* sự thay đổi cân nặng nhanh (bằng cách điều chỉnh trao đổi chất và cảm giác đói) – nó không phủ nhận vai trò của yếu tố tâm lý, xã hội, văn hoá (thói quen ăn uống học được, áp lực từ môi trường xã hội, hình ảnh cơ thể) trong việc định hình hành vi ăn uống lâu dài.

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Lý thuyết điểm định mức (set point theory): cơ thể có một mức cân nặng/mỡ "định mức" được điều chỉnh bởi gen mà nó chủ động bảo vệ – khi cân nặng giảm dưới điểm này, trao đổi chất chậm lại và cảm giác đói tăng lên để đưa cân nặng trở lại. Bên cạnh yếu tố sinh học, hành vi ăn uống còn chịu ảnh hưởng mạnh từ yếu tố **tâm lý-xã hội-văn hoá**: thói quen ăn theo giờ giấc văn hoá, ăn nhiều hơn khi có người khác, ăn do stress, và ảnh hưởng của hình ảnh cơ thể trên truyền thông.

5.2.3 Obesity: Biological and Environmental Contributors

Body weight regulation reflects a complex interplay of biological and environmental influences, consistent with the biopsychosocial approach used throughout this unit. Twin and adoption studies indicate a substantial genetic contribution to body weight and susceptibility to obesity, partly through genes influencing baseline metabolic rate (the speed at which the body burns calories at rest) and the sensitivity of appetite-regulating hormone systems (including leptin responsiveness, discussed above). At the same time, environmental and behavioral factors have shifted dramatically in many societies in recent decades: greater availability and marketing of inexpensive, calorie-dense processed foods, larger typical portion sizes, and more sedentary daily routines with less physical activity built into work, school, and transportation. Because genetically influenced set points evolved under conditions of relative food scarcity, many researchers argue that modern, highly "obesogenic" environments — abundant, palatable, calorie-dense food paired with reduced physical-activity demands — interact with an inherited tendency to defend body fat stores, helping to explain rising population-level obesity rates without requiring any change in the underlying biology of individuals.

Ví dụ mẫu · Gene-environment interaction in weight regulation

Identical twins raised apart — one in a food-scarce environment with high physical-activity demands, the other in a food-abundant, largely sedentary environment — often end up with noticeably different body weights despite sharing identical genes for metabolic rate and appetite regulation. Explain this outcome using the concept of gene-environment interaction, rather than treating either genetics or environment alone as the full explanation.

Genetics sets a *range* of plausible outcomes (e.g., a tendency toward efficient calorie storage and a particular baseline metabolic rate), but where an individual actually lands within that range depends heavily on environmental input (food availability, activity demands). Because the twins share genes but differ sharply in environment, their differing body weights show that neither genetics nor environment alone determines the outcome — the two interact, with environmental conditions able to push an identical genetic tendency toward substantially different results, much as set point theory's "settling point" can be nudged by sustained environmental pressure rather than fixed rigidly for life.

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Cân nặng cơ thể là kết quả tương tác giữa yếu tố **di truyền** (tốc độ trao đổi chất cơ bản, độ nhạy với hormone leptin) và yếu tố **môi trường/hành vi** (thực phẩm chế biến sẵn giá rẻ, nhiều calo; phần ăn lớn hơn; ít vận động hơn trong sinh hoạt hằng ngày). Vì điểm định mức sinh học tiến hoá trong điều kiện thực phẩm khan hiếm, môi trường hiện đại "gây béo phì" (obesogenic environment) – nhiều thực phẩm hấp dẫn, ít đòi hỏi vận động – tương tác với xu hướng di truyền bảo vệ lượng mỡ cơ thể, góp phần giải thích tỉ lệ béo phì gia tăng ở cấp độ dân số mà không cần có thay đổi sinh học ở từng cá nhân.

5.2.4 Achievement Motivation

Achievement motivation (need for achievement, or *nAch*) is the desire for significant accomplishment, mastery of skills or ideas, and attainment of a high personal standard of excellence. **David McClelland** measured individual differences in *nAch* partly using the **Thematic Apperception Test (TAT)**, a projective measure in which respondents write short stories about deliberately ambiguous pictures; McClelland argued that the frequency of achievement-related imagery and themes in these stories reflected the underlying strength of a person's need for achievement, since a projective, open-ended task leaves more room for an unprompted motive to surface than a direct self-report question would.

Psychologists distinguish two sources of motivation for any given activity: **intrinsic motivation**, the desire to engage in a behavior for its own sake — for the inherent satisfaction, interest, or sense of competence it provides — and **extrinsic motivation**, engaging in a behavior to obtain an external reward or avoid punishment. Both can drive achievement, but they interact in an important way: providing excessive extrinsic rewards for an activity a person already finds intrinsically enjoyable can sometimes *undermine* intrinsic motivation for that activity — the so-called **overjustification effect** — because the person's sense of "why" they are doing the activity shifts from internal interest to external payoff. **Self-determination theory** (Edward Deci and Richard Ryan) proposes that intrinsic motivation flourishes when three basic psychological needs are supported: **autonomy** (feeling that one's behavior is self-chosen rather than controlled by others), **competence** (feeling effective and capable), and **relatedness** (feeling connected to and cared about by others) — environments and relationships that support these three needs tend to sustain intrinsic motivation, while environments that undermine them (excessive external control, unclear expectations that prevent a sense of mastery, or social isolation) tend to erode it.

Ví dụ mẫu · Intrinsic vs. extrinsic motivation in the classroom

A teacher wants students to develop a lasting love of reading, not just short-term compliance. One approach offers a small prize for every book completed; another simply gives students free choice of books and class time to discuss what they found interesting. Which approach is more likely to build durable, long-term reading motivation, and why?

The free-choice, discussion-based approach is more likely to build durable motivation, because it supports **intrinsic motivation** — a sense of autonomy, interest, and competence that persists once the activity is no longer being externally rewarded. The prize-based approach relies on **extrinsic motivation**; per the overjustification effect, if students already found reading somewhat interesting, adding a salient external reward risks shifting their sense of "why they read" toward the prize, potentially reducing voluntary reading once the prizes stop — the opposite of the teacher's long-term goal.

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Động cơ thành tựu (achievement motivation) là mong muốn đạt được thành tích, làm chủ kỹ năng, và đạt tiêu chuẩn xuất sắc cá nhân. **David McClelland** đo nhu cầu thành tích (nAch) bằng **Bài kiểm tra Phóng chiếu Chủ đề Nhận thức (TAT)** – yêu cầu người tham gia kể chuyện dựa trên các hình ảnh mơ hồ, qua đó suy ra động cơ tiềm ẩn. **Động cơ nội tại (intrinsic motivation)** xuất phát từ sự hứng thú/thoả mãn bên trong khi thực hiện hoạt động; **động cơ ngoại tại (extrinsic motivation)** xuất phát từ phần thưởng/hình phạt bên ngoài. **Hiệu ứng phản tác dụng của phần thưởng (overjustification effect)**: thưởng ngoại tại quá nhiều cho một hoạt động vốn đã hấp dẫn nội tại có thể làm **giảm** động cơ nội tại đối với hoạt động đó. **Thuyết tự quyết (self-determination theory)** của **Deci & Ryan**: động cơ nội tại phát triển tốt khi ba nhu cầu tâm lý cơ bản được đáp ứng – **tự chủ (autonomy)**, **năng lực (competence)**, và **kết nối (relatedness)**.

5.3 Emotion: Components and Classic Theories

Emotion is a response involving three intertwined components: (1) **physiological arousal** — activation of the autonomic nervous system (increased heart rate, faster breathing, sweating); (2) an **expressive/behavioral component** — outwardly observable facial expressions, posture, and tone of voice; and (3) a **cognitive/subjective component** — the conscious, personally interpreted feeling itself (what it is like, from the inside, to feel afraid or joyful). Theories of emotion largely disagree about the *order* in which these three components occur and how they causally relate to one another.

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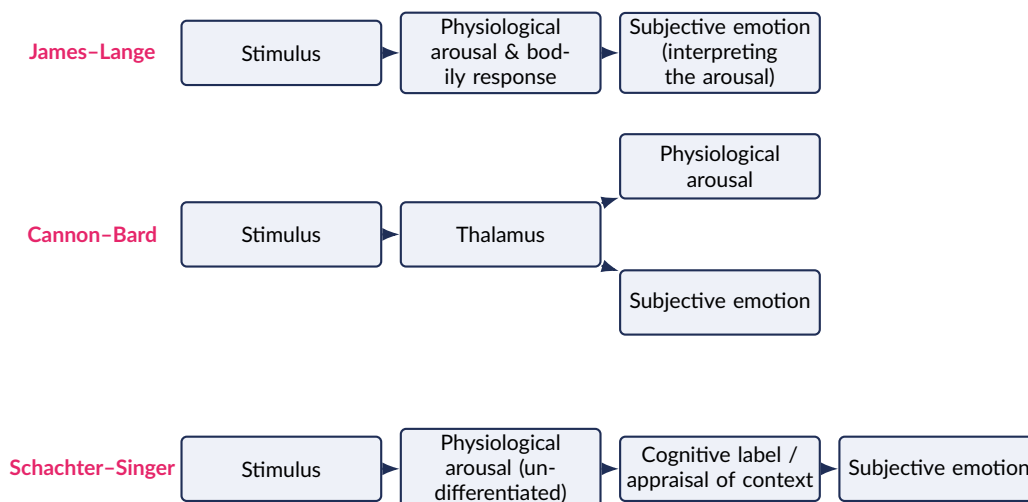
Cảm xúc (emotion) gồm ba thành phần: **hưng phấn sinh lý** (physiological arousal – tim đập nhanh, đổ mồ hôi), **thành phần biểu cảm/hành vi** (nét mặt, giọng nói, tư thế), và **thành phần nhận thức/chủ quan** (cảm giác chủ quan mà ta trải nghiệm). Các lý thuyết cảm xúc khác nhau chủ yếu ở **thứ tự** xảy ra của ba thành phần này.

5.3.1 James–Lange and Cannon–Bard Theories

The **James–Lange theory** (William James and Carl Lange, independently, late 1800s) proposes that physiological arousal and behavioral response come *first*, in direct reaction to a stimulus, and that the subjective experience of emotion follows *from* perceiving that bodily state: we do not tremble because we are afraid — we become afraid *because* we notice ourselves trembling. Sequence: stimulus → physiological arousal/bodily response → subjective emotion.

The **Cannon–Bard theory** (Walter Cannon and Philip Bard) rejected this sequence, arguing that physiological arousal and the subjective experience of emotion occur *simultaneously* and *independently*.

dently of one another, both triggered by activity in the **thalamus**. The thalamus relays sensory information about the emotion-triggering stimulus simultaneously to the cerebral cortex (producing the conscious feeling) and to the autonomic nervous system/body (producing physiological arousal) – neither causes the other; they are parallel effects of a common trigger.



Three classic causal sequences for emotion. James-Lange: bodily arousal causes the felt emotion. Cannon-Bard: the thalamus triggers arousal and felt emotion simultaneously and independently. Schachter-Singer: an undifferentiated arousal state must be cognitively labeled, using contextual cues, before a specific emotion is felt.

(!) Lỗi thường gặp: Nhầm lẫn phổ biến nhất trong phần này: theo **James-Lange**, hưng phấn sinh lý xảy ra **TRƯỚC** và **LÀ NGUYÊN NHÂN** của cảm xúc chủ quan (run rẩy → cảm thấy sợ). Theo **Cannon-Bard**, hưng phấn sinh lý và cảm xúc chủ quan xảy ra **ĐỒNG THỜI** và **ĐỘC LẬP** với nhau, cả hai đều do đồi thị (thalamus) khởi phát – run rẩy **KHÔNG** gây ra cảm giác sợ, hai thứ chỉ xảy ra cùng lúc. Khi đọc câu hỏi, hãy xác định xem đề bài mô tả một chuỗi nhân-quả (James-Lange) hay hai quá trình song song (Cannon-Bard).

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James-Lange: kích thích → **hưng phấn sinh lý/phản ứng cơ thể** → **cảm xúc chủ quan** (cảm xúc là kết quả của việc nhận biết phản ứng cơ thể). **Cannon-Bard:** kích thích → **đồi thị (thalamus)** → đồng thời và độc lập kích hoạt (a) hưng phấn sinh lý và (b) cảm xúc chủ quan – không cái nào là nguyên nhân của cái kia.

5.3.2 The Schachter-Singer Two-Factor Theory

The **Schachter-Singer two-factor theory** proposes that emotion requires two ingredients: (1) a state of **physiological arousal**, and (2) a **cognitive label** – an interpretation, drawn from the surrounding context, of *why* one is aroused. Critically, Schachter and Singer argued that generic physiological arousal is largely **undifferentiated** – the same racing heart and sweaty palms can be experienced as fear, excitement, or anger, depending entirely on how the situation is cognitively appraised and labeled.

Ví dụ mẫu · The Schachter and Singer (1962) epinephrine study

Participants were injected with epinephrine (adrenaline), a hormone that produces physiological arousal (racing heart, trembling). Some were accurately informed about the drug's physical effects; others were left uninformed or misinformed about what they would feel. Each participant then waited with a confederate who acted either euphoric (playful, silly) or angry (irritated,

hostile). Researchers measured the emotion participants reported feeling. What pattern of results would support the two-factor theory, and why?

The two-factor theory predicts that informed participants — who already have an accurate explanation for their racing heart ("it's the injection") — will not need to search the environment for a cause, and so will report relatively little emotional change regardless of the confederate's behavior. Uninformed/misinformed participants, however, experience the same physiological arousal but lack a ready explanation for it; the theory predicts they will look to the situational cues provided by the confederate to **label** their unexplained arousal — reporting euphoria around the euphoric confederate and irritation/anger around the angry confederate. This is exactly the pattern Schachter and Singer reported, supporting the idea that the specific, felt emotion depends on a cognitive label applied to a general state of arousal, not on the arousal alone.

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Lý thuyết hai yếu tố của **Schachter-Singer**: cảm xúc = **hưng phấn sinh lý** + **gán nhãn nhận thức** (cognitive label) dựa vào bối cảnh xung quanh. Hưng phấn sinh lý chung (undifferentiated) có thể được "dán nhãn" thành các cảm xúc khác nhau (vui, giận, sợ) tùy vào cách con người diễn giải tình huống. Thí nghiệm tiêm epinephrine của Schachter & Singer (1962): người tham gia không được giải thích rõ tác dụng của thuốc có xu hướng "mượn" cảm xúc của người đồng hành (confederate) xung quanh họ (vui vẻ hoặc tức giận) để giải thích cho cảm giác hưng phấn không rõ nguyên nhân của chính mình.

5.3.3 Lazarus's Cognitive-Appraisal Theory

Building on and extending Schachter and Singer, **Richard Lazarus's** cognitive-appraisal theory argues that some form of **cognitive appraisal** — an evaluation of a stimulus's meaning and relevance — must occur *before* an emotion can be experienced, but this appraisal can happen **instantaneously and automatically**, sometimes entirely outside conscious awareness. In other words, Lazarus agreed that cognition shapes emotion, but he did not think the "labeling" process always requires a slow, deliberate conscious search for an explanation — appraisal can be immediate and unconscious, occurring so quickly that arousal and the felt emotion seem to appear together.

GIẢI THÍCH TIẾNG VIỆT

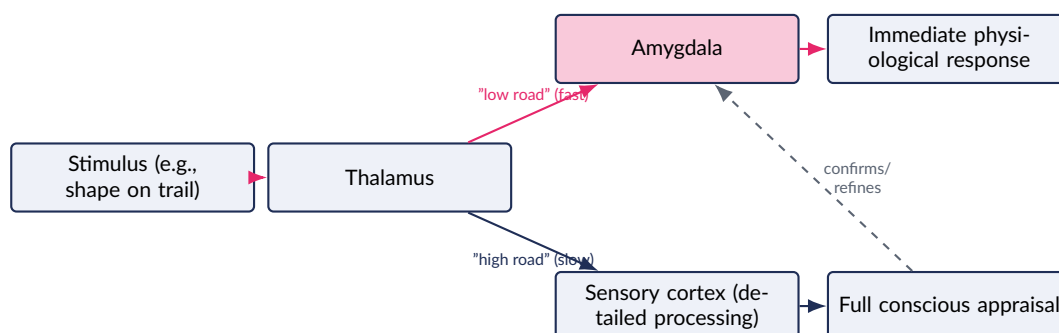
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Thuyết thẩm định nhận thức của **Lazarus** cho rằng một dạng **thẩm định nhận thức** (đánh giá ý nghĩa của kích thích) phải xảy ra **TRƯỚC** khi cảm xúc được trải nghiệm — nhưng quá trình thẩm định này có thể diễn ra **ngay lập tức và tự động**, đôi khi hoàn toàn ngoài ý thức. Khác với Schachter-Singer (nhấn mạnh việc tìm nguyên nhân một cách có ý thức), Lazarus cho rằng thẩm định có thể xảy ra quá nhanh đến mức ta cảm thấy hưng phấn và cảm xúc xuất hiện gần như cùng lúc.

5.3.4 Brain Structures in Emotion and Stress

Modern neuroscience has identified specific brain structures that support the general processes described by the classic theories above. The **amygdala**, a limbic-system structure, plays a central role in processing fear and other emotionally significant stimuli — it can trigger a rapid physiological threat response even before the cortex has fully, consciously interpreted a stimulus, illustrating how emotional reactions (especially fear) can begin subcortically and very quickly, consistent with Lazarus's point that appraisal can occur outside full conscious awareness. Neuroscientist **Joseph LeDoux** described this in terms of two parallel pathways from the thalamus: a fast, crude "**low road**" directly to the amygdala, enabling an immediate protective response, and a slower, more detailed "**high road**"

through the sensory cortex, which allows fuller conscious appraisal and can subsequently confirm, override, or fine-tune the amygdala's initial reaction.



LeDoux's dual-pathway model of fear processing. The fast "low road" (thalamus → amygdala) triggers an immediate protective response before the stimulus is fully identified; the slower "high road" (thalamus → cortex) supports full conscious appraisal, which can then confirm or override the amygdala's initial reaction.

The **hypothalamus**, already introduced in the context of hunger regulation, also coordinates the autonomic and endocrine components of the fight-or-flight stress response (covered later in this unit) by activating the sympathetic nervous system and triggering hormone release from the adrenal glands. The **prefrontal cortex** is involved in regulating and modulating emotional responses generated by these more primitive subcortical structures – for example, consciously reappraising a stressful situation (an emotion-focused coping strategy, covered later in this unit) recruits prefrontal activity that can dampen amygdala-driven arousal.

Ví dụ mẫu · A subcortical fear response before conscious appraisal

A hiker startles and jumps backward from a shape on the trail a split second before consciously recognizing whether the shape is a snake or a curved stick. Using the role of the amygdala, explain how a protective bodily reaction can occur before full conscious identification of the stimulus.

The **amygdala** can receive rapid, relatively crude sensory input and trigger an immediate physiological threat response (the jump backward, a burst of sympathetic arousal) via a fast subcortical pathway, *before* the slower, more detailed cortical pathway has finished fully identifying the object. This explains why the protective startle response can occur before the hiker consciously knows whether the object is actually dangerous – the amygdala's fast pathway favors a "better safe than sorry" reaction, even at the cost of occasional false alarms (jumping at a harmless stick).

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Hạch hạnh nhân (amygdala) – một cấu trúc thuộc hệ viền (limbic system) – đóng vai trò trung tâm trong xử lý sợ hãi và các kích thích có ý nghĩa cảm xúc, có thể kích hoạt phản ứng đe dọa NHANH trước khi vỏ não xử lý đầy đủ, có ý thức về kích thích – phù hợp với quan điểm của Lazarus rằng thẩm định có thể xảy ra ngoài ý thức. **Joseph LeDoux** mô tả hai "con đường" song song từ đồi thị: "**đường thấp**" (**low road**) nhanh, thô, đi trực tiếp đến hạch hạnh nhân để phản ứng ngay; và "**đường cao**" (**high road**) chậm hơn, đi qua vỏ não cảm giác để thẩm định đầy đủ, có thể xác nhận hoặc điều chỉnh lại phản ứng ban đầu của hạch hạnh nhân. **Vùng dưới đồi (hypothalamus)** điều phối thành phần thần kinh tự chủ và nội tiết của phản ứng stress (chiến-hay-chạy). **Vỏ não trước trán (prefrontal cortex)** tham gia điều chỉnh/kiểm soát các phản ứng cảm xúc từ các cấu trúc dưới vỏ não nguyên thủy hơn – ví dụ, thẩm định lại tình huống một cách có ý thức (một chiến lược ứng phó tập trung vào cảm xúc) huy động hoạt động của vỏ não trước trán để làm dịu hưng phấn do hạch hạnh nhân gây ra.

5.3.5 Comparing the Four Theories

Each theory of emotion makes a distinct, testable claim about causal order, and each is supported by particular evidence while facing its own criticism.

Theory	Predicted causal sequence	Key support / critique
James–Lange	Stimulus → physiological arousal/-bodily response → subjective emotion	Consistent with the facial feedback hypothesis (changing bodily/facial state shifts felt emotion); critiqued because distinct emotions do not always show clearly distinct physiological signatures
Cannon–Bard	Stimulus → thalamus → simultaneous, independent arousal <i>and</i> subjective emotion	Explains why felt emotion can seem to appear before a person is fully aware of bodily changes; critiqued because later research implicates additional structures (e.g., the amygdala) beyond the thalamus alone
Schachter–Singer	Stimulus → undifferentiated arousal → cognitive label (from context) → specific subjective emotion	Supported by the 1962 epinephrine misattribution study; critiqued because some emotional reactions appear to occur without a deliberate, conscious search for a label
Lazarus (cognitive-appraisal)	Rapid, sometimes unconscious cognitive appraisal → arousal and subjective emotion (near-simultaneous)	Explains fast, even unconscious emotional reactions without requiring a slow, deliberate labeling process

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Bảng tổng hợp 4 lý thuyết cảm xúc theo **trình tự nhân-quả** mà mỗi lý thuyết đề xuất: James–Lange (cơ thể phản ứng trước, cảm xúc theo sau); Cannon–Bard (đôi thị kích hoạt đồng thời cả phản ứng cơ thể và cảm xúc, độc lập với nhau); Schachter–Singer (hưng phấn chung + gán nhãn nhận thức dựa vào bối cảnh); Lazarus (thẩm định nhận thức nhanh, có thể ngoài ý thức, xảy ra trước/đồng thời với cảm xúc). Khi làm bài, hãy xác định lý thuyết nào khớp với trình tự được mô tả trong đề bài.

5.4 Expressing, Reading, and Measuring Emotion

5.4.1 Ekman's Research on Universal Facial Expressions

Paul Ekman's cross-cultural research found that a core set of facial expressions — for emotions including happiness, sadness, fear, anger, surprise, and disgust — are produced and *recognized* with strong consistency across widely different cultures, including isolated, preliterate societies with minimal exposure to Western media. This universality suggests that the basic expressive component of emotion has a biological, evolutionary basis rather than being purely a learned cultural convention. Cultures do, however, differ meaningfully in their **display rules** — social norms about when, how intensely, and in front of whom particular emotions may be openly displayed — so while the expressions themselves and their recognition are highly universal, the circumstances under which people choose to show them are culturally shaped.

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Nghiên cứu của **Paul Ekman** cho thấy các biểu cảm khuôn mặt cơ bản (vui, buồn, sợ, giận, ngạc nhiên, ghê tởm) được thể hiện và **nhận diện** khá giống nhau ở nhiều nền văn hoá khác nhau, kể cả những nền văn hoá ít tiếp xúc với truyền thông phương Tây – gợi ý cơ sở **sinh học/tiến hoá** của biểu cảm cảm xúc. Tuy nhiên, các nền văn hoá khác nhau về **quy tắc thể hiện** (display rules) – quy định xã hội về việc khi nào, ở mức độ nào, và trước ai thì được bộc lộ cảm xúc công khai.

5.4.2 The Facial Feedback Hypothesis

The **facial feedback hypothesis** proposes that the configuration of one's own facial muscles can itself *influence and intensify* — or even help generate — the corresponding subjective emotional experience, not merely express an emotion that is already fully formed internally. Adopting a facial expression, even one that is artificially or incidentally produced, can nudge subjective feeling in the matching direction; this idea is broadly consistent with the peripheral-feedback logic of James–Lange (bodily/muscular state shaping felt emotion), applied specifically to the face.

Ví dụ mẫu · Testing the facial feedback hypothesis

In a classic paradigm, participants hold a pen crosswise in their teeth (a position that forces the mouth into a smile-like configuration, without any participant realizing they are "smiling") while rating the funniness of cartoons; a comparison group holds the pen with their lips (a position incompatible with smiling). Which group is predicted to rate the cartoons as funnier, and what does the result imply about the direction of causality between expression and feeling?

The facial feedback hypothesis predicts the pen-in-teeth (forced-smile) group will rate the cartoons as funnier than the pen-in-lips group, even though neither group consciously intended to smile or frown. This outcome would suggest that facial muscle activity is not just a passive readout of an already-existing internal feeling — the facial configuration itself feeds back to shape and intensify the subjective emotional experience, supporting a body-to-mind (not only mind-to-body) direction of influence.

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Giả thuyết phản hồi khuôn mặt (facial feedback hypothesis): chính cấu hình cơ mặt (biểu cảm) có thể **tác động ngược** lên và làm **tăng cường** cảm xúc chủ quan, không chỉ đơn thuần là "kết quả" của cảm xúc đã hình thành sẵn bên trong. Thí nghiệm kinh điển: người ngậm bút ngang miệng (ép cơ mặt thành hình cười) đánh giá tranh biếm họa hài hước hơn so với người ngậm bút bằng môi (không thể cười) – cho thấy biểu cảm mặt có thể là **NGUYÊN NHÂN**, không chỉ là hệ quả, của cảm xúc.

5.4.3 Polygraph Testing and Its Limitations

A **polygraph** ("lie detector") does not detect lying directly. It simultaneously records several channels of **autonomic nervous system arousal** — heart rate, blood pressure, breathing rate, and skin conductance/perspiration (galvanic skin response) — on the assumption that deception provokes measurable physiological arousal from anxiety or guilt about being caught. This assumption is the polygraph's central weakness: arousal is not *specific* to lying. An honest but anxious person being questioned about a serious matter can show substantial arousal (producing a **false positive** — wrongly flagged as deceptive), while a practiced, calm liar, or someone using behavioral or mental countermeasures, can suppress or mask arousal (producing a **false negative**). Because no unique, reliable "lying" physiological signature has been identified, polygraph results are widely considered scientifically unreliable and are excluded or sharply restricted as evidence in many legal systems.

Ví dụ mẫu · Evaluating polygraph evidence

A workplace investigator wants to use polygraph results as the sole basis for firing an employee suspected of theft. The employee passed the polygraph but is known to be extremely calm under pressure; a second employee failed the polygraph but has a documented anxiety disorder and no other evidence links them to the theft. Explain, using what the polygraph actually measures, why relying solely on these results would be scientifically unsound.

The polygraph measures general autonomic arousal (heart rate, skin conductance, breathing),

not lying itself. A calm, low-reactivity individual can commit deception while producing minimal arousal, generating a **false negative** (an actual liar "passes"). An anxious individual can show strong arousal purely from the stress of interrogation and their anxiety disorder, with no deception involved at all, generating a **false positive** (an innocent person "fails"). Since arousal is not a specific marker of lying, neither result reliably establishes guilt or innocence, and the investigator should not treat the polygraph as conclusive evidence on its own.

(!) Lỗi thường gặp: Máy phát hiện nói dối (polygraph) KHÔNG đo sự nói dối một cách trực tiếp – nó chỉ đo **hưng phấn của hệ thần kinh tự chủ** (nhịp tim, huyết áp, hô hấp, phản ứng da). Vì lo lắng/hồi hộp (dù vô tội) cũng gây hưng phấn tương tự, và người nói dối thành thực có thể kiểm soát được phản ứng cơ thể, polygraph dễ cho ra **dương tính giả** (người vô tội bị nghi ngờ) và **âm tính giả** (người nói dối "qua mặt" được máy) – đây là lý do kết quả polygraph không được xem là bằng chứng đáng tin cậy trong nhiều hệ thống pháp lý.

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Polygraph đo các chỉ số **hưng phấn sinh lý tự chủ** (nhịp tim, hô hấp, độ dẫn điện của da do đổ mồ hôi), dựa trên giả định rằng nói dối gây ra hưng phấn do lo lắng/cảm giác tội lỗi. Vấn đề: hưng phấn không đặc hiệu cho việc nói dối – người vô tội lo lắng cũng hưng phấn (dương tính giả), người nói dối bình tĩnh/có kỹ thuật che giấu vẫn có thể không hưng phấn (âm tính giả). Do đó polygraph được xem là **không đáng tin cậy** về mặt khoa học.

5.4.4 Emotional Intelligence

Emotional intelligence (EI), a concept developed by researchers Peter Salovey and John Mayer and later popularized by Daniel Goleman, refers to the ability to perceive, understand, manage, and use emotions effectively – treating emotional skill as a measurable form of competence alongside more traditional cognitive intelligence. Four commonly described components are: **perceiving emotions** (accurately identifying emotion in faces, voices, and situations, including one's own emotional state), **understanding emotions** (grasping the likely causes and consequences of a given emotion), **managing emotions** (regulating one's own emotional responses appropriately to a context, and being able to calm down or redirect strong feelings), and **using emotions** (harnessing emotional information to guide thinking, decision-making, and behavior effectively – for example, channeling motivating anxiety before a performance rather than being paralyzed by it). Research links higher emotional intelligence to better social relationships, leadership effectiveness, and workplace performance, though critics note that EI is harder to measure with the same rigor as traditional intelligence tests and that its components sometimes overlap with existing personality traits.

Ví dụ mẫu · Identifying a component of emotional intelligence

During a tense team meeting, a manager notices a colleague's clenched jaw and short responses (correctly inferring frustration even though the colleague says nothing), waits for a calmer moment to raise the issue privately, and reframes her own pre-meeting nervousness as useful energy to prepare thoroughly rather than a signal to avoid the meeting. Identify which component(s) of emotional intelligence are demonstrated in this scenario.

Noticing the colleague's clenched jaw and short responses as signs of frustration demonstrates **perceiving emotions**. Choosing to wait for a calmer moment rather than reacting in the tense meeting demonstrates **managing emotions** (regulating her own response to the situation) as well as social awareness of the colleague's state. Reframing her own nervousness as useful preparatory energy rather than a reason to avoid the meeting demonstrates **using emotions** –

harnessing an emotional signal to guide productive behavior rather than being controlled by it.

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Trí tuệ cảm xúc (emotional intelligence – EI), phát triển bởi Peter Salovey và John Mayer, phổ biến rộng nhờ Daniel Goleman, là khả năng **nhận biết, hiểu, quản lý, và sử dụng** cảm xúc một cách hiệu quả – ở bản thân và ở người khác. Bốn thành phần: **nhận biết cảm xúc** (nhận diện chính xác cảm xúc qua nét mặt, giọng nói), **hiểu cảm xúc** (nắm được nguyên nhân/hệ quả của cảm xúc), **quản lý cảm xúc** (điều chỉnh phản ứng cảm xúc phù hợp bối cảnh), và **sử dụng cảm xúc** (khai thác thông tin cảm xúc để định hướng suy nghĩ/hành động). EI liên quan đến quan hệ xã hội tốt hơn và hiệu quả lãnh đạo, nhưng bị phê bình vì khó đo lường chính xác như các bài kiểm tra trí tuệ truyền thống.

5.5 Stress: Sources, Appraisal, and the Body's Response

5.5.1 Defining Stress and Cognitive Appraisal

Stress is the process by which we perceive and respond to events (**stressors**) that we judge as taxing or exceeding our resources to cope. Critically, stress is not simply a property of the event itself – it depends heavily on how the event is *interpreted*. Richard Lazarus's model of **cognitive appraisal** describes this interpretation as a two-step process. **Primary appraisal** asks: is this event relevant to me, and if so, is it a **threat** (potential harm/loss), a **challenge** (an opportunity that also demands effort), or irrelevant? **Secondary appraisal** asks: do I have adequate resources and coping ability to handle it? An identical objective stressor (say, a big exam) appraised as a *challenge* backed by adequate resources tends to produce motivated, adaptive engagement, while the same stressor appraised as a *threat* that exceeds one's resources tends to produce anxiety, avoidance, and impaired performance.

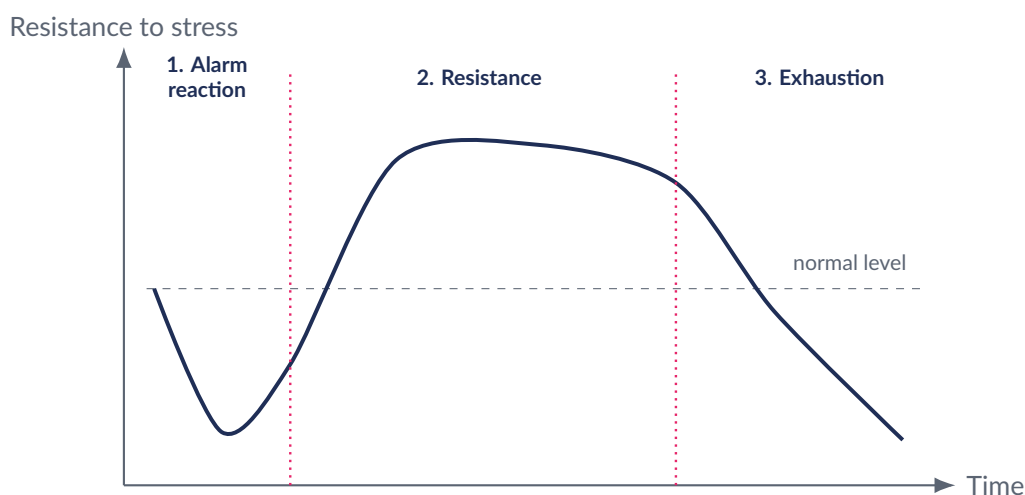
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Stress là quá trình con người thẩm định (appraise) và phản ứng với các **yếu tố gây stress (stressor)** mà họ cho là vượt quá khả năng ứng phó của mình. Mô hình **thẩm định nhận thức** của Lazarus gồm hai bước: **thẩm định sơ cấp (primary appraisal)** – sự kiện này có phải là **mối đe dọa (threat)** hay một **thử thách (challenge)**?; **thẩm định thứ cấp (secondary appraisal)** – tôi có đủ nguồn lực để ứng phó không? Cùng một sự kiện khách quan, nếu được thẩm định là "thử thách" với nguồn lực đủ, thường tạo ra phản ứng tích cực, thích nghi hơn so với khi bị thẩm định là "mối đe dọa" vượt quá khả năng.

5.5.2 Selye's General Adaptation Syndrome

Hans Selye described a general, three-stage physiological pattern that the body follows in response to *prolonged* stress, largely independent of the specific stressor involved – the **General Adaptation Syndrome (GAS)**.



Selye's General Adaptation Syndrome. Alarm reaction: resistance briefly dips below normal as the sympathetic nervous system activates. Resistance stage: the body mobilizes and sustains above-normal resistance to cope with the ongoing stressor. Exhaustion stage: physiological reserves become depleted, resistance falls below normal, and vulnerability to illness rises.

The three GAS stages

(1) Alarm reaction: the initial shock of encountering the stressor; the sympathetic nervous system activates and stress hormones (epinephrine, cortisol) are released; resistance briefly dips before the body's defenses mobilize. **(2) Resistance stage:** the body adapts, drawing on its reserves to maintain a sustained, above-normal level of physiological arousal and hormone output, actively coping with the continuing stressor. **(3) Exhaustion stage:** if the stressor persists long enough, the body's reserves become depleted; resistance falls below normal, immune functioning declines, and the person becomes vulnerable to fatigue, illness, and (in Selye's terms) "diseases of adaptation."

Ví dụ mẫu · Applying the GAS model to chronic caregiving stress

A woman spends 18 months as the sole caregiver for a parent with a serious illness, with no break. In month 1, she describes feeling shocked and physically shaken. By month 6, she reports functioning well despite constant demands, sleeping little but "pushing through." By month 15, she reports frequent colds, extreme fatigue, and difficulty coping even with minor additional demands. Map each period onto a stage of the General Adaptation Syndrome and explain the underlying physiology.

Month 1 corresponds to the **alarm reaction**: the sudden stressor triggers sympathetic nervous system activation and a brief dip in resistance as the body registers the shock before mobilizing. Month 6 corresponds to the **resistance stage**: sustained elevated cortisol and adrenaline output allow her to maintain above-normal functioning and cope with the ongoing demand, even though this is metabolically costly. Month 15 corresponds to the **exhaustion stage**: 15 months of sustained hormonal output has depleted her physiological reserves, resistance has dropped below normal, and — consistent with well-documented links between chronic stress and suppressed immune function — she becomes more vulnerable to illness (frequent colds) and can no longer cope even with small additional stressors.

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Hội chứng thích nghi chung (General Adaptation Syndrome – GAS) của Hans Selye mô tả 3

giai đoạn phản ứng sinh lý với stress kéo dài: **(1) Giai đoạn báo động (alarm reaction)** – hệ thần kinh giao cảm kích hoạt, sức đề kháng giảm nhẹ ban đầu rồi huy động; **(2) Giai đoạn đề kháng (resistance)** – cơ thể duy trì mức đề kháng CAO hơn bình thường để đối phó với stress kéo dài; **(3) Giai đoạn suy kiệt (exhaustion)** – nguồn lực cơ thể cạn kiệt, sức đề kháng giảm XUỐNG dưới mức bình thường, hệ miễn dịch suy yếu, dễ mắc bệnh.

5.5.3 Fight-or-Flight and Tend-and-Befriend

Walter Cannon first described the **fight-or-flight response**: acute stress activates the sympathetic nervous system, which stimulates the adrenal medulla (part of the endocrine system, covered in the biological bases unit) to release epinephrine (adrenaline) and norepinephrine into the bloodstream. This produces rapid physiological changes – increased heart rate and blood pressure, elevated blood glucose, and blood flow redirected toward the large muscles – that prepare the body for immediate, vigorous action: confronting the threat (fight) or escaping it (flight).

Shelley Taylor proposed a complementary stress response pattern, particularly well documented in females: **tend-and-befriend**. Under threat, rather than (or in addition to) fighting or fleeing, organisms – especially caregivers – may respond by **tending** to offspring and vulnerable others (protective, nurturing behavior) and **befriending** – seeking and building supportive social alliances that increase collective safety. This pattern has been linked to the hormone **oxytocin**, which promotes bonding and calming and is released under stress, particularly in females.

(!) Lỗi thường gặp: Đừng cho rằng phản ứng "chiến-hay-chạy" (fight-or-flight) là phản ứng stress DUY NHẤT và PHỔ QUÁT cho mọi người. **Shelley Taylor** chỉ ra một mẫu hình phản ứng khác, **chăm sóc-kết bạn (tend-and-befriend)**, được ghi nhận đặc biệt rõ ở nữ giới – dưới áp lực, cá nhân có thể chăm sóc con cái/người phụ thuộc và tìm kiếm liên kết xã hội hỗ trợ, thay vì chỉ đối đầu hoặc bỏ chạy. Cả hai đều là phản ứng thích nghi với stress, không loại trừ nhau.

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Phản ứng chiến-hay-chạy (fight-or-flight) của **Walter Cannon**: stress cấp tính kích hoạt hệ thần kinh giao cảm, tuyến tủy thượng thận tiết **adrenaline/noradrenaline**, chuẩn bị cơ thể hành động ngay (tăng nhịp tim, huyết áp, đường huyết, dồn máu ra các cơ lớn). **Phản ứng chăm sóc-kết bạn (tend-and-befriend)** của **Shelley Taylor**: dưới stress, cá nhân (đặc biệt là nữ giới) có xu hướng chăm sóc người phụ thuộc và tìm kiếm liên minh xã hội hỗ trợ – liên quan đến hormone **oxytocin**.

5.5.4 Measuring Stress: Life Events and Daily Hassles

Researchers have developed tools to quantify how much stress a person is carrying. **Thomas Holmes and Richard Rahe's Social Readjustment Rating Scale (SRRS)** assigns a numerical "stress value" to major life events (e.g., death of a spouse, divorce, marriage, job loss, retirement) based on how much life readjustment each typically demands; summing the point values for events experienced within a recent period (commonly the past year) yields a total score that has been used to predict elevated risk of future stress-related illness. A key limitation is that the scale weighs events by their *average* adjustment demand across many people, while Lazarus's model of individual cognitive appraisal still shapes how stressful any specific event actually feels to a given person – even a "positive" event like marriage carries a substantial point value because it still requires significant readjustment.

Beyond major life events, **daily hassles** – minor, recurring irritations of everyday life (traffic, small disagreements, clutter, looming deadlines) – accumulate over time and can contribute as much to overall stress and long-term health outcomes as occasional major events, precisely because of their chronic, repetitive nature.

Ví dụ mẫu · Interpreting an SRRS-style stress score

Over the past year, a young adult has experienced a marriage (assigned 50 points on a Holmes–Rahe-style scale), a job change (36 points), a move to a new residence (20 points), and a minor legal violation (11 points). (a) Calculate his total score. (b) Explain, using the logic of the SRRS, why psychologists caution against treating this score as a precise or complete measure of his stress-related health risk.

(a) Total: $50 + 36 + 20 + 11 = 117$ points. (b) The SRRS logic suggests that a higher cumulative point total corresponds to greater demand for life readjustment and, at a group-statistical level, elevated risk of stress-related illness. However, this total is only a rough population-average estimate — it cannot capture how *this particular* individual cognitively appraises each event (e.g., a job change he had eagerly pursued may be appraised as a positive challenge rather than a threat), his available coping resources, or the social support around him — all of which, per Lazarus's appraisal model, meaningfully shape his actually experienced stress well beyond what a simple checklist total can capture.

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Thang đánh giá tái điều chỉnh xã hội (Social Readjustment Rating Scale – SRRS) của Holmes & Rahe gán điểm số cho các sự kiện lớn trong đời (ly hôn, kết hôn, mất việc...) dựa trên mức độ đòi hỏi thích nghi – tổng điểm cao hơn có liên quan đến nguy cơ mắc bệnh do stress cao hơn. Hạn chế: thang đo này không tính đến sự khác biệt trong **thẩm định cá nhân (appraisal)** – cùng một sự kiện có thể được người này coi là thử thách tích cực nhưng người khác coi là mối đe dọa. **Phiền toái hằng ngày (daily hassles)** – những khó chịu nhỏ, lặp lại (kẹt xe, tranh cãi nhỏ) – có thể ảnh hưởng đến sức khỏe không kém, thậm chí hơn, các sự kiện lớn nhưng hiếm gặp, chính vì tính chất lặp đi lặp lại, mạn tính của chúng.

5.6 Stress, Coping, and Health**5.6.1 Stress and the Immune System**

Psychoneuroimmunology (PNI) is the interdisciplinary study of how psychological factors (stress, mood, emotion) interact with the nervous and endocrine systems to influence immune system functioning. Acute, brief stress can temporarily enhance certain immune responses, but **chronic** stress has the opposite effect: sustained elevation of cortisol suppresses immune activity — reducing the number and effectiveness of lymphocytes (immune cells) — leaving the body more vulnerable to infections, slower wound healing, and worse outcomes in existing chronic illnesses. This provides a direct physiological bridge between psychological stress and physical health.

GIẢI THÍCH TIẾNG VIỆT

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Tâm-thần kinh-miễn dịch học (psychoneuroimmunology – PNI) nghiên cứu cách các yếu tố tâm lý (stress, cảm xúc) tương tác với hệ thần kinh và hệ nội tiết để ảnh hưởng đến **hệ miễn dịch**. Stress **mạn tính** (kéo dài) làm tăng cortisol liên tục, **ức chế** hoạt động của tế bào lympho, khiến cơ thể dễ nhiễm bệnh hơn, vết thương lành chậm hơn, và bệnh mạn tính diễn tiến xấu hơn.

5.6.2 Coping Strategies and Social Support

Psychologists distinguish two broad categories of **coping** — the effort to manage the demands of a stressor. **Problem-focused coping** directly targets the stressor itself, attempting to reduce, remove, or change it (e.g., making a study schedule to address an upcoming exam, negotiating a deadline extension); it tends to be most effective when the stressor is genuinely **controllable**. **Emotion-focused coping** instead targets the emotional distress the stressor causes, without necessarily changing the

stressor itself (e.g., seeking emotional support, reframing/reappraising the situation, distraction, relaxation, exercise); it tends to be used more, and to be more adaptive, when the stressor is largely **uncontrollable**.

Social support – the presence of caring others who provide practical help and/or emotional comfort – acts as a powerful **buffer** against the negative physiological and psychological effects of stress, and is consistently associated with better immune function, faster recovery from illness, and even greater longevity. Researchers commonly distinguish several forms this support can take: **emotional support** (empathy, comfort, and a sense of being cared for), **informational support** (advice, guidance, or relevant knowledge that helps a person address the stressor), and **tangible/instrumental support** (concrete practical help, such as material assistance, transportation, or direct assistance with tasks) – different stressors often call for different combinations of these support types.

Chronic, unmanaged workplace stress can develop into **burnout** (a concept developed by **Christina Maslach**), characterized by three components: **emotional exhaustion** (feeling drained and depleted of emotional resources), **depersonalization/cynicism** (a detached, callous attitude toward one's work or the people one serves), and a **reduced sense of personal accomplishment** (feeling ineffective or unproductive despite one's efforts) – essentially a real-world manifestation of the exhaustion stage of Selye's GAS, sustained specifically by chronic occupational stress.

Ví dụ mẫu · Identifying coping strategies

Two students both feel anxious about a difficult final exam. Student A creates a detailed study schedule, forms a study group, and reviews weak topics systematically. Student B calls a friend to vent about the stress, goes for a run to clear her head, and reminds herself that "one exam doesn't define my future." Identify each student's dominant coping strategy and explain why each might be well-suited to their situation.

Student A is using **problem-focused coping**: her actions (scheduling, group study, targeted review) are aimed directly at reducing the source of the stress – inadequate exam preparation – which is a genuinely controllable factor, making this an effective match. Student B is using **emotion-focused coping**: venting, exercise, and cognitive reframing manage her emotional distress rather than changing the exam itself. Since the exam's existence and timing are not controllable at this point, managing the emotional response is a reasonable strategy; both approaches can also be combined (and often are, in practice).

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Ứng phó tập trung vào vấn đề (problem-focused coping): tác động trực tiếp để thay đổi/loại bỏ yếu tố gây stress – hiệu quả nhất khi stressor có thể **kiểm soát được**. **Ứng phó tập trung vào cảm xúc (emotion-focused coping)**: quản lý cảm xúc đau khổ do stress gây ra mà không thay đổi stressor – thường dùng khi stressor **không thể kiểm soát**. **Hỗ trợ xã hội (social support)** – sự hiện diện của người quan tâm, hỗ trợ – có vai trò như một "lớp đệm" (buffer) làm giảm tác động tiêu cực của stress lên sức khỏe, gồm ba dạng: **hỗ trợ cảm xúc** (đồng cảm, an ủi), **hỗ trợ thông tin** (lời khuyên, kiến thức hữu ích), và **hỗ trợ vật chất/thiết thực** (giúp đỡ cụ thể). **Kiệt sức nghề nghiệp (burnout)** theo **Christina Maslach** gồm ba thành phần: **cạn kiệt cảm xúc**, **tách rời/hoài nghi (depersonalization)**, và **giảm cảm giác thành tựu cá nhân** – có thể xem là biểu hiện thực tế của giai đoạn suy kiệt trong GAS, do stress công việc kéo dài gây ra.

5.6.3 Self-Efficacy and Locus of Control

Two related beliefs about personal control strongly influence how people appraise and cope with stress. **Self-efficacy** (a concept from Albert Bandura's social-cognitive theory, introduced in the learning unit) is a person's belief in their own capability to successfully execute the specific actions needed to produce a desired outcome; higher self-efficacy for a given challenge is associated with more persistent effort, more problem-focused coping, and lower stress in the face of that challenge.

Locus of control (Julian Rotter) describes a more general belief about *where* control over life outcomes resides: an **internal locus of control** is the belief that one's own actions and choices primarily determine outcomes, while an **external locus of control** is the belief that outcomes are primarily determined by luck, fate, or forces outside one's control. An internal locus of control is generally associated with more active, problem-focused coping and better stress-related health outcomes, though an extreme, inflexible internal locus can itself become a source of stress when a situation is genuinely uncontrollable.

Ví dụ mẫu · Locus of control and coping style

Two patients receive the same difficult medical diagnosis requiring a demanding lifestyle change. Patient A researches the condition thoroughly, works closely with her care team, and adjusts her diet and exercise routine, believing her daily choices meaningfully affect her outcome. Patient B assumes that whatever happens to his health is mostly a matter of luck or fate and makes few behavioral changes. Identify each patient's locus of control and the coping strategy each is more likely to use.

Patient A displays an **internal locus of control** (belief that her own actions determine outcomes) and is engaging in **problem-focused coping** – directly acting on the controllable aspects of her condition (diet, exercise, working with her care team). Patient B displays an **external locus of control** (belief that outcomes depend on luck/fate rather than his own actions), which is associated with more passive coping and, in this case, a failure to engage in problem-focused behaviors that are, medically, at least partially within his control.

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VN **Hiệu quả bản thân (self-efficacy)** của **Albert Bandura** là niềm tin của một người vào khả năng thực hiện thành công hành động cụ thể để đạt mục tiêu – hiệu quả bản thân cao gắn với nỗ lực bền bỉ hơn, ứng phó tập trung vào vấn đề nhiều hơn, và ít stress hơn. **Điểm kiểm soát (locus of control)** của **Julian Rotter** mô tả niềm tin tổng quát về nơi kiểm soát cuộc sống nằm ở đâu: **điểm kiểm soát nội tại (internal)** – tin rằng hành động của bản thân quyết định kết quả; **điểm kiểm soát ngoại tại (external)** – tin rằng kết quả phụ thuộc vào may rủi/số phận. Điểm kiểm soát nội tại thường gắn với ứng phó tích cực, tập trung vào vấn đề và sức khỏe tốt hơn khi đối mặt stress.

5.6.4 Behavioral Risk Factors and Health Prevention

Beyond personality and appraisal, health psychologists study specific **behavioral risk factors** that link psychological and social factors to physical illness at a population level: tobacco use, physical inactivity, poor diet, and excessive alcohol use are among the most significant preventable contributors to chronic disease and premature mortality in many countries. Because these behaviors are shaped by the same psychological principles covered throughout this book – learned habits (operant and classical conditioning), social influence and modeling, cognitive beliefs about risk and self-efficacy, and motivation/incentive structures – health psychologists design behavior-change interventions (e.g., structured smoking-cessation programs, exercise-adherence programs) that directly apply these principles, and **treatment adherence** (the extent to which a patient follows a prescribed medical or psychological treatment plan) is itself strongly predicted by self-efficacy, social support, and the patient's understanding of and belief in the treatment's value – not simply by having access to the treatment.

GIẢI THÍCH TIẾNG VIỆT

VN **Yếu tố hành vi nguy cơ (behavioral risk factors)** như hút thuốc, ít vận động, ăn uống kém, và lạm dụng rượu là những nguyên nhân có thể phòng ngừa hàng đầu gây bệnh mạn tính. Vì các hành vi này chịu ảnh hưởng bởi các nguyên lý tâm lý học đã học (điều kiện hoá, ảnh hưởng

xã hội, hiệu quả bản thân, động cơ), các nhà tâm lý học sức khỏe thiết kế các can thiệp thay đổi hành vi dựa trên các nguyên lý này. **Sự tuân thủ điều trị (treatment adherence)** – mức độ bệnh nhân tuân theo kế hoạch điều trị – được dự đoán mạnh bởi hiệu quả bản thân, hỗ trợ xã hội, và niềm tin vào giá trị điều trị, không chỉ đơn giản là có được tiếp cận điều trị hay không.

5.6.5 Personality, Health, and the Biopsychosocial Model

Friedman and Rosenman's classic research identified two contrasting behavior patterns and linked them to differing cardiovascular risk. **Type A personality:** competitive, impatient/time-urgent, easily angered and hostile, driven by a strong achievement orientation. **Type B personality:** more relaxed, easy-going, less competitive and less prone to hostility. Their research found Type A individuals at significantly elevated risk for coronary heart disease – and follow-up research identified **hostility** specifically (not simply ambition, competitiveness, or a busy schedule) as the most toxic component of the Type A pattern for cardiovascular health.

More broadly, health psychologists favor the **biopsychosocial model**: physical (and psychological) health and illness are best explained as the product of interacting **biological** factors (genetics, physiology, immune function), **psychological** factors (behavior, beliefs, personality, coping style, stress), and **social** factors (relationships, culture, socioeconomic status, access to care) – rather than by biology alone (the narrower medical model).

Ví dụ mẫu · Distinguishing the toxic ingredient in Type A behavior

Two colleagues are both highly ambitious, work long hours, and set demanding goals. One is warm, calm under pressure, and rarely angry even when frustrated; the other is quick to anger, frequently hostile toward coworkers, and impatient with any delay. Based on cardiovascular research on Type A personality, which colleague is at greater health risk, and why is ambition alone not the deciding factor?

The second colleague – hostile, quick to anger, impatient – is at greater cardiovascular risk. Follow-up research on the original Type A pattern isolated **hostility** as the specific toxic ingredient linked to coronary heart disease, not competitiveness or a demanding work ethic by itself. The first colleague shares the ambitious, hardworking traits associated with Type A but lacks the hostile, anger-prone component, which is why ambition alone does not fully predict cardiovascular risk.

(!) Lỗi thường gặp: Đừng đồng nhất nhân cách **Type A** với việc chỉ "chăm chỉ" hay "có tham vọng". Nghiên cứu theo dõi sau này của Friedman & Rosenman cho thấy thành phần **độc hại** nhất đối với sức khỏe tim mạch trong mẫu hình Type A là **sự thù địch/dễ nổi giận (hostility)**, KHÔNG phải bản thân tính cạnh tranh hay khối lượng công việc. Một người chăm chỉ, tham vọng nhưng ôn hoà, ít nóng giận không mang cùng mức rủi ro như một người tham vọng nhưng thù địch, dễ giận dữ.

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Type A (cạnh tranh, vội vã, dễ thù địch/nóng giận, tham vọng cao) có nguy cơ bệnh tim mạch cao hơn **Type B** (thoải mái, ít cạnh tranh) – trong đó **sự thù địch (hostility)** được xác định là yếu tố độc hại chính. **Mô hình sinh học-tâm lý-xã hội (biopsychosocial model)** trong y tế: sức khỏe là kết quả tương tác giữa yếu tố **sinh học** (gen, sinh lý), **tâm lý** (hành vi, niềm tin, stress) và **xã hội** (quan hệ, văn hoá, kinh tế-xã hội) – khác với mô hình y khoa thuần sinh học.

5.6.6 Stress Management Techniques

Beyond the cognitive coping strategies discussed above, several well-supported behavioral techniques directly target the physiological impact of stress. **Aerobic exercise** reliably reduces circulating stress hormones (such as cortisol) and self-reported anxiety while improving mood, partly through the release of endorphins and improvements in cardiovascular and immune functioning. **Relaxation training** and **biofeedback** – using real-time physiological monitoring (heart rate, muscle tension, skin conductance) to teach a person voluntary control over responses that are normally automatic – can measurably lower sympathetic nervous system arousal. **Mindfulness-based approaches**, which cultivate nonjudgmental, present-focused awareness of one's own thoughts and bodily sensations, have accumulating research support for reducing stress-related symptoms and are increasingly incorporated into cognitive-behavioral treatment protocols. Adequate, regular **sleep** restores the physiological resources depleted during the resistance stage of the GAS and supports both immune function and emotional regulation, making it a foundational – if easily neglected – stress-management tool.

GIẢI THÍCH TIẾNG VIỆT

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Ngoài các chiến lược ứng phó nhận thức, một số kỹ thuật hành vi giúp quản lý tác động sinh lý của stress: **tập thể dục hiếu khí (aerobic exercise)** giảm hormone stress (cortisol) và lo âu, cải thiện khí sắc (một phần qua endorphin); **huấn luyện thư giãn** và **biofeedback** (dùng thiết bị theo dõi sinh lý theo thời gian thực để học cách kiểm soát tự nguyện các phản ứng thường tự động) giúp giảm hưng phấn giao cảm; **chánh niệm (mindfulness)** – nhận thức hiện tại, không phán xét – ngày càng được tích hợp vào các phác đồ trị liệu nhận thức-hành vi; và **ngủ đủ giấc** giúp phục hồi nguồn lực sinh lý đã tiêu hao trong giai đoạn đề kháng của GAS, đồng thời hỗ trợ hệ miễn dịch và điều hoà cảm xúc.

5.6.7 The Placebo Effect in Health Psychology

A **placebo** is an inactive substance or sham treatment with no direct pharmacological or physiological effect on the condition being treated. The **placebo effect** refers to the measurable improvement in symptoms that can occur simply because a person *believes* they are receiving effective treatment – a striking demonstration of how psychological expectation can influence physiological and subjective outcomes, mediated partly through the release of the body's own natural pain-relieving and mood-related chemicals (such as endorphins) in response to the expectation of relief. This is precisely why credible research on any new medical or psychological treatment (a research-methods concept introduced in the biological bases unit) requires a control group receiving a placebo, and ideally a **double-blind** design in which neither participants nor the researchers administering treatment know who is receiving the real treatment versus the placebo – without this control, an active treatment's apparent effectiveness could simply reflect the placebo effect rather than the treatment's specific biological action.

GIẢI THÍCH TIẾNG VIỆT

VN

Hiệu ứng giả dược (placebo effect): sự cải thiện triệu chứng có thể xảy ra chỉ vì người bệnh **tin rằng** mình đang được điều trị hiệu quả, dù thực tế nhận "giả dược" (placebo) – chất/phương pháp không có tác dụng dược lý trực tiếp. Cơ chế một phần liên quan đến việc cơ thể tự giải phóng các chất giảm đau/cải thiện khí sắc tự nhiên (như endorphin) khi có kỳ vọng được chữa lành. Đây là lý do các nghiên cứu điều trị đáng tin cậy cần nhóm chứng nhận giả dược và thiết kế **mù đôi (double-blind)** – cả người tham gia và người thực hiện đều không biết ai nhận điều trị thật – để tách biệt hiệu quả thực của điều trị khỏi hiệu ứng giả dược.

5.7 Defining and Classifying Psychological Disorders

5.7.1 The DSM-5 and Criteria for Disorder

Clinicians in the United States classify and diagnose mental disorders using the **Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5)**, published by the American Psychiatric Association (a 2022 text revision, DSM-5-TR, updated criteria and text without introducing a new edition number). The DSM-5 organizes disorders into categories and specifies observable, symptom-based criteria — including minimum duration and severity — that must be met for a diagnosis, aiming for consistency across clinicians. Internationally, many countries instead (or additionally) use the World Health Organization's **International Classification of Diseases (ICD)**, which includes a chapter on mental and behavioral disorders; the two systems have been revised over time to align closely with each other, though some category boundaries and specific criteria differ.

No single feature defines "disorder" in all cases, but clinicians commonly weigh four considerations, sometimes summarized as the **4 D's**:

Four considerations in defining a disorder

Deviance: the thoughts, feelings, or behaviors differ markedly from social/cultural norms and expectations. **Distress:** the pattern causes significant subjective suffering to the individual. **Dysfunction:** the pattern interferes with the person's ability to carry out normal daily activities, relationships, or work/school roles. **Danger:** the pattern poses a risk of harm to the person or to others (present in some, not all, disorders). None of these alone is necessary or sufficient in every case — cultural context, degree of impairment, and clinical judgment all factor into a diagnosis.

Disorders frequently do not occur in isolation. **Comorbidity** refers to the presence of two or more distinct disorders in the same individual at the same time (for example, major depressive disorder and generalized anxiety disorder frequently co-occur) — a common and clinically important pattern that complicates both diagnosis (symptoms of one disorder can mask or mimic another) and treatment planning (a single intervention may need to address more than one condition at once).

A classic and still widely discussed challenge to diagnostic reliability comes from **David Rosenhan's** 1973 study "On Being Sane in Insane Places." Eight healthy research confederates sought admission to psychiatric hospitals, each reporting hearing a vague, unfamiliar voice as their only symptom; all were admitted, most receiving a diagnosis of schizophrenia, and once inside, staff continued to interpret the confederates' entirely normal behavior (such as note-taking) through the lens of their diagnosis, rather than as normal behavior. The study is frequently cited as evidence that diagnostic labels can bias how subsequent, genuinely normal behavior is perceived and interpreted — an important caution as clinicians apply the DSM-5 criteria discussed above, and part of the broader case for approaching diagnosis carefully, with attention to context and cultural factors rather than label alone. Later methodological critiques have questioned some specifics of Rosenhan's account, but the study's core caution about the power of diagnostic labels to shape perception remains widely cited in discussions of diagnostic reliability.

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Nghiên cứu của David Rosenhan (1973), "On Being Sane in Insane Places", cho thấy khi những người hoàn toàn khỏe mạnh giả vờ nghe thấy một giọng nói mơ hồ để xin nhập viện tâm thần, tất cả đều được nhận vào viện (đa số được chẩn đoán tâm thần phân liệt), và sau đó nhân viên y tế tiếp tục diễn giải các hành vi HOÀN TOÀN BÌNH THƯỜNG của họ (như ghi chép) theo hướng phù hợp với chẩn đoán đã có. Nghiên cứu này thường được trích dẫn như một lời cảnh báo rằng **nhãn chẩn đoán** có thể làm thiên lệch cách người khác diễn giải hành vi bình thường sau đó – một lý do quan trọng để áp dụng tiêu chuẩn DSM-5 một cách cẩn trọng, có xem xét bối cảnh và văn hoá.

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DSM-5 (Diagnostic and Statistical Manual, phiên bản 5) của Hội Tâm thần học Hoa Kỳ là hệ thống phân loại chuẩn để chẩn đoán rối loạn tâm lý, dựa trên các tiêu chuẩn triệu chứng cụ thể (thời gian kéo dài, mức độ nghiêm trọng). Bốn tiêu chí thường dùng để xác định "rối loạn" (không phải tiêu chí nào cũng bắt buộc trong mọi trường hợp): **lệch chuẩn (deviance)** – khác biệt rõ so với chuẩn văn hoá-xã hội; **đau khổ (distress)** – gây khổ đau chủ quan; **rối loạn chức năng (dysfunction)** – cản trở hoạt động sống hằng ngày; **nguy hiểm (danger)** – có nguy cơ gây hại cho bản thân/người khác.

5.7.2 Explanatory Models and Stigma

The **medical model** views psychological disorders as illnesses with identifiable physical causes (genetic predisposition, neurotransmitter or brain-structure abnormalities) that can be diagnosed through symptoms and, in principle, treated or cured through medical intervention. The **biopsychosocial model**, the dominant contemporary framework, instead understands psychological disorders as arising from the *interaction* of **biological** factors (genetic vulnerability, neurotransmitter/brain differences), **psychological** factors (maladaptive thought patterns, learned behaviors, coping style, trauma history), and **social-cultural** factors (family dynamics, cultural expectations and stigma, socioeconomic stress, availability of social support) – no single level of analysis is treated as the complete explanation on its own.

Stigma – negative, often inaccurate stereotypes and social devaluation attached to mental illness – remains a significant barrier: it can lead to discrimination, social exclusion, and, importantly, discourage people from seeking needed treatment out of fear of judgment. Modern clinical and educational practice emphasizes accurate public information and **person-first, non-stigmatizing language** (for example, describing "a person with schizophrenia" or "a person living with depression," rather than defining someone by their diagnosis) as one part of reducing this stigma.

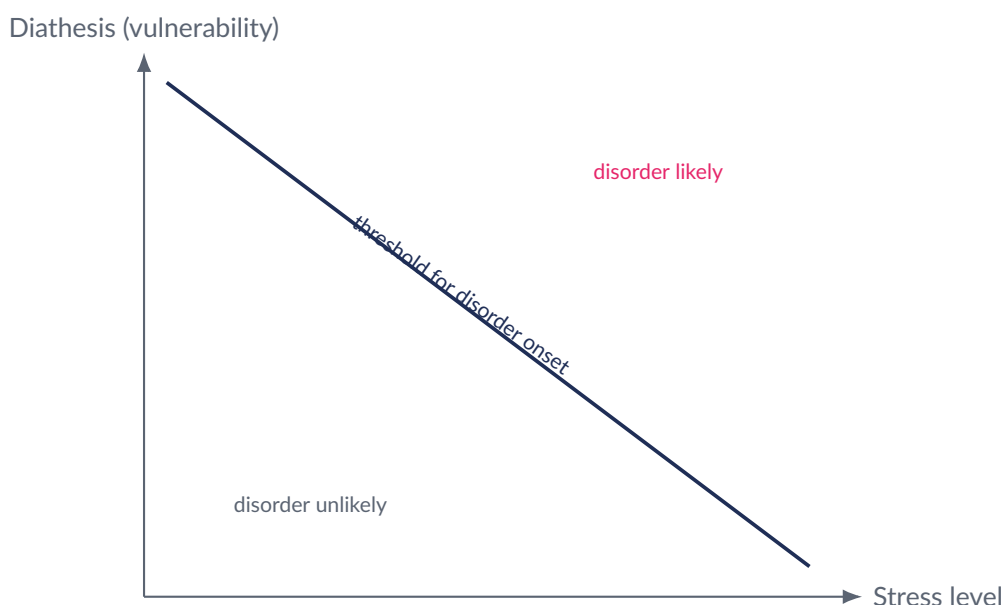
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Mô hình y khoa (medical model) coi rối loạn tâm lý là bệnh lý có nguyên nhân sinh học cụ thể, có thể chẩn đoán và điều trị bằng phương pháp y khoa. **Mô hình sinh học-tâm lý-xã hội (biopsychosocial model)** – mô hình chủ đạo hiện nay – giải thích rối loạn tâm lý là kết quả **tương tác** giữa yếu tố sinh học (gen, hoá học não), tâm lý (kiểu suy nghĩ, hành vi học được, sang chấn), và xã hội-văn hoá (gia đình, kỳ thị xã hội, áp lực kinh tế). **Kỳ thị (stigma)** đối với bệnh tâm lý có thể khiến người bệnh e ngại tìm kiếm điều trị – vì vậy ngôn ngữ **tôn trọng, không kỳ thị** (VD: "người mắc tâm thần phân liệt" thay vì gọi tên người bệnh bằng chẩn đoán) là một phần quan trọng trong thực hành hiện đại.

5.7.3 The Diathesis-Stress Model

The **diathesis-stress model** offers a widely used framework for explaining *why* some people develop a psychological disorder under difficult circumstances while others facing similar circumstances do not. A **diathesis** is a predisposition or vulnerability – genetic, biological, or a product of early psychological experience – that by itself may not be sufficient to produce a disorder. The model proposes that a disorder is most likely to emerge when a sufficient diathesis *combines* with a sufficient level of environmental **stress**: a person with a strong underlying vulnerability may develop a disorder under only mild stress, while a person with a weaker vulnerability may remain well even under substantial stress, or may develop a disorder only if stress becomes severe enough.



The diathesis-stress model. A disorder becomes likely once combined diathesis (vulnerability) and stress cross a threshold (diagonal line): a person with high vulnerability needs only modest stress to cross the threshold, while a person with low vulnerability may remain below threshold even under substantial stress.

Ví dụ mẫu · Applying the diathesis-stress model

Two siblings share a similar genetic risk for depression (a comparable diathesis). One experiences a relatively stable, low-stress early adulthood and never develops depression; the other experiences a major job loss, a relationship breakdown, and social isolation within the same year and develops a depressive episode. Using the diathesis-stress model, explain this difference despite their similar genetic vulnerability.

The diathesis-stress model predicts that a shared diathesis (genetic vulnerability to depression) will not necessarily produce a disorder unless it combines with a sufficient level of environmental stress. The sibling who encountered a convergence of major stressors (job loss, relationship breakdown, isolation) crossed the combined diathesis-plus-stress threshold, while the sibling in comparatively low-stress circumstances remained below that threshold despite carrying a similar underlying vulnerability – illustrating that diathesis alone, without sufficient stress, may not be enough to trigger a disorder.

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Mô hình khuynh hướng-stress (diathesis-stress model) giải thích tại sao một số người phát triển rối loạn tâm lý trong khi người khác gặp hoàn cảnh tương tự thì không. **Khuynh hướng dễ mắc bệnh (diathesis)** là yếu tố nguy cơ nền (di truyền, sinh học, hoặc tâm lý từ trải nghiệm sớm) – một mình nó thường CHƯA đủ để gây rối loạn. Rối loạn có khả năng xuất hiện khi khuynh hướng đủ lớn KẾT HỢP với mức độ stress môi trường đủ lớn – người có khuynh hướng cao chỉ cần stress nhẹ đã vượt ngưỡng; người có khuynh hướng thấp có thể chịu được stress lớn mà vẫn không phát bệnh.

5.7.4 Cultural Considerations in Diagnosis

Cultural context shapes both how psychological symptoms are expressed and how they are clinically interpreted. What counts as "deviant" varies across cultures and historical periods, so clinicians must distinguish genuine dysfunction from behavior that is simply unfamiliar or nonconforming relative to the clinician's own cultural background. Some symptom patterns – sometimes called **culture-bound**

syndromes — appear predominantly or exclusively within specific cultural contexts. The DSM-5 includes a **Cultural Formulation Interview** to help clinicians systematically consider a client's cultural identity, cultural ways of explaining distress, and cultural factors in the client's environment and in the clinician-client relationship when making a diagnosis. Ignoring cultural context risks both **over-diagnosis** (mistaking normal cultural variation for disorder) and **underdiagnosis** (failing to recognize genuine distress that is expressed in culturally specific terms unfamiliar to the clinician).

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Bối cảnh văn hoá ảnh hưởng đến cách triệu chứng tâm lý được **biểu hiện** VÀ cách chúng được **diễn giải** trên lâm sàng. Một số mẫu triệu chứng đặc trưng riêng cho một số nền văn hoá cụ thể được gọi là **hội chứng gắn với văn hoá (culture-bound syndromes)**. DSM-5 có **Bảng phỏng vấn hình thành văn hoá (Cultural Formulation Interview)** để giúp nhà lâm sàng xem xét ảnh hưởng của bản sắc và bối cảnh văn hoá khi chẩn đoán – nhằm tránh cả việc **chẩn đoán quá mức** (nhầm biến thể văn hoá bình thường thành rối loạn) và **chẩn đoán thiếu** (không nhận ra đau khổ thực sự được biểu đạt theo cách đặc trưng văn hoá mà nhà lâm sàng không quen thuộc).

5.8 Anxiety-Related and Trauma-Related Disorders

5.8.1 Generalized Anxiety Disorder and Panic Disorder

Generalized anxiety disorder (GAD) involves persistent, excessive, and difficult-to-control **worry** about multiple areas of life (work, health, relationships, finances) for **at least six months**, accompanied by physical symptoms such as restlessness, muscle tension, fatigue, irritability, and disturbed sleep. The worry is diffuse and not tied to one specific trigger — the anxiety is essentially free-floating and chronic.

Panic disorder instead involves recurrent, **unexpected panic attacks** — sudden, discrete episodes of intense fear or discomfort that peak within minutes, featuring physical symptoms such as a racing heart, chest pain or tightness, shortness of breath, dizziness, trembling, and often a frightening sense of impending doom or loss of control. Following such attacks, individuals commonly develop persistent worry about having further attacks (or about the situations where an attack occurred), which can lead to avoidance behavior.

(!) Lỗi thường gặp: Phân biệt rối loạn lo âu lan toả (**GAD**) và rối loạn hoảng loạn (**panic disorder**): GAD là lo âu **mạn tính, lan toả, không có một điểm khởi phát cụ thể**, kéo dài liên tục ít nhất 6 tháng, về nhiều chủ đề khác nhau. Rối loạn hoảng loạn là các **cơn hoảng loạn RỜI RẠC, ĐỘT NGỘT**, đạt cực điểm trong vài phút rồi giảm dần – khác hẳn kiểu lo âu "nền" kéo dài liên tục của GAD. Đừng nhầm "một cơn hoảng loạn dữ dội" với "lo âu triền miên".

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Rối loạn lo âu lan toả (generalized anxiety disorder – GAD): lo âu quá mức, khó kiểm soát, về nhiều lĩnh vực cuộc sống, kéo dài ≥ 6 tháng, kèm triệu chứng cơ thể (bồn chồn, căng cơ, mất ngủ). **Rối loạn hoảng loạn (panic disorder):** các **cơn hoảng loạn lặp lại, bất ngờ**, đạt cực điểm trong vài phút (tim đập nhanh, khó thở, cảm giác sắp chết/mất kiểm soát), kèm lo lắng dai dẳng về việc lại lên cơn.

5.8.2 Phobias and Social Anxiety Disorder

A **specific phobia** is a marked, persistent, and excessive or irrational fear of a specific object or situation (e.g., heights, spiders, enclosed spaces, flying) that is out of proportion to any actual danger, leading the person to avoid the feared object/situation or endure it with intense distress. DSM-5 recognizes several common subtypes, including **animal** type (spiders, dogs), **natural environment**

type (heights, storms, water), **blood-injection-injury** type (needles, medical procedures – notable for sometimes triggering a drop in heart rate/blood pressure and fainting, unlike the arousal spike typical of other phobias), and **situational** type (flying, enclosed spaces). **Social anxiety disorder** involves marked fear or anxiety specifically about social situations in which the person might be observed, scrutinized, or negatively judged by others (e.g., public speaking, eating in front of others, meeting new people), again leading to avoidance or significant distress.

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Ám ảnh sợ đặc hiệu (specific phobia): sợ hãi quá mức, vô lý, dai dẳng đối với một đối tượng/tình huống cụ thể (độ cao, côn trùng, không gian kín...), dẫn đến hành vi né tránh. **Rối loạn lo âu xã hội (social anxiety disorder):** sợ hãi các tình huống xã hội có thể bị người khác quan sát/đánh giá tiêu cực (nói trước công chúng, gặp người lạ), cũng dẫn đến né tránh hoặc đau khổ đáng kể.

5.8.3 Obsessive-Compulsive Disorder

Obsessive-compulsive disorder (OCD) involves **obsessions** – recurrent, intrusive, unwanted thoughts, urges, or images that cause marked anxiety or distress (e.g., persistent fear of contamination, intrusive doubts about having caused harm) – and/or **compulsions** – repetitive behaviors or mental acts (handwashing, checking, counting, silently repeating phrases) performed to reduce the distress caused by an obsession or according to rigid, self-imposed rules. The compulsions typically provide only brief relief and are excessive relative to what they are meant to prevent, and the whole cycle is time-consuming and distressing to the person experiencing it – critically, unlike ordinary habits, OCD is experienced as unwanted and **ego-dystonic** (in conflict with the person's own wishes), not as a lifestyle preference.

(!) **Lỗi thường gặp:** Trong đời thường, từ "OCD" thường bị dùng sai để chỉ những người "thích ngăn nắp" hay "cầu toàn" – đây là cách hiểu **không chính xác** về mặt lâm sàng. **OCD thật sự** gây ra **đau khổ đáng kể** và hành vi cưỡng chế (compulsion) không mang lại cảm giác hài lòng lâu dài mà chỉ tạm thời giảm lo âu do ám ảnh (obsession) gây ra – người bệnh thường **Ý THỨC** được rằng suy nghĩ/hành vi của mình là quá mức hoặc vô lý (ego-dystonic) nhưng không thể kiểm soát được, khác hoàn toàn với việc đơn giản là thích sự gọn gàng.

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Rối loạn ám ảnh cưỡng chế (OCD): ám ảnh (obsessions) – ý nghĩ/hình ảnh xâm nhập, không mong muốn, gây lo âu; và/hoặc **cưỡng chế (compulsions)** – hành vi/nghi thức lặp đi lặp lại (rửa tay, kiểm tra, đếm số) nhằm giảm lo âu do ám ảnh gây ra. Cưỡng chế chỉ giảm lo âu **tạm thời** và mang tính **quá mức**, không tương xứng với nguy cơ thực tế.

5.8.4 Post-Traumatic Stress Disorder

Post-traumatic stress disorder (PTSD) can develop following exposure to a traumatic event (combat, sexual or physical assault, serious accident, natural disaster). Its symptom clusters include **intrusive re-experiencing** of the trauma (flashbacks, recurrent nightmares, distressing intrusive memories), **avoidance** of reminders/triggers associated with the trauma, **negative changes in mood and cognition** (persistent negative beliefs about oneself or the world, emotional numbing, diminished interest in activities), and **hyperarousal** (hypervigilance, exaggerated startle response, irritability, sleep disturbance). Symptoms must persist for more than one month and cause significant distress or impairment for a PTSD diagnosis; the DSM-5 classifies PTSD under a distinct **trauma- and stressor-related disorders** category rather than among the anxiety disorders.

Ví dụ mẫu · Identifying a PTSD symptom pattern

Six months after surviving a serious car accident, a man reports recurring nightmares about the crash, avoids driving on the highway where it occurred, feels persistently on edge and startles easily at loud noises, and describes feeling emotionally "numb" and detached from friends he used to enjoy spending time with. Identify the disorder these symptoms best match and name the four symptom clusters represented.

This pattern matches **post-traumatic stress disorder (PTSD)**. The nightmares are **intrusive re-experiencing**; avoiding the highway is **avoidance** of trauma-related reminders; feeling on edge and startling easily is **hyperarousal**; and feeling emotionally numb and detached from previously enjoyed relationships reflects **negative changes in mood/cognition**. The six-month duration and functional impact (avoidance of driving, withdrawal from friends) both exceed the one-month minimum and meet the distress/impairment criterion required for diagnosis.

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Rối loạn stress sau sang chấn (PTSD) phát triển sau khi trải qua một sự kiện sang chấn (chiến tranh, tấn công, tai nạn nghiêm trọng). Bốn nhóm triệu chứng: **tái trải nghiệm xâm nhập** (ác mộng, hồi tưởng), **né tránh** các yếu tố gợi nhớ sang chấn, **thay đổi tiêu cực về khí sắc/nhận thức** (tê liệt cảm xúc, niềm tin tiêu cực), và **tăng cảnh giác/kích động (hyperarousal)** (dễ giật mình, khó ngủ, cáu gắt) – kéo dài trên 1 tháng và gây suy giảm chức năng đáng kể.

5.8.5 Overview: Comparing the Anxiety- and Trauma-Related Disorders

Because these disorders share overlapping symptoms (fear, avoidance, physiological arousal), the specific **pattern and trigger** of the anxiety is usually the key to distinguishing them.

Disorder	Core feature	Distinguishing pattern
GAD	Chronic, excessive worry across many life domains	Diffuse, no single trigger; ≥ 6 months
Panic disorder	Recurrent, unexpected panic attacks	Discrete episodes peaking in minutes, plus fear of future attacks
Specific phobia	Fear of one specific object/situation	Clear, narrow trigger; leads to avoidance of that trigger
Social anxiety disorder	Fear of scrutiny/judgment in social situations	Trigger is social evaluation specifically
OCD	Obsessions and/or compulsions	Ego-dystonic, ritualized; anxiety tied to specific intrusive thoughts
PTSD	Re-experiencing, avoidance, negative mood/cognition change, hyperarousal	Onset follows a specific identifiable traumatic event

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Bảng so sánh nhanh: các rối loạn lo âu và liên quan đến sang chấn đều có **lo âu/sợ hãi và né tránh**, nhưng khác nhau ở **kiểu hình và tác nhân kích hoạt** – GAD lan toả không có tác nhân cụ thể; hoảng loạn là các cơn RỐI RẠC; ám ảnh sợ và lo âu xã hội có tác nhân RÕ RÀNG, hẹp; OCD gắn với ám ảnh/cưỡng chế cụ thể; PTSD luôn có một **sự kiện sang chấn** khởi phát rõ ràng đứng trước các triệu chứng.

5.9 Mood Disorders and Schizophrenia Spectrum Disorders

5.9.1 Major Depressive Disorder

Major depressive disorder (MDD) requires at least a two-week period marked by **depressed mood** and/or **anhedonia** (loss of interest or pleasure in previously enjoyed activities) nearly every day, plus at least several of the following: significant weight or appetite change, sleep disturbance (insomnia or hypersomnia), psychomotor agitation or retardation, fatigue/loss of energy, feelings of worthlessness or excessive/inappropriate guilt, diminished concentration or indecisiveness, and recurrent thoughts of death or suicidal ideation — causing significant distress or impairment in daily functioning. DSM-5 recognizes several clinically useful **specifiers** that describe particular patterns of depressive episodes: episodes that regularly begin and remit with specific seasons (typically worsening in fall/winter, associated with reduced sunlight exposure) are described **with seasonal pattern** (popularly known as **seasonal affective disorder**); episodes with onset during pregnancy or in the weeks following childbirth are described **with peripartum onset** (commonly called **postpartum depression**), which is distinguished from the much more common and milder “baby blues” by its greater severity and duration.

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Rối loạn trầm cảm chủ yếu (major depressive disorder – MDD): khí sắc trầm buồn và/hoặc mất khoái cảm (anhedonia) kéo dài ≥ 2 tuần, kèm ít nhất vài triệu chứng: thay đổi cân nặng/giấc ngủ, mệt mỏi, cảm giác vô giá trị/tội lỗi quá mức, khó tập trung, ý nghĩ về cái chết – gây suy giảm chức năng đáng kể. Hai “đặc điểm chỉ định” (specifiers) thường gặp: **rối loạn cảm xúc theo mùa (seasonal affective disorder)** – các giai đoạn trầm cảm lặp lại theo mùa (thường nặng hơn vào thu/đông, liên quan đến ánh sáng); và **trầm cảm sau sinh (postpartum depression)** – khởi phát trong thai kỳ hoặc sau sinh, nghiêm trọng và kéo dài hơn “baby blues” thông thường.

5.9.2 Bipolar Disorder

Bipolar disorder involves alternating episodes of **mania** (or the milder **hypomania**) and depression. A manic episode features abnormally and persistently elevated, expansive, or irritable mood along with increased energy/activity, inflated self-esteem or grandiosity, decreased need for sleep, rapid/racing speech and thoughts, distractibility, and increased impulsivity or engagement in risky behavior (reckless spending, impulsive decisions) — severe enough to markedly impair functioning or require hospitalization. Depressive episodes in bipolar disorder resemble those of major depressive disorder.

Ví dụ mẫu · Distinguishing MDD from bipolar disorder

A clinician reviews two case histories. Patient X has experienced only extended periods of low mood, anhedonia, fatigue, and hopelessness, with no periods of unusually elevated mood or energy. Patient Y describes cycling between weeks of depression similar to Patient X's, and separate weeks of feeling “unstoppable,” barely needing sleep, talking rapidly, spending money impulsively, and feeling grandiose about unrealistic plans. Which disorder best fits each patient, and what is the key distinguishing feature?

Patient X fits **major depressive disorder**: only depressive episodes are present, with no history of mania/hypomania. Patient Y fits **bipolar disorder**: the presence of at least one manic episode (elevated/irritable mood, decreased need for sleep, grandiosity, impulsive risky behavior) alongside depressive episodes is the defining feature that separates bipolar disorder from major depressive disorder — depression alone, no matter how severe, does not indicate bipolar disorder without a manic or hypomanic episode somewhere in the history.

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Rối loạn lưỡng cực (bipolar disorder): xen kẽ giữa các **giai đoạn hưng cảm (mania/hypomania)** – khí sắc phấn khích/cáu kỉnh bất thường, giảm nhu cầu ngủ, tự cao, hành vi bốc đồng nguy hiểm – và các **giai đoạn trầm cảm**. Điểm phân biệt cốt lõi với MDD: bipolar disorder **PHẢI** có ít nhất một giai đoạn hưng cảm/hưng cảm nhẹ trong tiền sử; nếu chỉ có trầm cảm thì đó là MDD.

5.9.3 Biological and Psychological Explanations of Mood Disorders

Biological explanations of mood disorders point to genetic predisposition (higher concordance rates in identical twins and close relatives than in the general population) and neurotransmitter activity: reduced **serotonin** and **norepinephrine** activity has long been linked to depression (the basis for many antidepressant medications), while dysregulated **dopamine** activity has been implicated in manic episodes and other conditions.

Psychological explanations emphasize patterns of thinking and learning. **Aaron Beck's** cognitive theory of depression proposes a **negative cognitive triad**: pervasive, self-defeating negative beliefs about *the self* ("I am worthless"), *the world/current situation* ("nothing ever goes right"), and *the future* ("things will never improve") – these beliefs distort how ambiguous or even positive events are interpreted, perpetuating and deepening depressive thinking. **Martin Seligman's** concept of **learned helplessness**, originally observed in animals repeatedly exposed to inescapable, uncontrollable aversive events, describes how an organism can learn that its actions do not affect outcomes and become passive – failing to attempt escape or improvement even once escape becomes possible – offered as a model for the passivity, hopelessness, and reduced motivation often seen in depression.

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Giải thích **sinh học** cho rối loạn khí sắc: yếu tố di truyền (tỉ lệ đồng mắc cao hơn ở sinh đôi cùng trứng) và mất cân bằng chất dẫn truyền thần kinh – **serotonin** và **norepinephrine** thấp liên quan đến trầm cảm; **dopamine** rối loạn liên quan đến hưng cảm. Giải thích **tâm lý**: **tam giác nhận thức tiêu cực (negative cognitive triad)** của **Aaron Beck** – niềm tin tiêu cực về bản thân, tình huống hiện tại, và tương lai; **sự bất lực học được (learned helplessness)** của **Martin Seligman** – khi liên tục gặp sự kiện tiêu cực không thể kiểm soát, cá thể học được rằng hành động của mình vô nghĩa và trở nên thụ động, ngay cả khi sau đó có cơ hội thoát khỏi tình huống.

5.9.4 Recognizing Suicide Risk

Because severe mood disorders (particularly major depressive disorder and bipolar disorder) are associated with elevated risk of suicidal thinking and behavior, clinicians, educators, and the public are trained to recognize **warning signs**, which can include: expressed feelings of hopelessness or of being a burden to others, withdrawal from relationships and previously valued activities, giving away possessions or making final arrangements, marked changes in sleep or mood, increased substance use, and direct or indirect statements about wanting to die or not wanting to continue living. **Protective factors** – strong social support, access to mental health care, a sense of purpose or connectedness, and restricted access to lethal means during a crisis – meaningfully reduce risk. Best practice treats an active warning sign as something to address through direct, compassionate conversation rather than avoidance, connecting the person promptly with professional or crisis support.

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Vì các rối loạn khí sắc nặng (trầm cảm chủ yếu, rối loạn lưỡng cực) có liên quan đến nguy cơ tự sát cao hơn, việc nhận biết **dấu hiệu cảnh báo** (cảm giác vô vọng, cảm thấy mình là gánh nặng, thu mình khỏi quan hệ xã hội, cho đi tài sản, thay đổi rõ rệt về giấc ngủ/khí sắc, nói về ý muốn chết) rất quan trọng. **Yếu tố bảo vệ** (hỗ trợ xã hội mạnh, được tiếp cận dịch vụ sức khỏe

tâm thần, cảm giác có mục đích sống, hạn chế tiếp cận phương tiện gây hại) giúp giảm nguy cơ đáng kể. Khi có dấu hiệu cảnh báo, nên trò chuyện trực tiếp, đồng cảm và kết nối người đó với hỗ trợ chuyên môn/khẩn cấp ngay, không nên né tránh chủ đề.

5.9.5 Schizophrenia Spectrum Disorders

Schizophrenia is a chronic, heterogeneous disorder typically emerging in late adolescence or early adulthood, with course and severity varying widely between individuals. Symptoms are classified into two broad categories.

Positive vs. negative symptoms

Positive symptoms are additional experiences/behaviors *present* that are not typical of most people: **hallucinations** (sensory perceptions occurring without an external stimulus – most often auditory, such as hearing voices), **delusions** (fixed false beliefs not shared by one's culture, e.g., delusions of persecution or of grandeur), **disorganized speech** (loose associations, incoherence), and disorganized or catatonic behavior. **Negative symptoms** are the *absence or deficit* of normal functioning: **flat affect** (greatly reduced emotional expression), **avolition** (lack of motivation or initiative for goal-directed activity), reduced speech (alogia), social withdrawal, and anhedonia.

The **dopamine hypothesis** proposes that excess dopamine activity in certain brain pathways is associated with the positive symptoms of schizophrenia. Indirect support comes from two directions: **antipsychotic** medications, which block dopamine receptors, reduce positive symptoms in many patients, while drugs that increase dopamine activity (e.g., amphetamines) can induce psychosis-like symptoms in otherwise healthy individuals. Schizophrenia's course and presentation are notably heterogeneous – some individuals experience a single episode with substantial recovery, while others experience a chronic course; early, sustained treatment is associated with better long-term functioning.

Ví dụ mẫu · Sorting positive and negative symptoms

A clinician's notes describe a patient who reports hearing voices commenting on his actions (hallucinations), believes he is being monitored by a hostile organization (delusions), but also shows a nearly expressionless face regardless of context (flat affect), rarely initiates any activity even basic self-care (avolition), and has withdrawn from almost all social contact. Sort these symptoms into positive and negative categories and explain the distinction.

Positive symptoms (added, atypical experiences): hearing voices (hallucinations) and the belief he is being monitored (delusions). **Negative symptoms** (absence of typical functioning): flat affect, avolition, and social withdrawal. The positive/negative distinction is not about "good" versus "bad" – both categories reflect serious impairment – but about whether the symptom represents something *added* to normal experience (positive) or something *missing* from normal functioning (negative).

(!) Lỗi thường gặp: Một trong những hiểu lầm phổ biến nhất: **tâm thần phân liệt (schizophrenia)** KHÔNG phải là "nhân cách phân liệt/nhiều nhân cách" (không phải *split personality*). Nhầm lẫn đó thực ra mô tả **rối loạn nhận dạng phân ly (dissociative identity disorder – DID)** – một rối loạn hoàn toàn khác. Tâm thần phân liệt liên quan đến sự "chia cắt/mất kết nối" giữa suy nghĩ, cảm xúc và thực tế (loạn thần), KHÔNG liên quan đến việc có nhiều "danh tính" hay "nhân cách" khác nhau trong một cơ thể.

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Tâm thần phân liệt (schizophrenia): triệu chứng dương tính (positive symptoms) – những trải nghiệm THÊM VÀO bất thường: ảo giác (hallucinations), hoang tưởng (delusions), ngôn ngữ/hành vi vô tổ chức; triệu chứng âm tính (negative symptoms) – sự THIẾU HỤT chức năng bình thường: cảm xúc phẳng lặng (flat affect), mất động lực (avolition), thu mình xã hội. **Giả thuyết dopamine:** dư thừa hoạt động dopamine ở một số vùng não liên quan đến triệu chứng dương tính (thuốc chống loạn thần chặn thụ thể dopamine làm giảm triệu chứng này).

Disorder	Core feature	Typical onset	Key biological factor
Major depressive disorder	Depressed mood/anhedonia, no manic history	Can occur at any age	Reduced serotonin/norepinephrine activity
Bipolar disorder	Alternating manic and depressive episodes	Often late adolescence/early adulthood	Dopamine dysregulation implicated in mania
Schizophrenia	Positive symptoms (hallucinations, delusions) and/or negative symptoms (flat affect, avolition)	Late adolescence/early adulthood	Excess dopamine activity implicated (positive symptoms)

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Bảng so sánh nhanh ba rối loạn dễ nhầm lẫn: **MDD** chỉ có giai đoạn trầm cảm (không có tiền sử hưng cảm); **rối loạn lưỡng cực** có CẢ giai đoạn hưng cảm VÀ trầm cảm; **tâm thần phân liệt** đặc trưng bởi triệu chứng dương tính/âm tính liên quan đến loạn thần, KHÔNG phải là một dạng rối loạn khí sắc.

Pulling together the neurotransmitter-related content from across this unit, several key chemical messengers recur as biological explanations for different disorders and as the specific targets of corresponding medications.

Neurotransmitter	Associated with (when dysregulated)	Targeted by
Serotonin	Reduced activity linked to depression and many anxiety disorders	SSRIs (block reuptake, increasing availability)
Norepinephrine	Reduced activity linked to depression; involved in arousal/alertness	Some antidepressant classes (e.g., SNRIs)
Dopamine	Excess activity in certain pathways linked to positive symptoms of schizophrenia and mania; also targeted therapeutically in ADHD	Antipsychotics (block receptors); stimulant medications (increase activity in attention circuits)
GABA	Insufficient inhibitory activity linked to heightened anxiety/arousal	Benzodiazepines (enhance GABA activity)

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Tổng hợp các chất dẫn truyền thần kinh liên quan đến rối loạn tâm lý trong chương này: **serotonin** thấp liên quan trầm cảm/lo âu (SSRI tăng serotonin); **norepinephrine** thấp liên quan trầm cảm; **dopamine** dư thừa liên quan triệu chứng dương tính của tâm thần phân liệt và hưng cảm (thuốc chống loạn thần chặn dopamine), còn dopamine cũng là đích điều trị của thuốc kích thích trong ADHD; **GABA** (chất ức chế) hoạt động kém liên quan đến lo âu tăng cao (benzodiazepine tăng hoạt động GABA).

5.10 Other Disorder Categories

5.10.1 Dissociative Disorders

Dissociative disorders involve a disruption in the normally integrated functioning of consciousness, memory, identity, or perception. **Dissociative identity disorder (DID)** — historically termed “multiple personality disorder” — is characterized by the presence of two or more distinct personality states/identities within one individual, along with gaps in memory for everyday events, personal information, or traumatic events that go beyond ordinary forgetting. DID remains a scientifically and clinically **controversial** diagnosis: researchers debate its true prevalence, whether it arises primarily from severe early trauma (the trauma model) or can be inadvertently shaped by suggestive therapeutic or social influences (the sociocognitive model), and clinicians continue to disagree about diagnostic criteria and treatment approaches. Two other, less controversial dissociative disorders round out this DSM-5 category: **dissociative amnesia** (an inability to recall important personal information, usually following a stressful or traumatic event, that is too extensive to be explained by ordinary forgetting) and **depersonalization/derealization disorder** (persistent or recurrent experiences of feeling detached from one’s own thoughts, body, or actions as if observing oneself from outside — depersonalization — or of feeling that one’s surroundings are unreal, dreamlike, or distorted — derealization — while reality testing otherwise remains intact).

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Rối loạn phân ly (dissociative disorders): gián đoạn trong sự tích hợp bình thường của ý thức, trí nhớ, danh tính, hoặc tri giác. **Rối loạn nhận dạng phân ly (DID)** – trước đây gọi là “rối loạn đa nhân cách” – có từ hai danh tính/trạng thái nhân cách khác biệt trở lên, kèm các khoảng trống trí nhớ vượt quá mức quên thông thường. Đây vẫn là một chẩn đoán **gây tranh cãi** trong khoa học – về tỉ lệ mắc thực tế và nguồn gốc (do sang chấn nặng hay do ảnh hưởng gợi ý từ trị liệu/xã hội). Hai rối loạn phân ly khác ít gây tranh cãi hơn: **quên phân ly (dissociative amnesia)** – không nhớ được thông tin cá nhân quan trọng sau sang chấn, vượt quá mức quên bình thường; và **rối loạn giải thể nhân cách/tri giác sai thực tại (depersonalization/derealization disorder)** – cảm giác tách rời khỏi chính suy nghĩ/cơ thể mình (depersonalization) hoặc cảm giác môi trường xung quanh không thực, như trong mơ (derealization), trong khi khả năng nhận thức thực tế vẫn còn nguyên vẹn.

5.10.2 Personality Disorders

Personality disorders are enduring, inflexible, and pervasive patterns of inner experience and behavior that deviate markedly from cultural expectations, remain stable across time and situations (typically traceable to adolescence or early adulthood), and cause significant distress or impairment. **Antisocial personality disorder** involves a pervasive disregard for and violation of the rights of others, deceitfulness, impulsivity, irritability/aggressiveness, and a lack of remorse for harm caused — sometimes, though not always, associated with criminal behavior. **Borderline personality disorder** involves pervasive instability in interpersonal relationships, self-image, and emotional regulation, along with marked impulsivity, an intense fear of abandonment, and sometimes recurrent self-harming behavior. DSM-5 groups all ten personality disorders into three broader **clusters**: **Cluster A** (“odd/eccentric” — e.g., paranoid, schizoid), **Cluster B** (“dramatic/erratic” — e.g., antisocial, borderline, narcissistic, histrionic), and **Cluster C** (“anxious/fearful” — e.g., avoidant, dependent, obsessive-compulsive personality disorder, which despite the similar name is a personality pattern of rigid perfectionism and control rather than the intrusive obsessions/compulsions of OCD).

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Rối loạn nhân cách (personality disorders): khuôn mẫu suy nghĩ/hành vi **bền vững, cứng nhắc, lan tỏa, lệch chuẩn văn hoá, ổn định** theo thời gian, gây suy giảm chức năng. **Rối loạn nhân cách chống đối xã hội (antisocial personality disorder):** coi thường/vi phạm quyền của người

khác, lừa dối, bốc đồng, thiếu hối hận. **Rối loạn nhân cách ranh giới (borderline personality disorder)**: bất ổn trong quan hệ, hình ảnh bản thân, và cảm xúc; bốc đồng; sợ bị bỏ rơi mãnh liệt.

5.10.3 Eating Disorders

Anorexia nervosa involves restriction of energy intake leading to a significantly low body weight (relative to age, sex, and developmental trajectory), an intense fear of gaining weight or becoming fat, and a disturbed perception of one's own body weight or shape (seeing oneself as overweight despite being underweight). **Bulimia nervosa** involves recurrent episodes of **binge eating** (consuming an unusually large amount of food within a discrete period, accompanied by a sense of loss of control) followed by **compensatory behaviors** intended to prevent weight gain – self-induced vomiting, misuse of laxatives, fasting, or excessive exercise; body weight is often within or near the normal range, which can make bulimia harder to detect than anorexia. **Binge-eating disorder** involves recurrent binge-eating episodes, as above, but *without* the regular compensatory behaviors seen in bulimia, typically accompanied by marked distress, guilt, or shame about the episodes. Consistent with the biopsychosocial model, eating disorders arise from a mix of **biological** factors (genetic vulnerability; disruptions in hunger/satiety signaling of the kind discussed earlier in this unit), **psychological** factors (perfectionism, difficulty tolerating negative emotion, low self-esteem), and **sociocultural** factors (thin-ideal media exposure and cultural body-image pressures, weight-related teasing or stigma) – no single factor is sufficient on its own to explain why a given individual develops an eating disorder.

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Chán ăn tâm thần (anorexia nervosa): hạn chế ăn uống dẫn đến cân nặng thấp đáng kể, sợ tăng cân mãnh liệt, nhận thức sai lệch về hình dáng cơ thể. **Cuồng ăn tâm thần (bulimia nervosa)**: các cơn **ăn vô độ (binge eating)** lặp lại kèm **hành vi bù trừ** (nôn, dùng thuốc nhuận tràng, nhịn ăn, tập luyện quá mức) – cân nặng thường ở mức bình thường, khó phát hiện hơn chán ăn. **Rối loạn ăn vô độ (binge-eating disorder)**: ăn vô độ lặp lại nhưng KHÔNG có hành vi bù trừ đều đặn. Theo mô hình sinh học-tâm lý-xã hội, rối loạn ăn uống là kết quả của yếu tố **sinh học** (di truyền, rối loạn tín hiệu đói/no), **tâm lý** (cầu toàn, khó chịu đựng cảm xúc tiêu cực, tự tôn thấp), và **xã hội-văn hoá** (áp lực hình mẫu gầy trên truyền thông, bị chê bai về cân nặng) – không một yếu tố đơn lẻ nào là đủ để giải thích.

5.10.4 Neurodevelopmental Disorders

Attention-deficit/hyperactivity disorder (ADHD) involves a persistent pattern of **inattention** (difficulty sustaining focus, disorganization, distractibility, forgetfulness) and/or **hyperactivity-impulsivity** (fidgeting, difficulty remaining seated, excessive talking, acting without forethought) that is inconsistent with the person's developmental level, interferes with functioning across multiple settings (school/work and home), and has symptoms present before age 12. **Stimulant medications** (such as methylphenidate) are among the most common treatments for ADHD; somewhat counterintuitively, they improve attentional control and reduce hyperactivity/impulsivity by increasing dopamine and norepinephrine activity in brain circuits responsible for sustained attention and self-regulation. **Autism spectrum disorder (ASD)** is characterized by persistent deficits in social communication and social interaction across multiple contexts, together with restricted, repetitive patterns of behavior, interests, or activities (insistence on routines/sameness, intensely focused interests, unusual sensory sensitivities). ASD is described as a **spectrum** because presentation and severity vary widely across individuals – current diagnostic practice (since DSM-5) folds presentations previously split into separate diagnoses (such as Asperger's syndrome) into this single spectrum category, reflecting the understanding that autism represents a broad range of functioning rather than a few fixed subtypes.

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Rối loạn tăng động giảm chú ý (ADHD): giảm chú ý (khó tập trung, mất tổ chức) và/hoặc **tăng động-bốc đồng** (không thể ngồi yên, nói quá nhiều, hành động không suy nghĩ), xuất hiện trước 12 tuổi, ảnh hưởng nhiều bối cảnh sống. **Rối loạn phổ tự kỷ (autism spectrum disorder - ASD):** khiếm khuyết dai dẳng trong giao tiếp/tương tác xã hội, kèm hành vi/sở thích lặp lại, hạn hẹp. Gọi là "phổ" (spectrum) vì mức độ biểu hiện rất đa dạng giữa các cá nhân, không chia thành vài nhóm cố định.

DSM-5 category	Example disorder(s)	Key features
Anxiety disorders	GAD, panic disorder, specific phobia, social anxiety disorder	Excessive fear/worry (chronic or in discrete attacks) disproportionate to actual danger; avoidance behavior
Obsessive-compulsive and related	OCD	Intrusive obsessions and/or compulsions performed to reduce anxiety; ego-dystonic (distressing, unwanted)
Trauma- and stressor-related	PTSD	Intrusive re-experiencing, avoidance, negative mood/cognition changes, hyperarousal following trauma
Depressive disorders	Major depressive disorder	Depressed mood and/or anhedonia ≥ 2 weeks plus associated symptoms
Bipolar and related disorders	Bipolar disorder	Alternating manic/hypomanic and depressive episodes
Schizophrenia spectrum	Schizophrenia	Positive symptoms (hallucinations, delusions) and/or negative symptoms (flat affect, avolition)
Dissociative disorders	Dissociative identity disorder (DID)	Two or more distinct identity states; memory gaps beyond normal forgetting; scientifically debated
Personality disorders	Antisocial, borderline	Enduring, inflexible, pervasive maladaptive patterns stable since adolescence/early adulthood
Feeding and eating disorders	Anorexia nervosa, bulimia nervosa, binge-eating disorder	Disturbed eating behavior and/or body-image perception; may or may not involve compensatory behaviors
Neurodevelopmental disorders	ADHD, autism spectrum disorder (ASD)	Onset in childhood; persistent attention/activity or social-communication differences across settings

Ví dụ mẫu · Identifying a diagnostic pattern from a symptom vignette

A 24-year-old reports, for the past three months, recurrent intrusive thoughts that she left the stove on and will cause a fire, even when she has checked it. To reduce her anxiety, she checks the stove repeatedly — sometimes more than 20 times before leaving home — and is fully aware the behavior is excessive but feels unable to stop. She denies any episodes of elevated mood, hallucinations, or a specific traumatic event. Identify the most likely DSM-5 diagnosis and explain your reasoning by ruling out at least one alternative.

The pattern — intrusive, unwanted thoughts (obsessions) about causing harm, paired with repetitive checking behavior performed specifically to reduce the anxiety those thoughts cause (compulsions), with full awareness that the behavior is excessive (ego-dystonic) — matches **obsessive-compulsive disorder (OCD)**. This is not **generalized anxiety disorder**, because the anxiety here is tightly organized around specific obsessions and compulsions rather than being diffuse worry about many life domains; it is not **PTSD**, because there is no identified traumatic event; and it is not consistent with **schizophrenia**, since there are no hallucinations, delusions,

or disorganized thinking — she recognizes her checking behavior as excessive rather than believing it is a rational response to a real threat.

5.11 Psychotherapy: Psychological Approaches to Treatment

Psychotherapy refers to a family of treatments in which a trained clinician uses psychological techniques — rather than medication or other biomedical intervention — to help a client reduce distress and improve functioning. Different psychotherapy traditions rest on different assumptions about the root causes of psychological difficulty, and correspondingly use different core techniques.

Historically, people with severe psychological disorders were often confined in harsh, custodial asylums with little regard for humane care. Reform efforts beginning in the late eighteenth and nineteenth centuries — associated with figures such as **Philippe Pinel** in France, who advocated removing physical restraints and treating patients with greater dignity, and **Dorothea Dix** in the United States, who campaigned for humane, publicly funded psychiatric hospitals in place of prisons and almshouses — introduced the **moral treatment** movement, an early precursor to the idea that structured, humane, psychologically informed care could improve outcomes. Modern psychotherapy, grounded in scientific research rather than moral or custodial philosophy alone, developed over the following century into the evidence-based approaches described below.

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Trước đây, người mắc rối loạn tâm lý nặng thường bị giam giữ trong các trại tâm thần khắc nghiệt, thiếu nhân đạo. Phong trào **điều trị nhân đạo (moral treatment)** vào cuối thế kỷ 18–19, gắn với **Philippe Pinel** (Pháp – chủ trương bỏ xiềng xích, đối xử tôn trọng với bệnh nhân) và **Dorothea Dix** (Hoa Kỳ – vận động xây bệnh viện tâm thần công lập nhân đạo thay cho nhà tù), là bước đệm cho ý tưởng rằng chăm sóc có cấu trúc, nhân văn có thể cải thiện kết quả điều trị – tiền đề cho tâm lý trị liệu hiện đại dựa trên nghiên cứu khoa học.

5.11.1 Psychoanalysis and Psychodynamic Therapy

Rooted in Freud's psychodynamic perspective (introduced in the biological bases unit), **psychoanalysis** aims to bring **unconscious conflicts** — often rooted in early childhood experiences — into conscious awareness so they can be understood and resolved, thereby relieving the symptoms they produce. Classic techniques include **free association** (the client says whatever comes to mind, without censorship, allowing unconscious material to surface indirectly) and **dream analysis** (interpreting the symbolic, "latent" content believed to underlie a dream's more literal "manifest" content). The therapist also attends to **resistance** (the client's unconscious reluctance to discuss certain topics) and **transference** (the client unconsciously redirecting feelings about important figures from their past — often a parent — onto the therapist), treating both as clinically meaningful. Modern **psychodynamic therapy** is generally briefer and less intensive than classical psychoanalysis but retains its core focus on gaining insight into unconscious patterns and their roots in relational history.

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Phân tâm học (psychoanalysis), dựa trên lý thuyết của Freud, nhằm đưa các **xung đột vô thức** (thường bắt nguồn từ thời thơ ấu) vào nhận thức để giải quyết. Kỹ thuật cốt lõi: **liên tưởng tự do (free association)** và **phân tích giấc mơ (dream analysis)**. Nhà trị liệu cũng chú ý đến **sự phòng vệ/né tránh (resistance)** và **chuyển di (transference)** – khi khách hàng vô thức chuyển cảm xúc dành cho người quan trọng trong quá khứ (thường là cha/mẹ) sang nhà trị liệu. **Liệu pháp tâm động học (psychodynamic therapy)** hiện đại thường ngắn hơn, ít chuyên sâu hơn phân tâm học cổ điển nhưng vẫn giữ trọng tâm về **tự nhận thức (insight)** đối với các khuôn mẫu vô thức.

5.11.2 Humanistic / Client-Centered Therapy

Carl Rogers's client-centered (person-centered) therapy assumes that people possess an inherent drive toward growth and self-actualization, and that psychological difficulty arises when this natural growth is blocked — often by a lack of acceptance from important others. The therapist's central task is to provide a supportive relational climate featuring **unconditional positive regard** (accepting and valuing the client as a person, without judgment, regardless of what they say or do), **genuineness/-congruence** (the therapist being authentic rather than adopting a professional facade), and **empathy**, expressed partly through **active listening** techniques such as paraphrasing and reflecting the client's feelings back to them. The therapist is deliberately **non-directive** — the client, not the therapist, leads the direction of each session and generates their own insights and solutions.

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Liệu pháp nhân văn/lấy khách hàng làm trung tâm (client-centered therapy) của Carl Rogers tin rằng con người có khuynh hướng bẩm sinh hướng đến sự phát triển và tự hiện thực hoá. Nhà trị liệu tạo môi trường hỗ trợ với ba yếu tố: **sự chấp nhận vô điều kiện (unconditional positive regard)**, **sự chân thật (genuineness)**, và **sự đồng cảm (empathy)** – thể hiện qua kỹ thuật **lắng nghe tích cực (active listening)** (diễn đạt lại, phản hồi cảm xúc). Nhà trị liệu đóng vai trò **không chỉ đạo (non-directive)** – khách hàng tự dẫn dắt buổi trị liệu.

5.11.3 Behavior Therapies

Behavior therapies apply principles of learning (classical and operant conditioning, covered in the development and learning unit) directly to change maladaptive behavior, generally without emphasis on gaining insight into underlying unconscious causes.

Classical-conditioning-based techniques: Systematic desensitization (developed by **Joseph Wolpe**) treats phobias by gradually exposing the client to a hierarchy of increasingly anxiety-provoking versions of the feared stimulus while the client practices deep relaxation, so that relaxation — rather than fear — becomes newly associated with the stimulus (a counter-conditioning process). **Exposure therapy** more broadly involves repeated or prolonged exposure to a feared stimulus/situation until the anxiety response diminishes, which can be done gradually (graduated exposure) or all at once (flooding); modern practice increasingly uses **virtual reality exposure therapy**, which simulates feared situations (flying, heights, public speaking) in a controlled, repeatable digital environment before or instead of real-world exposure. **Aversive conditioning** pairs an unwanted behavior with an unpleasant stimulus to reduce the future occurrence of that behavior (e.g., historically used for some substance-use behaviors).

Operant-conditioning-based techniques: Token economies reinforce desired behaviors with tokens — secondary reinforcers with no inherent value — that can later be exchanged for privileges or other rewards (primary or otherwise); commonly used in institutional, inpatient, or classroom settings to systematically shape behavior.

Ví dụ mẫu · Matching a behavioral technique to a phobia

A client has an intense, debilitating fear of flying that prevents her from taking a long-planned trip. Her therapist first teaches her progressive muscle relaxation, then has her imagine (and later approach) a graded series of flying-related situations — starting with looking at pictures of airplanes, then visiting an airport, then sitting in a stationary plane, and eventually taking a short flight — practicing relaxation at each step before moving to the next. Name this technique, identify its conditioning basis, and explain the mechanism by which it is expected to work.

This is **systematic desensitization**, a behavior therapy technique grounded in **classical conditioning** (developed by Joseph Wolpe). It works through **counter-conditioning**: by pairing a

relaxation response with a graded hierarchy of increasingly close approximations to the feared stimulus (flying), the client's learned association between "flying-related cues" and fear is gradually replaced with an association between those same cues and relaxation, so the conditioned fear response is weakened at each step before the next, more difficult step is attempted.

(!) Lỗi thường gặp: Đừng nhầm lẫn các kỹ thuật hành vi dựa trên **điều kiện hoá cổ điển** (giải mã cảm hệ thống – systematic desensitization, liệu pháp phơi nhiễm – exposure therapy, điều kiện hoá ghê sợ – aversive conditioning: đều liên quan đến việc thay đổi một **phản ứng cảm xúc/phản xạ** gắn với một kích thích) với kỹ thuật dựa trên **điều kiện hoá tạo tác** (kinh tế token – token economy: liên quan đến việc dùng **hậu quả/củng cố** để thay đổi một **hành vi tự nguyện**). Khi đề bài mô tả việc "giảm sợ một kích thích cụ thể", nghĩ đến cổ điển; khi đề bài mô tả việc "dùng phần thưởng/token để khuyến khích một hành vi", nghĩ đến tạo tác.

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Liệu pháp hành vi (behavior therapy) áp dụng nguyên lý học tập để thay đổi hành vi, không tập trung vào "tự nhận thức" như phân tâm học. Dựa trên **điều kiện hoá cổ điển**: **giải mã cảm hệ thống (systematic desensitization)** của Joseph Wolpe (tiếp xúc dần với kích thích gây sợ kết hợp thư giãn để "phản điều kiện hoá"), **liệu pháp phơi nhiễm (exposure therapy)**, **điều kiện hoá ghê sợ (aversive conditioning)**. Dựa trên **điều kiện hoá tạo tác**: **kinh tế token (token economy)** – dùng token (củng cố thứ cấp) đổi được đặc quyền để khuyến khích hành vi mong muốn.

5.11.4 Cognitive Therapies and Cognitive-Behavioral Therapy

Cognitive therapies focus on identifying and changing the maladaptive or distorted thought patterns believed to underlie emotional distress. **Aaron Beck's cognitive therapy** helps clients identify automatic negative thoughts and common **cognitive distortions** (all-or-nothing thinking, overgeneralization, catastrophizing), test these thoughts against actual evidence, and replace them with more balanced, realistic alternatives – widely used for depression.

Common cognitive distortion	Description
All-or-nothing thinking	Viewing a situation in only two extreme categories (total success or total failure), with no middle ground
Overgeneralization	Drawing a broad, sweeping negative conclusion from a single event ("I failed one quiz, so I'll fail the whole course")
Catastrophizing	Assuming the worst possible outcome will occur, and that it would be unbearable if it did
Mind reading	Assuming, without evidence, that one knows what others are thinking (usually something negative about oneself)
Personalization	Blaming oneself for events that are not entirely, or not at all, within one's control

Albert Ellis's rational-emotive behavior therapy (REBT) identifies and vigorously **disputes irrational beliefs** (e.g., "I must be perfect," "everyone must approve of me") that Ellis argued lead directly to self-defeating emotions and behavior, using the **ABC(DE) model**: an **A**ctivating event triggers a **B**elief, which produces a **C**onsequence (emotional/behavioral); the therapist helps the client **D**ispute the irrational belief to produce a healthier **E**ffect.

Cognitive-behavioral therapy (CBT) integrates cognitive techniques (identifying and challenging distorted thoughts) with behavioral techniques (graded exposure, behavioral activation, skills prac-

tice). CBT is among the most extensively researched and empirically supported psychotherapy approaches, with demonstrated effectiveness across a broad range of disorders, including depression, anxiety disorders, OCD, PTSD, and eating disorders.

Ví dụ mẫu · Applying the ABC model of REBT

A client believes, "If my presentation isn't flawless, everyone will think I'm incompetent, and that would be unbearable," and experiences intense anxiety and avoidance before any public speaking. Using Ellis's ABC model, identify the activating event, the irrational belief, and the consequence, and describe how a REBT therapist would intervene.

A (activating event): an upcoming presentation. **B (belief):** the irrational, absolutist belief that the presentation must be flawless or else others will judge him as incompetent, and that such judgment would be "unbearable." **C (consequence):** intense anxiety and avoidance of public speaking. A REBT therapist would actively and directly **dispute (D)** this belief – challenging its all-or-nothing logic and catastrophic framing ("Would one imperfect presentation truly be unbearable, or just uncomfortable? Does one mistake really prove incompetence?") – aiming to help the client replace it with a more flexible, rational belief, producing a healthier emotional and behavioral **effect (E)**, such as manageable nervousness rather than avoidance.

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Liệu pháp nhận thức (cognitive therapy) của **Aaron Beck**: nhận diện và thay đổi các suy nghĩ tự động tiêu cực/méo mó nhận thức – ví dụ **tư duy tất-cả-hoặc-không-có** (chỉ thấy thành công hoặc thất bại tuyệt đối), **khái quát hoá quá mức** (từ một sự kiện đơn lẻ suy ra kết luận tiêu cực bao quát), **thảm hoạ hoá** (luôn giả định điều tệ nhất sẽ xảy ra), **đọc suy nghĩ người khác** (cho rằng biết người khác nghĩ gì về mình mà không có bằng chứng), và **cá nhân hoá** (tự đổ lỗi cho những việc không hoàn toàn do mình gây ra). **Liệu pháp hành vi-cảm xúc hợp lý (REBT)** của **Albert Ellis**: dùng mô hình **ABC(DE)** – sự kiện kích hoạt (A), niềm tin (B), hậu quả (C) – để **tranh luận/phản bác (D)** niềm tin phi lý, tạo ra hiệu quả (E) tích cực hơn. **Liệu pháp nhận thức-hành vi (CBT)** kết hợp kỹ thuật nhận thức và hành vi, là phương pháp trị liệu được nghiên cứu và chứng minh hiệu quả rộng rãi nhất hiện nay, áp dụng cho nhiều loại rối loạn.

5.11.5 Group and Family Therapy

Group therapy treats multiple clients simultaneously, typically led by one or more therapists; beyond being more cost-effective than individual therapy, it offers social support, an opportunity to learn from others facing similar struggles, and real-time feedback on interpersonal behavior from peers. **Family therapy** treats the family as an interconnected system, viewing an individual member's difficulties partly as a product of dysfunctional family patterns, roles, or communication styles, and aims to improve the functioning and relationships of the family unit as a whole rather than focusing exclusively on one "identified" member.

Interestingly, research comparing outcomes *across* different psychotherapy orientations has repeatedly found that so-called **common factors** – most notably the strength of the **therapeutic alliance** (the quality of trust and collaboration between client and therapist), along with a client's expectation of improvement and the structured hope a clear treatment plan provides – predict a substantial share of treatment success *regardless* of which specific technique or school of therapy is used. This does not mean technique is irrelevant (certain techniques are demonstrably better matched to certain disorders, as summarized in this unit), but it does mean that the relationship itself is a meaningful, evidence-based part of what makes psychotherapy work.

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Liệu pháp nhóm (group therapy): nhiều khách hàng cùng tham gia trị liệu, tận dụng hỗ trợ

xã hội và học hỏi từ người khác, tiết kiệm chi phí hơn trị liệu cá nhân. **Liệu pháp gia đình (family therapy):** xem gia đình như một hệ thống, coi vấn đề của một cá nhân một phần là sản phẩm của các khuôn mẫu giao tiếp/quan hệ rối loạn trong gia đình, nhằm cải thiện chức năng của cả hệ thống gia đình. Nghiên cứu so sánh nhiều trường phái trị liệu cho thấy **các yếu tố chung (common factors)** – đặc biệt là **liên minh trị liệu (therapeutic alliance)**, tức chất lượng tin tưởng/hợp tác giữa khách hàng và nhà trị liệu – dự đoán một phần lớn thành công điều trị, BẤT KỂ trường phái nào được sử dụng.

5.12 Biomedical Therapies and Evaluating Treatment

5.12.1 Psychopharmacology

Psychopharmacology – the use of medication to treat psychological disorders – targets neurotransmitter systems implicated in a given disorder.

Drug class	Example(s)	Mechanism / target	Primary use
Antipsychotics	Older ("typical") and newer ("atypical") agents	Block dopamine receptors (atypicals also act on serotonin); reduce excess dopamine activity	Schizophrenia (mainly positive symptoms)
SSRIs (antidepressants)	Fluoxetine and related agents	Block reuptake of serotonin, increasing its availability at the synapse	Depression; many anxiety disorders (first-line, favorable side-effect profile)
Anti-anxiety medications	Benzodiazepines	Enhance activity of GABA, the brain's main inhibitory neurotransmitter, reducing arousal	Short-term relief of acute anxiety (risk of tolerance/dependence)
Mood stabilizers	Lithium	Stabilizes mood; mechanism not fully understood; requires blood-level monitoring (narrow therapeutic window)	Bipolar disorder (reduces both manic and depressive episodes)

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Thuốc chống loạn thần (antipsychotics): chặn thụ thể dopamine, giảm triệu chứng dương tính của tâm thần phân liệt. **Thuốc chống trầm cảm SSRI:** chặn tái hấp thu serotonin, tăng lượng serotonin ở khe synapse – điều trị hàng đầu cho trầm cảm và nhiều rối loạn lo âu vì ít tác dụng phụ hơn các thuốc cũ. **Thuốc chống lo âu (benzodiazepine):** tăng hoạt động GABA (chất dẫn truyền ức chế chính), giảm hưng phấn nhanh nhưng có nguy cơ **lệ thuộc thuốc**, nên chỉ dùng ngắn hạn. **Thuốc ổn định khí sắc (lithium):** điều trị rối loạn lưỡng cực, cần theo dõi nồng độ máu chặt chẽ vì khoảng an toàn hẹp (dễ gây độc).

Ví dụ mẫu · Matching medication class to disorder

A physician is choosing among an SSRI, an antipsychotic, a benzodiazepine, and lithium for four different patients: (1) a patient with bipolar disorder needing long-term mood stabilization; (2) a patient with schizophrenia experiencing prominent hallucinations and delusions; (3) a patient with persistent major depressive disorder; (4) a patient needing brief relief from acute panic before a single stressful medical procedure. Match each patient to the most appropriate drug class and justify each choice.

(1) **Lithium** – a mood stabilizer specifically indicated for long-term management of bipolar disorder's manic and depressive episodes. (2) An **antipsychotic** – blocks dopamine receptors to

target the positive symptoms (hallucinations, delusions) associated with excess dopamine activity. (3) An **SSRI** — first-line pharmacological treatment for major depressive disorder, working by increasing available serotonin. (4) A **benzodiazepine** — fast-acting anti-anxiety medication appropriate for short-term, acute use, avoiding the dependence risk that makes it a poor choice for long-term treatment.

(!) Lỗi thường gặp: Không nên nhầm lẫn tốc độ tác dụng và mục đích sử dụng giữa **SSRI** và **benzodiazepine**. SSRI thường cần **vài tuần** mới đạt hiệu quả đầy đủ nhưng **an toàn hơn** khi dùng lâu dài (điều trị nền cho trầm cảm/lo âu mạn tính). Benzodiazepine có tác dụng **gần như ngay lập tức** nhưng mang nguy cơ **lệ thuộc/dung nạp thuốc (tolerance)** cao, nên chỉ phù hợp để giảm lo âu cấp tính trong thời gian ngắn, không phải giải pháp điều trị lo âu mạn tính lâu dài.

5.12.2 Electroconvulsive Therapy and Psychosurgery

Electroconvulsive therapy (ECT) involves briefly passing electrical current through the brain, under general anesthesia and with muscle relaxants, to induce a controlled seizure. It is used primarily for severe, **treatment-resistant depression** — cases where medication and psychotherapy have not produced adequate improvement — or when a rapid response is clinically necessary (e.g., high suicide risk). Modern ECT, performed with anesthesia, muscle relaxants, and careful monitoring, is far safer and more controlled than its historical, heavily stigmatized portrayal; the most common side effect is short-term memory loss and confusion, which typically resolves over time.

Psychosurgery refers to surgical procedures on brain tissue intended to treat psychological disorders. The **lobotomy** — severing connections to and from the prefrontal cortex, associated with the 1949 Nobel Prize awarded to António Egas Moniz — was performed on a large scale in the mid-twentieth century but frequently produced severe, often irreversible side effects (personality change, emotional blunting, cognitive impairment). Lobotomies are now considered obsolete and are essentially never performed; extremely limited, highly precise modern neurosurgical procedures exist only as a last resort for a narrow range of severe, treatment-resistant conditions.

The introduction of effective antipsychotic medication in the 1950s was also a key driver of **deinstitutionalization**: the large-scale, mid-twentieth-century shift away from long-term confinement of people with severe psychological disorders in psychiatric hospitals, toward community-based and outpatient treatment. While intended to reduce inhumane institutional conditions and support greater patient autonomy, deinstitutionalization also revealed a persistent gap between the need for accessible, well-funded community mental health services and the resources actually available in many communities — a policy tension that continues to shape mental health care today.

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Sốc điện (electroconvulsive therapy – ECT): gây co giật có kiểm soát bằng dòng điện dưới gây mê và thuốc giãn cơ, dùng cho trầm cảm nặng **kháng trị** hoặc cần đáp ứng nhanh (nguy cơ tự sát cao). ECT hiện đại an toàn hơn nhiều so với hình ảnh bị kỳ thị trong lịch sử; tác dụng phụ chính là mất trí nhớ ngắn hạn. **Phẫu thuật tâm thần (psychosurgery)**, ví dụ **cắt thùy não trước (lobotomy)** phổ biến giữa thế kỷ 20, gây tác dụng phụ nghiêm trọng và không thể phục hồi – hiện nay được coi là **lỗi thời**, gần như không còn được thực hiện. Sự ra đời của thuốc chống loạn thần vào thập niên 1950 cũng là động lực chính cho **phi thể chế hoá (deinstitutionalization)** – xu hướng chuyển từ giam giữ dài hạn trong bệnh viện tâm thần sang chăm sóc tại cộng đồng/ngoại trú, dù đi kèm với vấn đề thiếu nguồn lực chăm sóc cộng đồng đầy đủ ở nhiều nơi.

5.12.3 Evaluating Treatment: Evidence, Eclecticism, and Cultural Competence

Contemporary clinical practice emphasizes **empirically supported (evidence-based) treatment**: interventions whose effectiveness has been demonstrated through rigorous research, ideally including randomized controlled trials, rather than relying solely on clinical tradition or theoretical appeal. In practice, many clinicians adopt an **eclectic approach**, combining techniques drawn from multiple therapeutic orientations and tailoring treatment to the specific client, disorder, and context rather than rigidly applying a single school of therapy. Finally, **cultural competence** – awareness of and sensitivity to a client's cultural background, values, language, and lived experiences (including experiences of discrimination or stigma) – is increasingly recognized as essential for accurate diagnosis, a strong therapeutic relationship, and effective, respectful treatment; culturally adapted therapy is associated with improved engagement and outcomes.

Approach	Theoretical basis	Key technique(s)	Best suited for
Psychoanalysis / psychodynamic	Unconscious conflict, early-childhood roots (Freud)	Free association, dream analysis, interpreting resistance/-transference	Insight into long-standing relational and unconscious patterns
Humanistic / client-centered	Innate growth drive; blocked self-actualization (Rogers)	Unconditional positive regard, empathy, active listening, non-directive stance	Clients seeking self-understanding, self-acceptance
Behavior therapy	Classical/operant conditioning	Systematic desensitization, exposure, aversive conditioning, token economies	Phobias, specific fears, institutional behavior change
Cognitive therapy / REBT	Distorted thoughts and irrational beliefs cause distress (Beck, Ellis)	Identify/dispute negative thoughts and irrational beliefs; ABC(DE) model	Depression, anxiety, self-defeating belief patterns
CBT	Integration of cognitive + behavioral principles	Cognitive restructuring plus graded exposure/behavioral activation	Broad range: depression, anxiety, OCD, PTSD, eating disorders
Group / family therapy	Social support and systemic influence	Peer feedback and modeling; addressing family communication patterns	Shared struggles; family-linked or relational difficulties
Psychopharmacology	Neurotransmitter dysregulation	Antipsychotics, antidepressants, anti-anxiety medication, mood stabilizers	Schizophrenia, depression, anxiety, bipolar disorder
ECT	Induced controlled seizure alters brain activity	Brief electrical stimulation under anesthesia	Severe, treatment-resistant depression; urgent risk

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Điều trị dựa trên chứng cứ (evidence-based treatment): ưu tiên các phương pháp đã được kiểm chứng hiệu quả qua nghiên cứu khoa học nghiêm ngặt. **Phương pháp hỗn hợp (eclectic approach)**: nhiều nhà trị liệu kết hợp kỹ thuật từ nhiều trường phái khác nhau, tùy theo khách hàng và rối loạn cụ thể, không cứng nhắc theo một trường phái duy nhất. **Năng lực văn hoá (cultural competence)**: hiểu biết và tôn trọng bối cảnh văn hoá, giá trị, và trải nghiệm của khách hàng (kể cả trải nghiệm bị kỳ thị/phân biệt) là yếu tố quan trọng để chẩn đoán chính xác và trị liệu hiệu quả.

Choosing between psychotherapy and biomedical treatment

In practice, the choice is rarely either/or. Biomedical treatment tends to act relatively quickly on biological symptoms (e.g., an antipsychotic reducing hallucinations, an SSRI gradually lifting depressed mood) but does not, by itself, teach new coping skills or address the psychological/-

social contributors to distress. Psychotherapy tends to act more gradually but builds durable skills (cognitive restructuring, healthier relationship patterns, coping strategies) that can outlast active treatment. For many disorders — moderate-to-severe depression, anxiety disorders, and schizophrenia among them — research supports **combined treatment** (medication plus psychotherapy) as more effective than either approach alone, consistent with the biopsychosocial model's core claim that biological, psychological, and social factors all meaningfully contribute to psychological disorder and its treatment.

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Trong thực hành, việc chọn giữa trị liệu tâm lý và trị liệu y sinh hiếm khi là lựa chọn "một trong hai". Trị liệu y sinh thường tác động **nhANH HƠN** lên triệu chứng sinh học nhưng không tự dạy kỹ năng ứng phó mới; trị liệu tâm lý tác động **CHẬM HƠN** nhưng xây dựng kỹ năng bền vững hơn theo thời gian. Với nhiều rối loạn (trầm cảm vừa-nặng, rối loạn lo âu, tâm thần phân liệt), nghiên cứu cho thấy **điều trị kết hợp** (thuốc + trị liệu tâm lý) hiệu quả hơn dùng riêng một phương pháp – phù hợp với mô hình sinh học-tâm lý-xã hội.

5.12.4 Well-Being, Resilience, and Positive Psychology

Alongside treating disorder, psychology has increasingly studied what supports psychological health and thriving even in the absence of diagnosable illness. **Martin Seligman** — whose earlier research on learned helplessness (Section 5.9) helped explain the passivity seen in depression — later became a founding figure of **positive psychology**, a movement dedicated to the scientific study of human strengths, virtues, and the conditions that promote flourishing, rather than focusing exclusively on dysfunction. Related constructs include **resilience** (the capacity to adapt well and recover functioning following adversity or trauma, supported by factors such as social support, effective coping skills, and a sense of meaning) and general subjective **well-being**, which research links to supportive relationships, a sense of purpose, and healthy lifestyle behaviors such as regular physical activity and adequate sleep — many of the same factors that, as covered earlier in this unit, also directly protect against the physical toll of chronic stress.

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Tâm lý học tích cực (positive psychology), gắn liền với **Martin Seligman** (người trước đó nghiên cứu về sự bất lực học được), tập trung nghiên cứu khoa học về điểm mạnh, giá trị đạo đức, và điều kiện giúp con người **phát triển tối ưu (flourishing)**, thay vì chỉ tập trung vào rối loạn/bệnh lý. **Khả năng phục hồi (resilience)** là năng lực thích nghi và hồi phục chức năng tốt sau sang chấn/khó khăn – được hỗ trợ bởi mạng lưới xã hội, kỹ năng ứng phó hiệu quả, và cảm giác có ý nghĩa sống – những yếu tố cũng bảo vệ con người khỏi tác động tiêu cực của stress mạn tính đã đề cập trong chương này.

5.13 Problem Bank

Bài tập luyện tập

Which theory of motivation best explains why a person who is not currently thirsty still drinks a glass of iced lemonade offered at a party because it looks appealing?

- | | |
|----------------------------|----------------------|
| (A) Drive-reduction theory | (C) Instinct theory |
| (B) Incentive theory | (D) Set point theory |

Lời giải chi tiết

Drinking is pulled by the attractiveness of an external stimulus (the appealing drink) rather than pushed by an internal biological deficit – the hallmark of incentive theory. **(B)**.

Bài tập luyện tập

Explain the difference between a primary drive and a secondary drive, and give one original example of each.

Lời giải chi tiết

A **primary drive** is directly tied to a biological survival need (e.g., thirst, driven by the body's need for water). A **secondary drive** is learned through association with primary reinforcers and does not itself satisfy a biological need (e.g., the drive to accumulate social media followers, learned through repeated association with approval and social reward).

Bài tập luyện tập

Sort the following into primary drives and secondary drives, and briefly justify each: thirst, the desire for a particular brand's approval/status symbol, pain avoidance, the drive to accumulate wealth beyond basic needs.

Lời giải chi tiết

Primary drives (tied directly to biological survival needs): **thirst** (the body's need for water) and **pain avoidance** (an innate protective response to bodily harm). **Secondary drives** (learned through association with primary reinforcers, not themselves biologically necessary): **desire for a status symbol** and **drive to accumulate wealth beyond basic needs**, both learned through repeated association with social approval, security, and access to primary rewards.

Bài tập luyện tập

According to the Yerkes–Dodson law, performance is generally best when arousal is:

- | | |
|--------------------------------|--|
| (A) As low as possible | (C) At a moderate level, depending on task difficulty |
| (B) As high as possible | (D) Completely absent |

Lời giải chi tiết

The law describes an inverted-U relationship: performance peaks at a moderate, task-dependent arousal level, not at the extremes. **(C)**.

Bài tập luyện tập

A goalkeeper performs best in a high-pressure penalty shootout (a simple, well-rehearsed reaction task), while a chess player performs worse in a high-pressure championship match (a complex, multi-step reasoning task) compared to a calmer practice game. Using the Yerkes–Dodson law, explain why the same high arousal level helps one performer and hurts the other.

Lời giải chi tiết

For the goalkeeper's simple, well-learned reactive task, the optimal-arousal peak sits at a relatively high level, so the shootout's high arousal falls near that peak and supports performance. For the chess player's complex, multi-step reasoning task, the optimal-arousal peak sits at a lower level; the championship's high arousal pushes performance past that lower peak and onto the declining part of the inverted-U curve, disrupting the working memory and careful reasoning chess requires.

Bài tập luyện tập

A dog salivates at the smell of food even though it was fed thirty minutes ago and shows no physiological signs of hunger. This is best explained by:

- | | |
|--|---|
| (A) Drive-reduction theory, because the dog has an unmet biological need | (C) Instinct theory, because salivation is entirely genetically fixed |
| (B) Incentive theory, because an external stimulus is pulling the behavior | (D) Set point theory, because the dog's weight has changed |

Lời giải chi tiết

The dog is responding to an appealing external stimulus (the smell) rather than an internal deficit — classic incentive-theory "pull," not drive-reduction "push." **(B)**.

Bài tập luyện tập

A person struggling to afford stable housing and consistent meals reports having little interest in pursuing a promotion that would bring more prestige but require relocating farther from cheap, reliable food sources. According to Maslow's hierarchy of needs, why might this be the case, and what is one limitation of applying the hierarchy too rigidly here?

Lời giải chi tiết

Maslow's hierarchy predicts that unmet lower-level needs (here, physiological/safety needs for reliable food and housing) tend to dominate motivation, making higher-level esteem needs (career prestige) less pressing until the lower needs are more securely met. One limitation: the hierarchy is a general tendency, not an absolute law — some individuals pursue esteem, belonging, or self-actualization goals even while lower needs remain unmet, so the model should not be used to assume any one person's priorities without direct evidence.

Bài tập luyện tập

Damage to the ventromedial hypothalamus (VMH) is most likely to result in:

- | | |
|---------------------------------------|--|
| (A) Complete refusal to eat (aphagia) | (C) Loss of the sense of smell |
| (B) Overeating and obesity | (D) Increased ghrelin secretion from the stomach |

Lời giải chi tiết

The VMH is the brain's satiety ("hunger off") center; damage removes the normal "stop eating" signal, producing overeating and weight gain. **(B)**.

Bài tập luyện tập

Distinguish the roles of ghrelin, leptin, and insulin in hunger regulation.

Lời giải chi tiết

Ghrelin, secreted by the stomach, rises before meals and stimulates appetite (a "hunger on" signal). **Leptin**, secreted by fat cells, generally rises with greater fat stores and suppresses appetite (a "fullness" signal), though obesity can involve reduced brain sensitivity to leptin (leptin resistance). **Insulin**, secreted by the pancreas, regulates blood glucose uptake into cells and also contributes to hunger signaling in the hypothalamus.

Bài tập luyện tập

Set point theory helps explain why:

- | | |
|--|--|
| (A) Weight loss achieved through short-term dieting is often difficult to sustain, as the body's metabolism and hunger signals adjust to defend a settled weight | (C) Leptin has no influence on long-term body weight |
| (B) All humans have identical target body weights | (D) Hunger is entirely determined by cultural norms, not biology |

Lời giải chi tiết

Set point theory describes the body's tendency to defend a genetically influenced settled weight by adjusting metabolism and hunger, making sustained weight change through dieting alone difficult. (A).

Bài tập luyện tập

A student who has always loved painting for its own sake begins receiving a cash prize every time she completes a painting for a class assignment. Months later, she reports painting far less on her own time, even after the prize program ends. Name and explain the phenomenon illustrated here.

Lời giải chi tiết

This illustrates the **overjustification effect**: introducing a strong extrinsic reward (the cash prize) for an activity she was originally intrinsically motivated to do shifted her sense of "why" she paints from internal enjoyment toward the external reward. Once the extrinsic reward stopped, her original intrinsic motivation had been undermined, resulting in less voluntary painting than before the reward was introduced.

Bài tập luyện tập

The three components of emotion are:

- | | |
|--|--|
| (A) Physiological arousal, expressive/behavioral response, and cognitive/subjective experience | (C) Primary appraisal, secondary appraisal, and coping |
| (B) Motivation, cognition, and perception | (D) Instinct, drive, and incentive |

Lời giải chi tiết

Emotion is composed of physiological arousal, an expressive/behavioral component, and the cognitive/subjective felt experience. **(A)**.

Bài tập luyện tập

A hiker rounds a bend and comes face to face with a bear. Using the **James–Lange** theory and the **Cannon–Bard** theory, describe two different predicted sequences of events explaining why the hiker feels intense fear, and identify the brain structure central to the Cannon–Bard account.

Lời giải chi tiết

Under **James–Lange**, seeing the bear first triggers physiological arousal and bodily responses (racing heart, freezing, trembling), and the hiker's brain then interprets *that* bodily state as fear – the arousal causes the felt emotion. Under **Cannon–Bard**, the sight of the bear activates the **thalamus**, which simultaneously and independently sends signals to the autonomic nervous system (producing the racing heart and trembling) and to the cortex (producing the conscious feeling of fear) – the arousal and the felt fear occur together as parallel effects, with neither causing the other.

Bài tập luyện tập

According to the Schachter–Singer two-factor theory, a specific felt emotion requires:

- | | |
|---|--|
| (A) Physiological arousal alone, with no cognitive input | (C) Both physiological arousal and a cognitive label/appraisal of the situation |
| (B) A cognitive label alone, with no physiological arousal | (D) Activation of the thalamus only |

Lời giải chi tiết

Schachter and Singer proposed that emotion requires both an undifferentiated state of arousal and a cognitive label drawn from context to determine the specific emotion felt. **(C)**.

Bài tập luyện tập

In the Schachter and Singer (1962) epinephrine study, identify the independent variable(s) and the dependent variable, and explain what the results demonstrated about the causes of emotion.

Lời giải chi tiết

The **independent variables** were (1) whether participants were accurately informed, uninformed, or misinformed about the physical effects of the epinephrine injection, and (2) whether the confederate they waited with behaved euphorically or angrily. The **dependent variable** was the emotion participants reported feeling. Results showed that informed participants (who had an accurate explanation for their arousal) reported little emotional shift regardless of the confederate's behavior, while uninformed/misinformed participants – lacking an explanation for their arousal – tended to adopt the emotional label suggested by the confederate's behavior (euphoria or anger). This demonstrated that the same undifferentiated

physiological arousal can be experienced as different specific emotions depending on the cognitive label applied to it, supporting the two-factor theory.

Bài tập luyện tập

Paul Ekman's cross-cultural research on facial expressions provided evidence that:

- | | |
|--|--|
| (A) Facial expressions of basic emotions are entirely learned and vary unpredictably across cultures | different cultures, suggesting a biological basis |
| (B) A core set of facial expressions for basic emotions is produced and recognized with strong consistency across widely | (C) Display rules are identical across all cultures |
| | (D) Facial expressions have no relationship to underlying emotional states |

Lời giải chi tiết

Ekman found strong cross-cultural consistency in the production and recognition of basic facial expressions, supporting a biological/evolutionary basis for emotional expression. **(B)**.

Bài tập luyện tập

Explain the facial feedback hypothesis and describe one piece of evidence that supports it.

Lời giải chi tiết

The **facial feedback hypothesis** proposes that the configuration of one's facial muscles can itself influence and intensify subjective emotional experience, not merely express an already-formed feeling. Supporting evidence: participants who held a pen crosswise in their teeth (forcing a smile-like configuration) rated cartoons as funnier than participants who held the pen with their lips (a configuration incompatible with smiling), even though neither group intentionally smiled or frowned — suggesting the facial configuration itself shaped the felt emotion.

Bài tập luyện tập

A polygraph test is considered scientifically unreliable primarily because it:

- | | |
|--|--|
| (A) Cannot record any physiological signals at all | produce misleading results |
| (B) Measures general autonomic arousal, which is not specific to lying — both anxious innocent people and calm liars can | (C) Only works on people who have never been tested before |
| | (D) Directly reads a person's thoughts |

Lời giải chi tiết

The polygraph measures nonspecific autonomic arousal (heart rate, skin conductance, breathing), which can be produced by anxiety unrelated to lying (false positives) or suppressed by practiced liars (false negatives). **(B)**.

Bài tập luyện tập

A job applicant fails a pre-employment polygraph screening. The applicant has a documented history of severe test-related anxiety and no prior evidence of dishonesty. Evaluate whether the polygraph result alone provides strong evidence of dishonesty, referencing what the polygraph actually measures.

Lời giải chi tiết

The polygraph result alone does **not** provide strong evidence of dishonesty. Because the device measures general autonomic arousal rather than lying itself, an applicant with documented severe anxiety could produce substantial arousal purely from the stress of the testing situation, generating a **false positive**. Without independent, corroborating evidence, treating this result as proof of dishonesty would be scientifically unsound, which is a central reason polygraph evidence is restricted or excluded in many legal and employment contexts.

Bài tập luyện tập

Two employees are both assigned an unexpected, difficult new project with a tight deadline. Employee A appraises it as "a chance to prove what I can do, and I have the skills and support to manage it." Employee B appraises it as "an impossible burden that will expose my weaknesses." Using Lazarus's model of cognitive appraisal, explain how their differing primary and secondary appraisals are likely to affect their stress responses.

Lời giải chi tiết

Employee A's **primary appraisal** frames the project as a **challenge** rather than a threat, and their **secondary appraisal** judges their coping resources as adequate — this combination predicts a more motivated, engaged, and adaptive stress response. Employee B's primary appraisal frames the identical project as a **threat**, and their secondary appraisal judges their resources as inadequate — this combination predicts greater anxiety, avoidance, and impaired performance. The objective stressor (the project) is the same for both; the appraisal process, not the event itself, drives the difference in stress response.

Bài tập luyện tập

A new employee describes her first month at a demanding job: "The first week I felt shaky and overwhelmed, almost in shock. By the second and third week I was somehow keeping up with everything, running on adrenaline. But by the end of the month I was constantly sick, exhausted, and couldn't focus even on simple tasks." Apply Selye's General Adaptation Syndrome to this account, naming each stage and its underlying physiology.

Lời giải chi tiết

Week 1 (**alarm reaction**): the sudden stressor of a demanding new job triggers sympathetic nervous system activation and an initial dip in resistance as the body registers the shock. Weeks 2–3 (**resistance stage**): sustained release of stress hormones (cortisol, adrenaline) allows her to maintain above-normal functioning and "keep up," at a real physiological cost. End of month 1 (**exhaustion stage**): her physiological reserves have been depleted by continuous hormone output; resistance drops below normal, immune function weakens (frequent illness), and cognitive/attentional resources are impaired — consistent with the well-documented link between chronic stress and suppressed immune functioning.

Bài tập luyện tập

In Selye's General Adaptation Syndrome, the stage in which the body's resistance to stress temporarily drops *below* normal levels a second time, after having been sustained *above* normal, is the:

- | | |
|----------------------|----------------------|
| (A) Alarm reaction | (C) Exhaustion stage |
| (B) Resistance stage | (D) Recovery stage |

Lời giải chi tiết

After the resistance stage sustains above-normal resistance, prolonged stress depletes the body's reserves, and resistance falls below normal in the exhaustion stage. **(C)**.

Bài tập luyện tập

Which pairing correctly matches a stress response with its most closely associated researcher?

- | | |
|---|---|
| (A) Fight-or-flight – Shelley Taylor; Tend-and-befriend – Walter Cannon | (C) General Adaptation Syndrome – Richard Lazarus; Cognitive appraisal – Hans Selye |
| (B) Fight-or-flight – Walter Cannon; Tend-and-befriend – Shelley Taylor | (D) Learned helplessness – Aaron Beck; Negative cognitive triad – Martin Seligman |

Lời giải chi tiết

Walter Cannon described fight-or-flight; Shelley Taylor described tend-and-befriend (particularly well documented in females, linked to oxytocin). **(B)**.

Bài tập luyện tập

After a frightening natural disaster warning, a mother in the shelter spends the crisis holding and calming her children and quickly coordinating with other parents to share supplies and information, rather than displaying overt aggression or attempting to flee alone. This behavior is best described as:

- | | |
|------------------------------------|---------------------------------------|
| (A) The fight-or-flight response | (C) Learned helplessness |
| (B) The tend-and-befriend response | (D) An emotion-focused coping failure |

Lời giải chi tiết

Nurturing dependents and forming supportive social alliances under threat is the tend-and-befriend pattern described by Shelley Taylor. **(B)**.

Bài tập luyện tập

A man diagnosed with a chronic illness he cannot cure focuses his energy on joining a support group, practicing mindfulness meditation, and reframing his diagnosis as "one part of my life, not the whole of it," rather than trying to change the medical facts themselves. Which coping strategy is this, and why might it be well-matched to his situation?

Lời giải chi tiết

This is **emotion-focused coping**: he is managing his emotional and psychological response to the stressor (support group, meditation, cognitive reframing) rather than attempting to change the stressor itself. This strategy is well-matched because the stressor — a chronic, incurable illness — is largely **uncontrollable**; emotion-focused coping tends to be more adaptive than problem-focused coping when the source of stress cannot be directly altered.

Bài tập luyện tập

Follow-up research on Friedman and Rosenman's Type A personality pattern identified which specific component as most strongly linked to coronary heart disease risk?

- | | |
|----------------------------|------------------|
| (A) Competitiveness | (C) Hostility |
| (B) Ambition and hard work | (D) Time urgency |

Lời giải chi tiết

Hostility, not competitiveness or ambition alone, was identified as the most toxic component of the Type A pattern for cardiovascular health. **(C)**.

Bài tập luyện tập

The biopsychosocial model of health differs from the traditional (biomedical) model primarily by:

- | | |
|---|---|
| (A) Focusing exclusively on genetic causes of illness alone | (C) Rejecting the role of medication in treatment |
| (B) Treating biological, psychological, and social factors as interacting contributors to health and illness, rather than biology | (D) Applying only to psychological, not physical, illness |

Lời giải chi tiết

The biopsychosocial model integrates biological, psychological, and social-cultural factors as interacting influences on health, broadening the narrower, biology-only medical model. **(B)**.

Bài tập luyện tập

List and briefly define the four considerations ("4 D's") clinicians commonly weigh when determining whether a pattern of thoughts, feelings, or behavior qualifies as a psychological disorder.

Lời giải chi tiết

Deviance: the pattern differs markedly from social/cultural norms. **Distress**: it causes significant subjective suffering. **Dysfunction**: it interferes with normal daily functioning. **Danger**: it poses risk of harm to self or others (present in some, not all, cases). None is individually necessary or sufficient in every case; clinicians weigh them together with cultural context.

Bài tập luyện tập

A clinician explains a client's anxiety disorder by referencing genetic vulnerability, a history of critical/punitive parenting that shaped anxious thought patterns, and ongoing financial stress in an unsupportive community. This explanation reflects the:

- | | |
|---------------------------|--------------------------------------|
| (A) Medical model | (C) Psychoanalytic model exclusively |
| (B) Biopsychosocial model | (D) Instinct theory of motivation |

Lời giải chi tiết

The explanation integrates biological (genetics), psychological (learned thought patterns from parenting), and social (financial stress, lack of community support) factors — the biopsychosocial model. **(B)**.

Bài tập luyện tập

A patient reports chronic, excessive worry about her job performance, her children's safety, and her finances, occurring nearly every day for the past year, along with muscle tension and difficulty sleeping — but she has never experienced a sudden, discrete episode of overwhelming panic. This presentation is most consistent with:

- | | |
|----------------------------------|------------------------------------|
| (A) Panic disorder | (C) Obsessive-compulsive disorder |
| (B) Generalized anxiety disorder | (D) Post-traumatic stress disorder |

Lời giải chi tiết

Chronic, diffuse worry across multiple life domains lasting many months, without discrete panic attacks, matches generalized anxiety disorder. **(B)**.

Bài tập luyện tập

A patient describes obsessively fearing that she will contaminate her family with germs, and she washes her hands upwards of 60 times a day to reduce this fear, despite recognizing that this is excessive. This is most consistent with:

- | | |
|----------------------------------|-----------------------------------|
| (A) Specific phobia | (C) Obsessive-compulsive disorder |
| (B) Generalized anxiety disorder | (D) Social anxiety disorder |

Lời giải chi tiết

An intrusive obsession (contamination fear) paired with a repetitive compulsion performed to reduce the resulting anxiety (excessive handwashing), with insight that the behavior is excessive, is the hallmark of OCD. **(C)**.

Bài tập luyện tập

Name the four symptom clusters required for a PTSD diagnosis.

Lời giải chi tiết

Intrusive re-experiencing (flashbacks, nightmares), **avoidance** of trauma-related reminders, **negative changes in mood/cognition** (negative beliefs, emotional numbing), and **hyperarousal** (hypervigilance, exaggerated startle, sleep disturbance) — persisting more than one month and causing significant impairment.

Bài tập luyện tập

A 19-year-old reports, for the past three weeks, feeling persistently sad and empty, having lost all interest in activities he once enjoyed, sleeping 12+ hours a day yet still feeling exhausted, struggling to concentrate in class, and feeling that he is "worthless and a burden." He denies any period of elevated mood, high energy, or grandiosity. Identify the most likely diagnosis and cite the specific criteria that support it.

Lời giải chi tiết

This matches **major depressive disorder**: depressed mood and anhedonia (loss of interest) nearly every day for at least two weeks (here, three weeks), plus additional symptoms — sleep disturbance (hypersomnia), fatigue, poor concentration, and feelings of worthlessness — all present. The absence of any manic or hypomanic episode rules out bipolar disorder.

Bài tập luyện tập

A 30-year-old's history includes two prior two-week periods of depressed mood and low energy, but also one week last year when she needed almost no sleep, talked rapidly and expansively about "revolutionary business plans," spent her entire savings account on impulse purchases, and felt unstoppable — a pattern her family found alarming and out of character. Identify the most likely diagnosis and explain what specifically distinguishes it from major depressive disorder alone.

Lời giải chi tiết

This matches **bipolar disorder**. The distinguishing feature is the documented manic episode (decreased need for sleep, rapid/expansive speech, grandiosity, impulsive risky spending, clearly out of character and impairing) alongside her depressive episodes. Major depressive disorder alone would require the *absence* of any manic or hypomanic episode in her history — since one is present here, bipolar disorder is the better-fitting diagnosis regardless of how severe her depressive episodes are.

Bài tập luyện tập

Hallucinations and delusions are classified as _____ symptoms of schizophrenia, while flat affect and avolition are classified as _____ symptoms.

(A) negative; positive

(C) primary; secondary

(B) positive; negative

(D) acute; chronic

Lời giải chi tiết

Hallucinations/delusions are additions to normal experience (positive symptoms); flat affect/avolition are deficits in normal functioning (negative symptoms). **(B)**.

Bài tập luyện tập

The dopamine hypothesis of schizophrenia is supported indirectly by which piece of evidence?

- (A) Antidepressants reliably eliminate all symptoms of schizophrenia
- (B) Antipsychotic drugs that block dopamine receptors reduce positive symptoms, and drugs that increase dopamine activity can induce psychosis-like symptoms
- (C) Schizophrenia occurs equally in every culture with identical symptom presentation
- (D) Dopamine levels are unrelated to any psychiatric medication's effectiveness

Lời giải chi tiết

The effectiveness of dopamine-blocking antipsychotics against positive symptoms, and the psychosis-inducing effect of dopamine-increasing drugs like amphetamines, together provide indirect support for the dopamine hypothesis. (B).

Bài tập luyện tập

A student writes on an exam: "Schizophrenia is when someone has multiple different personalities that take turns controlling their behavior." Explain what is incorrect about this statement and identify the disorder it actually describes.

Lời giải chi tiết

This statement is incorrect. Schizophrenia involves a disruption between thought, perception, and reality (hallucinations, delusions, disorganized thinking, and/or negative symptoms such as flat affect), **not** the presence of multiple distinct personality states. The description of "multiple personalities taking turns" actually describes **dissociative identity disorder (DID)**, a separate and distinct diagnostic category.

Bài tập luyện tập

A patient maintains a body weight well below what is expected for her age and height, expresses intense fear of "becoming fat" even though she is medically underweight, and insists she looks overweight when she looks in a mirror. This presentation is most consistent with:

- (A) Bulimia nervosa
- (B) Binge-eating disorder
- (C) Anorexia nervosa
- (D) Body dysmorphic disorder

Lời giải chi tiết

Significantly low body weight, intense fear of weight gain, and disturbed body-image perception are the defining features of anorexia nervosa. (C).

Bài tập luyện tập

A patient at a normal body weight reports frequent episodes of eating large quantities of food with a sense of loss of control, followed immediately by self-induced vomiting to "undo" the binge. This is most consistent with:

- (A) Anorexia nervosa
- (B) Bulimia nervosa

- (C) Binge-eating disorder
- (D) Generalized anxiety disorder

Lời giải chi tiết

Recurrent binge eating followed by compensatory behavior (vomiting), typically at a near-normal body weight, is the defining pattern of bulimia nervosa (distinguishing it from binge-eating disorder, which lacks the regular compensatory behavior). **(B)**.

Bài tập luyện tập

A seven-year-old has significant, longstanding difficulty maintaining eye contact and reciprocal conversation with peers, sticks rigidly to specific routines and becomes distressed by minor changes, and shows an intense, narrow interest in train schedules. These features, present since early childhood, are most consistent with:

- (A) ADHD
- (B) Generalized anxiety disorder
- (C) Autism spectrum disorder
- (D) Antisocial personality disorder

Lời giải chi tiết

Persistent deficits in social communication/interaction plus restricted, repetitive interests and insistence on routine, since early childhood, match autism spectrum disorder. **(C)**.

Bài tập luyện tập

A therapist encourages a client to say whatever comes to mind without censoring it, and later asks the client to describe and interpret a recurring dream. These two techniques belong to which therapeutic approach?

- (A) Client-centered therapy
- (B) Psychoanalysis / psychodynamic therapy
- (C) Cognitive-behavioral therapy
- (D) Aversive conditioning

Lời giải chi tiết

Free association and dream analysis are classic psychoanalytic/psychodynamic techniques aimed at surfacing unconscious material. **(B)**.

Bài tập luyện tập

Carl Rogers argued that a therapist should accept and value a client as a person regardless of what the client says or does. This concept is called:

- (A) Unconditional positive regard
- (B) Systematic desensitization
- (C) The negative cognitive triad
- (D) Transference

Lời giải chi tiết

Non-judgmental acceptance of the client, regardless of content disclosed, is Rogers's concept of unconditional positive regard. **(A)**.

Bài tập luyện tập

A client with a severe fear of public speaking is treated by a therapist who first teaches relaxation techniques, then has the client gradually work through a hierarchy of speaking-related situations — from speaking to one trusted friend, to a small familiar group, to eventually a large unfamiliar audience — practicing relaxation before each step. A second client with disruptive classroom behavior is treated by a school psychologist who gives the student tokens for on-task behavior, exchangeable later for extra recess time. (a) Name the technique used with each client. (b) Identify the type of conditioning underlying each technique, and explain why each technique fits its target problem.

Lời giải chi tiết

(a) The first client receives **systematic desensitization**; the second receives a **token economy**. (b) Systematic desensitization is grounded in **classical conditioning**: it works by counter-conditioning a relaxation response to gradually replace a learned fear response to specific stimuli (public speaking situations), making it well suited to a discrete, stimulus-triggered fear like a phobia of public speaking. The token economy is grounded in **operant conditioning**: it uses reinforcement (tokens exchangeable for rewards) to increase the future frequency of a specific voluntary behavior (on-task behavior), making it well suited to shaping an ongoing pattern of behavior in an institutional/classroom setting rather than resolving a single conditioned fear.

Bài tập luyện tập

In Albert Ellis's rational-emotive behavior therapy (REBT), the therapist's central task is to:

- | | |
|---|---|
| (A) Passively reflect the client's feelings without offering direct challenge | (C) Analyze the symbolic content of the client's dreams |
| (B) Actively dispute the client's irrational beliefs | (D) Administer psychiatric medication |

Lời giải chi tiết

REBT's defining technique is the active, direct disputation of irrational beliefs (the "D" in the ABC(DE) model). **(B)**.

Bài tập luyện tập

Cognitive-behavioral therapy (CBT) is best described as:

- | | |
|--|--|
| (A) A purely psychodynamic technique focused on unconscious conflict | (C) A biomedical treatment involving medication only |
| (B) An integration of cognitive techniques (challenging distorted thoughts) with behavioral techniques (such as graded exposure) | (D) A technique used exclusively for schizophrenia |

Lời giải chi tiết

CBT integrates cognitive restructuring with behavioral techniques and is empirically supported across a broad range of disorders. **(B)**.

Bài tập luyện tập

Antipsychotic medications are believed to reduce the positive symptoms of schizophrenia primarily by:

- | | |
|-----------------------------------|-------------------------------------|
| (A) Increasing serotonin reuptake | (C) Enhancing GABA activity |
| (B) Blocking dopamine receptors | (D) Stimulating the adrenal medulla |

Lời giải chi tiết

Antipsychotics block dopamine receptors, reducing the excess dopamine activity associated with positive symptoms. **(B)**.

Bài tập luyện tập

SSRIs are typically favored as a first-line treatment for depression over older antidepressant classes primarily because they:

- | | |
|---|--|
| (A) Work within minutes of the first dose | (C) Directly block dopamine receptors |
| (B) Have a relatively favorable side-effect profile while effectively increasing available serotonin at the synapse | (D) Cure depression permanently with a single dose |

Lời giải chi tiết

SSRIs block serotonin reuptake, increasing its synaptic availability, and generally have fewer/less severe side effects than older antidepressant classes, making them a common first-line choice (though full effect typically takes weeks, not minutes). **(B)**.

Bài tập luyện tập

Why does lithium treatment for bipolar disorder require regular blood-level monitoring?

Lời giải chi tiết

Lithium has a **narrow therapeutic window** — the gap between an effective dose and a toxic dose is small — so blood levels must be monitored regularly to ensure the dose remains high enough to stabilize mood without reaching levels that cause toxicity.

Bài tập luyện tập

Modern electroconvulsive therapy (ECT) is most commonly used for:

- | | |
|---|--|
| (A) Mild, short-term stress reactions | (C) Specific phobias |
| (B) Severe, treatment-resistant depression, or cases requiring a rapid response | (D) Attention-deficit/hyperactivity disorder |

Lời giải chi tiết

ECT is reserved for severe, treatment-resistant depression or situations (such as high suicide risk) requiring a rapid clinical response, and is administered under anesthesia with far more safety than its historical portrayal. **(B)**.

Bài tập luyện tập

A clinician combines cognitive restructuring techniques from CBT with active-listening skills from client-centered therapy, tailoring the mix to each client's specific needs rather than adhering strictly to one school of therapy. This approach is best described as:

- | | |
|--------------------|---------------------------|
| (A) Psychoanalytic | (C) Purely biomedical |
| (B) Eclectic | (D) Aversive conditioning |

Lời giải chi tiết

Combining techniques from multiple therapeutic orientations, tailored to the client, is the eclectic approach. **(B)**.

Bài tập luyện tập

A commuter facing two job offers must choose between a higher-paying position in an exciting city far from family and a lower-paying but stable position close to family. Both options have clear pros and cons. This best illustrates:

- | | |
|-------------------------------------|------------------------------------|
| (A) An approach-approach conflict | (C) An approach-avoidance conflict |
| (B) An avoidance-avoidance conflict | (D) The overjustification effect |

Lời giải chi tiết

Choosing between two options that each carry both appealing and unappealing features is a more complex case, but if each option is itself seen as attractive overall (an exciting job vs. family stability), this is best classified as an approach-approach conflict between two desirable-but-different goods. **(A)**.

Bài tập luyện tập

A manager notices an employee's tense posture and short replies (correctly inferring frustration) and chooses to postpone a sensitive conversation until the employee has calmed down. This primarily demonstrates which component of emotional intelligence?

- | | |
|-------------------------|----------------------------|
| (A) Managing emotions | (C) Using emotions |
| (B) Perceiving emotions | (D) Understanding emotions |

Lời giải chi tiết

Accurately reading another person's emotional state from nonverbal cues is the "perceiving emotions" component of emotional intelligence. **(B)**.

Bài tập luyện tập

In a clinical drug trial, why must researchers include a placebo control group and, ideally, a double-blind design?

Lời giải chi tiết

A placebo control group is necessary because the **placebo effect** – improvement driven purely by a participant's belief that they are being treated – can produce real symptom improvement even without an active treatment. Without a placebo comparison, an active treatment's apparent effectiveness could simply reflect this expectation effect rather than the treatment's specific biological action. A **double-blind** design (neither participants nor administering researchers know who receives the real treatment) further prevents both participant expectation and researcher bias from distorting the results.

Bài tập luyện tập

The amygdala's role in triggering a rapid startle/threat response before a stimulus has been fully, consciously identified provides support for which theorist's claim about the timing of emotional appraisal?

- (A) William James, who argued cognition plays no role in emotion (C) Paul Ekman, who argued facial expressions are entirely learned
(B) Richard Lazarus, who argued cognitive appraisal can occur automatically and outside full conscious awareness (D) B.F. Skinner, who argued emotion is irrelevant to behavior

Lời giải chi tiết

The amygdala's fast, subcortical threat response before full conscious identification is consistent with Lazarus's claim that appraisal can occur automatically, even outside conscious awareness. **(B)**.

Bài tập luyện tập

Using the Holmes–Rahe Social Readjustment Rating Scale approach, a person accumulates 43 points from a change in job responsibilities, 39 points from the birth of a child, and 29 points from a change in living conditions within one year. (a) Find her total score. (b) Name one factor the raw total fails to capture about her actual stress experience.

Lời giải chi tiết

(a) $43 + 39 + 29 = 111$ points. (b) The raw total does not capture her individual **cognitive appraisal** of each event (e.g., whether the birth of a child was appraised as a joyful challenge or an overwhelming threat), nor her available coping resources or social support – all of which shape her actual experienced stress beyond what a population-average point value can reflect.

Bài tập luyện tập

A patient meets full diagnostic criteria for both major depressive disorder and generalized anxiety disorder at the same time. This is an example of:

- (A) Misdiagnosis (C) The medical model
(B) Comorbidity (D) A culture-bound syndrome

Lời giải chi tiết

The simultaneous presence of two distinct diagnosable disorders in the same person is comorbidity. **(B)**.

Bài tập luyện tập

A patient experiences recurring depressive episodes only during the fall and winter months, with full remission each spring. The most appropriate DSM-5 specifier for this pattern is:

- | | |
|---------------------------|-----------------------------|
| (A) With peripartum onset | (C) With psychotic features |
| (B) With seasonal pattern | (D) With catatonia |

Lời giải chi tiết

A depressive pattern that reliably follows the seasons (popularly "seasonal affective disorder") is specified "with seasonal pattern." **(B)**.

Bài tập luyện tập

Antisocial personality disorder and borderline personality disorder both belong to which DSM-5 personality disorder cluster?

- | | |
|------------------------------------|--|
| (A) Cluster A ("odd/eccentric") | (C) Cluster C ("anxious/fearful") |
| (B) Cluster B ("dramatic/erratic") | (D) They are not personality disorders |

Lời giải chi tiết

Antisocial and borderline personality disorders are both classified under Cluster B, the "dramatic/erratic" cluster. **(B)**.

Bài tập luyện tập

The large-scale, mid-twentieth-century shift away from long-term psychiatric hospitalization toward community-based and outpatient mental health care, partly enabled by the development of effective antipsychotic medication, is known as:

- | | |
|----------------------------|----------------------------------|
| (A) Deinstitutionalization | (C) The overjustification effect |
| (B) Psychosurgery | (D) Aversive conditioning |

Lời giải chi tiết

This historical shift in treatment settings, enabled by effective medication, is called deinstitutionalization. **(A)**.

Bài tập luyện tập

Research comparing outcomes across different psychotherapy orientations (psychodynamic, humanistic, CBT, etc.) has found that a strong predictor of successful treatment, largely independent of the specific technique used, is the:

- (A) Cost of the therapy session
- (B) Strength of the therapeutic alliance between client and therapist
- (C) Length of the client's commute to sessions
- (D) Number of academic degrees held by the therapist

Lời giải chi tiết

The quality of the therapeutic alliance (trust and collaboration between client and therapist) is a well-supported "common factor" predicting treatment success across therapeutic orientations. (B).

Bài tập luyện tập

Identical twins with the same genetic predisposition toward efficient calorie storage are raised in very different food and activity environments and end up with substantially different adult body weights. This outcome is best explained by:

- (A) A gene mutation that occurred in only one twin
- (B) Gene-environment interaction, in which the same genetic tendency produces different outcomes depending on environment
- (C) Proof that genetics has no influence on body weight
- (D) The overjustification effect

Lời giải chi tiết

Identical genes producing different outcomes across different environments is the definition of gene-environment interaction. (B).

Bài tập luyện tập

A ten-year-old with ADHD is prescribed a stimulant medication. Explain the seemingly paradoxical logic behind using a *stimulant* to treat *hyperactivity*.

Lời giải chi tiết

Stimulant medications (such as methylphenidate) increase **dopamine and norepinephrine** activity specifically in brain circuits responsible for sustained attention and self-regulation/inhibitory control. Rather than further increasing overall hyperactive behavior, this strengthens the attentional and self-regulatory systems that were underactive, which in practice *improves* focus and reduces impulsivity/hyperactivity — the medication targets the underlying attentional circuitry, not simply "energy level" in a generic sense.

Bài tập luyện tập

Which of the following correctly distinguishes major depressive disorder, bipolar disorder, and schizophrenia?

- (A) All three are mood disorders with identical treatment
- (B) MDD involves only depressive episodes; bipolar disorder involves both manic and depressive episodes; schizophrenia is a distinct disorder involving positive/negative psychotic symptoms, not primarily a mood disturbance
- (C) Schizophrenia is simply a severe form of bipolar disorder
- (D) MDD and schizophrenia are the same disorder under different names

Lời giải chi tiết

MDD (depression only) and bipolar disorder (mania + depression) are both mood disorders, while schizophrenia is a distinct spectrum disorder defined by psychotic symptoms rather than mood disturbance alone. **(B)**.

Bài tập luyện tập

In David Rosenhan's "On Being Sane in Insane Places" study, healthy confederates were admitted to psychiatric hospitals after reporting a single vague symptom, and staff continued to interpret their subsequent normal behavior in light of their diagnosis. This study is most often cited as a caution about:

- (A) The effectiveness of antipsychotic medication
- (B) How diagnostic labels can bias the interpretation of a person's subsequent, genuinely normal behavior
- (C) The safety of electroconvulsive therapy
- (D) The reliability of the polygraph

Lời giải chi tiết

Rosenhan's study is widely cited as showing that a diagnostic label can shape how later, ordinary behavior is perceived and interpreted. **(B)**.

Bài tập luyện tập

Julian Rotter's concept of locus of control distinguishes between:

- (A) Problem-focused and emotion-focused coping
- (B) Positive and negative symptoms
- (C) The belief that outcomes are controlled by one's own actions (internal) versus by luck or external forces (external)
- (D) Type A and Type B personality

Lời giải chi tiết

Locus of control is specifically about whether a person believes outcomes are controlled internally (by their own actions) or externally (by luck/fate). **(C)**.

Bài tập luyện tập

Two students receive the same low grade on a difficult exam. Student A thinks, "I didn't study the right material – I'll change my approach next time," and increases effort. Student B thinks, "Exams are just about luck, there's nothing I can do." Identify each student's locus of control and predict their likely future study behavior.

Lời giải chi tiết

Student A displays an **internal locus of control**, attributing the outcome to a controllable, changeable factor (study approach), and is likely to increase or adjust effort in response — consistent with active, problem-focused coping. Student B displays an **external locus of control**, attributing the outcome to uncontrollable luck, and is likely to reduce effort or give up trying to improve, since from his perspective, effort would not change the outcome anyway.

Bài tập luyện tập

Reformers such as Philippe Pinel and Dorothea Dix, who advocated removing physical restraints and building humane, publicly funded psychiatric hospitals, are most associated with which historical movement?

- | | |
|---------------------|-----------------------------|
| (A) Psychosurgery | (C) The dopamine hypothesis |
| (B) Moral treatment | (D) Deinstitutionalization |

Lời giải chi tiết

Pinel and Dix are key figures in the moral treatment movement, which promoted humane, dignity-centered care for people with psychological disorders. **(B)**.

Bài tập luyện tập

According to Joseph LeDoux's dual-pathway model of fear processing, the "low road" and "high road" both begin at the thalamus but differ in that the low road:

- | | |
|--|--|
| (A) Goes directly to the amygdala for a fast, crude response, while the high road passes through the cortex for slower, fuller conscious appraisal | (B) Only operates during sleep |
| | (C) Is used exclusively for processing positive emotions |
| | (D) Bypasses the nervous system entirely |

Lời giải chi tiết

The "low road" is a fast, direct thalamus-to-amygdala route enabling an immediate response, while the "high road" routes through the cortex for detailed, conscious appraisal. **(A)**.

Bài tập luyện tập

Which of the following is classified as a behavioral risk factor that health psychologists target for disease prevention?

- | | |
|-----------------|---------------|
| (A) Blood type | (C) Eye color |
| (B) Tobacco use | (D) Height |

Lời giải chi tiết

Tobacco use is a major, modifiable behavioral risk factor for chronic disease, unlike fixed biological traits such as blood type, eye color, or height. **(B)**.

Bài tập luyện tập

A patient is prescribed a medication regimen for a chronic condition but frequently skips doses. Research on treatment adherence suggests which factor is most strongly predictive of whether she will follow the regimen consistently?

- (A) The exact brand name of the medication (C) The color of the pill
(B) Her self-efficacy, social support, and belief in the treatment's value (D) The size of the pharmacy where she fills her prescription

Lời giải chi tiết

Treatment adherence is most strongly predicted by psychological and social factors — self-efficacy, social support, and belief in the treatment's value — rather than superficial features of the medication or pharmacy. **(B)**.

Bài tập luyện tập

A patient reports feeling as though she is watching herself from outside her own body during stressful moments, and that her surroundings sometimes feel unreal or dreamlike, though she remains fully aware that these perceptions are not literally true. This is most consistent with:

- (A) Dissociative identity disorder (C) Schizophrenia
(B) Depersonalization/derealization disorder (D) Generalized anxiety disorder

Lời giải chi tiết

Feeling detached from one's own body (depersonalization) and perceiving surroundings as unreal (derealization), with intact reality testing, matches depersonalization/derealization disorder — distinct from DID (which involves distinct identity states) and from schizophrenia (which involves a genuine break from reality testing). **(B)**.

Bài tập luyện tập

Following a serious car accident, a survivor is unable to recall several hours surrounding the crash, well beyond what ordinary forgetting would explain, despite no head injury. This symptom is best described as:

- (A) Dissociative amnesia (C) A negative symptom of schizophrenia
(B) Anterograde amnesia from brain damage (D) Learned helplessness

Lời giải chi tiết

Memory loss for a stressful/traumatic period, beyond ordinary forgetting and without a physical brain injury explanation, is dissociative amnesia. **(A)**.

Bài tập luyện tập

Explain why eating disorders are best understood using the biopsychosocial model rather than attributing them to a single cause.

Lời giải chi tiết

Eating disorders arise from the interaction of **biological** factors (genetic vulnerability, disrupted hunger/satiety signaling), **psychological** factors (perfectionism, difficulty tolerating negative emotions, low self-esteem), and **sociocultural** factors (media pressure toward a thin ideal, weight-related stigma or teasing). No single one of these factors reliably explains, by itself, why a given individual develops an eating disorder – consistent with the general biopsychosocial framework used throughout this unit to explain psychological and physical health outcomes.

Bài tập luyện tập

Research indicates that for moderate-to-severe major depressive disorder, which treatment approach tends to produce the best outcomes?

- (A) Medication alone is always sufficient and psychotherapy adds nothing psychotherapy) tends to outperform either approach alone
- (B) Psychotherapy alone is always sufficient and medication adds nothing (D) Neither medication nor psychotherapy has any demonstrated effect on depression
- (C) Combined treatment (medication plus

Lời giải chi tiết

For many moderate-to-severe cases, research supports combined treatment (medication plus psychotherapy) as more effective than either approach used alone. (C).

Bài tập luyện tập

A research team wants to test whether systematic desensitization reduces fear of public speaking more effectively than no treatment. Describe how they should design this study, identifying the independent variable, the dependent variable, and one method of controlling for the placebo effect.

Lời giải chi tiết

The **independent variable** is the treatment condition (systematic desensitization vs. a comparison condition). The **dependent variable** is a measured outcome such as self-reported anxiety or physiological arousal during a public-speaking task, ideally measured both before and after treatment. To control for the placebo effect, the comparison group should receive a credible-seeming but inactive control procedure (e.g., a non-therapeutic discussion session of equal length and attention) rather than no contact at all, and – where feasible – those measuring the outcome should be kept blind to which condition each participant received, so that expectation effects (from participants or researchers) do not masquerade as a genuine treatment effect.

Bài tập luyện tập

According to the diathesis-stress model, a psychological disorder is most likely to emerge when:

- (A) A person has zero genetic risk for any disorder
- (B) A sufficient underlying vulnerability (diathesis) combines with a sufficient level of environmental stress
- (C) Stress alone is present, regardless of any underlying vulnerability
- (D) A diathesis is present but the person experiences no stress at all

Lời giải chi tiết

The model specifically proposes that disorder onset depends on vulnerability *combined with* sufficient stress, not either factor alone. **(B)**.

Bài tập luyện tập

Two coworkers face an identical stressful reorganization at work. One has a strong family history of anxiety disorders (high diathesis) and develops a panic disorder within weeks. The other has no known family history (low diathesis) and experiences only mild, temporary stress. Explain this difference using the diathesis-stress model.

Lời giải chi tiết

The coworker with a strong family history carries a higher **diathesis** (genetic/biological vulnerability) for an anxiety disorder, so even a moderate stressor (the reorganization) is sufficient to cross her personal threshold for disorder onset. The coworker with a low diathesis has a higher threshold, so the same objective stressor is not sufficient to trigger a disorder — illustrating that identical environmental stress can produce very different outcomes depending on each person's underlying vulnerability.

Bài tập luyện tập

A student thinks, "I got one question wrong on the quiz, which means I'm going to fail the entire class." This statement is an example of which cognitive distortion targeted by Beck's cognitive therapy?

- (A) Catastrophizing
- (B) Overgeneralization
- (C) Mind reading
- (D) Personalization

Lời giải chi tiết

Drawing a sweeping negative conclusion (failing the whole class) from a single, limited event (one wrong quiz question) is overgeneralization. **(B)**.

Bài tập luyện tập

A nurse reports feeling emotionally drained, increasingly cynical and detached toward her patients, and like nothing she does at work matters anymore, after years of understaffed, high-demand shifts. This pattern is best described as:

- (A) Generalized anxiety disorder
- (B) Burnout
- (C) Bipolar disorder
- (D) The overjustification effect

Lời giải chi tiết

Emotional exhaustion, depersonalization/cynicism, and a reduced sense of accomplishment tied to chronic occupational stress define burnout. **(B)**.

Bài tập luyện tập

A friend going through a difficult divorce receives a listening ear and comforting words from one friend, practical legal referrals from another, and help moving apartments from a third. Identify the three types of social support represented.

Lời giải chi tiết

The listening ear and comforting words are **emotional support**; the legal referrals are **informational support**; and the help moving apartments is **tangible/instrumental support**.

Bài tập luyện tập

A person facing two unappealing options — undergoing a painful medical procedure now or risking a worsening condition by delaying it — is experiencing which type of motivational conflict?

- | | |
|----------------------------------|---|
| (A) Approach-approach conflict | (C) Approach-avoidance conflict |
| (B) Avoidance-avoidance conflict | (D) No conflict, since one option must be objectively correct |

Lời giải chi tiết

Choosing between two options that are both unappealing is an avoidance-avoidance conflict, typically among the most stressful conflict structures. **(B)**.

Bài tập luyện tập

Ekman's cross-cultural research found strong universality in the production and recognition of basic facial expressions, yet cultures still differ in when and how intensely people are expected to display emotion in public. This second observation refers to:

- | | |
|------------------------------------|-----------------------------|
| (A) The facial feedback hypothesis | (C) The dopamine hypothesis |
| (B) Display rules | (D) Learned helplessness |

Lời giải chi tiết

Cultural norms governing when, how intensely, and to whom emotion may be shown are called display rules, distinct from the (largely universal) production of the expressions themselves. **(B)**.

Bài tập luyện tập

A patient with a rare tumor affecting the ventromedial hypothalamus begins overeating dramatically and gaining significant weight, despite no change in activity level or reported hunger hormone levels beforehand. Explain this outcome in terms of the brain structure affected.

Lời giải chi tiết

The **ventromedial hypothalamus (VMH)** normally functions as the brain's satiety ("hunger off") center. Damage to this region removes the normal signal that stops eating once the body has taken in sufficient food, so the patient continues eating well past the point of biological need, producing overeating and weight gain — even without any change in the peripheral hunger hormones (ghrelin, leptin, insulin) themselves, since the deficit is in how the brain *responds* to those signals, not in the signals' availability.

Bài tập luyện tập

A college student describes the following semester: a stressful family situation (identifiable stressor), appraised as overwhelming rather than manageable (primary/secondary appraisal); several weeks of pushing through with elevated energy and reduced sleep (a stage of the GAS); followed by getting sick repeatedly and feeling unable to cope with even minor setbacks (a later stage of the GAS). She eventually sees a campus counselor who uses cognitive restructuring to address her catastrophic thinking about the situation. Identify: (a) the type of appraisal initially made, (b) the two GAS stages described, and (c) the therapeutic approach used by the counselor.

Lời giải chi tiết

(a) She made a **primary appraisal** of the situation as a **threat** (rather than a challenge), and a **secondary appraisal** that her resources were inadequate to cope ("overwhelming"). (b) The weeks of elevated energy and reduced sleep while "pushing through" describe the **resistance stage** of Selye's GAS; the subsequent repeated illness and inability to cope with minor setbacks describe the **exhaustion stage**. (c) The counselor's focus on identifying and correcting catastrophic thinking is **cognitive therapy** (in the tradition of Aaron Beck), part of the broader cognitive-behavioral approach to treatment.

Bài tập luyện tập

According to Neal Miller's approach-avoidance gradient model, as a person moves physically or psychologically closer to a goal that has both appealing and unappealing features, which statement is accurate?

- | | |
|---|---|
| (A) Only the approach gradient increases; the avoidance gradient stays flat | rium point |
| (B) Both gradients increase, but the avoidance gradient typically rises more steeply at close range, producing a stable equilibrium point | (C) Only the avoidance gradient increases; the approach gradient stays flat |
| (D) Neither gradient changes with distance from the goal | |

Lời giải chi tiết

Both gradients rise with proximity to the goal, but the avoidance gradient rises more steeply at close range, creating a stable point where the two forces balance and the person tends to hover. (B).

Bài tập luyện tập

Which neurotransmitter's excess activity in certain brain pathways is most directly targeted by antipsychotic medication, and which neurotransmitter's insufficient inhibitory activity is most directly targeted by benzodiazepines?

Lời giải chi tiết

Antipsychotic medications primarily target excess **dopamine** activity (blocking dopamine receptors to reduce positive symptoms). Benzodiazepines primarily target **GABA**, the brain's main inhibitory neurotransmitter, enhancing its activity to reduce excessive arousal in anxiety.

Bài tập luyện tập

A researcher summarizes this unit by noting that motivation, emotion, and stress responses all converge on overlapping brain structures and hormonal systems. Name one structure or hormone discussed in this unit that plays a role in *both* hunger regulation and the stress response, and briefly explain its dual role.

Lời giải chi tiết

The **hypothalamus** plays a role in both systems: in hunger regulation, its lateral and ventromedial regions act as "hunger on/off" switches; in the stress response, it coordinates the autonomic and endocrine components of the fight-or-flight response by activating the sympathetic nervous system and triggering adrenal hormone release. (Cortisol is another valid answer: it is released during the GAS resistance stage and, when chronically elevated, also disrupts normal metabolic and appetite-regulating signals.)

Bài tập luyện tập

Explain how the diathesis-stress model and the biopsychosocial model relate to one another rather than competing as opposite explanations of psychological disorder.

Lời giải chi tiết

The two models are complementary rather than competing. The **biopsychosocial model** broadly identifies the *categories* of factors (biological, psychological, social) that contribute to a disorder. The **diathesis-stress model** adds a specific mechanism for *how* those factors combine over time: an underlying vulnerability (diathesis) — which may itself be biological, psychological, or shaped by early social experience — interacts with later environmental stress (which may also be biological, psychological, or social in origin) to determine whether a disorder actually emerges. In short, diathesis-stress is a more specific, mechanistic version of the general biopsychosocial framework, applied to explaining the *onset* of disorder.

Bài tập luyện tập

A teenager who has mixed feelings about attending a big social event (excited to see friends, but anxious about a recent conflict with someone who will be there) keeps changing his mind about going as the event time approaches, alternately packing a bag and then deciding to stay home. Using Miller's approach-avoidance gradient, explain this back-and-forth behavior.

Lời giải chi tiết

As the event (the ambivalent goal) draws closer in time, both his **approach** motivation (excitement to see friends) and his **avoidance** motivation (anxiety about the conflict) intensify, but the avoidance gradient rises more steeply at close range. This produces oscillation near the **equilibrium point** predicted by Miller's model — he is pulled toward going, then pushed back by rising anxiety as the event nears, alternating rather than settling firmly on one choice, which is exactly the "hovering" pattern the gradient model predicts for approach-avoidance conflicts.

Bài tập luyện tập

Self-determination theory proposes that intrinsic motivation is best supported by environments that satisfy which three basic psychological needs?

- (A) Physiological needs, safety needs, and esteem needs (C) Deviance, distress, and dysfunction
(B) Autonomy, competence, and relatedness (D) Diathesis, stress, and coping

Lời giải chi tiết

Deci and Ryan's self-determination theory identifies autonomy, competence, and relatedness as the three basic needs that sustain intrinsic motivation. **(B)**.

Bài tập luyện tập

A manager removes all independent decision-making from a team's daily tasks, provides only vague feedback so no one feels a sense of mastery, and discourages casual interaction between coworkers. Using self-determination theory, predict the likely effect on the team's intrinsic motivation and explain why.

Lời giải chi tiết

Intrinsic motivation is likely to **decline**. The manager's actions undermine all three needs self-determination theory identifies as essential to intrinsic motivation: removing independent decision-making undermines **autonomy**, vague feedback that prevents any sense of mastery undermines **competence**, and discouraging casual interaction undermines **relatedness**. With all three supports removed, team members are predicted to rely increasingly on external pressure alone to keep working, rather than genuine internal interest.

Ôn tập nhanh: Unit 1 – Cơ sở sinh học: neuron và synapse (chất dẫn truyền thần kinh, tái hấp thu), thủy não (trán, đỉnh, chẩm, thái dương), hệ thần kinh trung ương/ngoại biên, hệ nội tiết (trục hạ đồi–tuyến yên–tuyến thượng thận), di truyền và biểu sinh học, phương pháp nghiên cứu (thực nghiệm, tương quan, biến độc lập/phụ thuộc). **Unit 2 – Nhận thức:** cảm giác–tri giác (ngưỡng tuyệt đối, ngưỡng sai biệt), trí nhớ (mô hình Atkinson–Shiffrin, mã hoá, quên, trí nhớ kiến tạo), giấc ngủ (chu kỳ REM/NREM, giấc mơ), ngôn ngữ và tư duy, giải quyết vấn đề và thiên kiến nhận thức (heuristic, thiên kiến xác nhận). **Unit 3 – Phát triển và học tập:** các giai đoạn phát triển của Piaget và Erikson, gắn bó (attachment) theo Harlow/Ainsworth, điều kiện hoá cổ điển (Pavlov) và điều kiện hoá tạo tác (Skinner – củng cố/trừng phạt), học tập qua quan sát (Bandura). **Unit 4 – Tâm lý xã hội và nhân cách:** tuân theo/vâng lời (Asch, Milgram), thiên kiến quy kết (attribution), phân tâm học của Freud (id-ego-superego), thuyết nét nhân cách Big Five, thuyết nhân văn (Rogers, Maslow), tự đánh giá và văn hoá cá nhân/tập thể. **Unit 5 – Sức khoẻ tâm thần và thể chất:** động cơ (Yerkes–Dodson, tháp Maslow, ghrelin/leptin), cảm xúc (James–Lange, Cannon–Bard, Schachter–Singer, Ekman), stress (GAS của Selye, chiến-hay-chạy, chăm sóc-kết bạn), DSM-5 và các nhóm rối loạn (lo âu, OCD, PTSD, khí sắc, tâm thần phân liệt, phân ly, nhân cách, ăn uống, phát triển thần kinh), và trị liệu (phân tâm học, nhân văn, hành vi, CBT, thuốc hướng thần, ECT).

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 | sẵn 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
SAT 1590 / 1570 / 1550

AP 4–5 — Biology, Chemistry
IELTS 8.0–9.0

IB 90/100 — Economics
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 chín 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

KẾT QUẢ HỌC VIÊN

FEEDBACK PHỤ HUYNH & HỌC VIÊN AP



Phụ huynh • AP Calculus BC: 5

"Gia đình cảm ơn thầy cô đã giúp con có hành trang chín chu khi qua Mỹ. Đạt điểm 5 môn Giải tích trong thời gian ngắn là quá mãn nguyện."



Phụ huynh • AP Calculus BC

"Mẹ con xin gửi lời cảm ơn chân thành tới thầy và cả nhóm. Thời gian ôn rất ngắn nhưng con nhận được rất nhiều sự hỗ trợ."



Học viên • AP Calculus AB: 4 • Statistics: 3

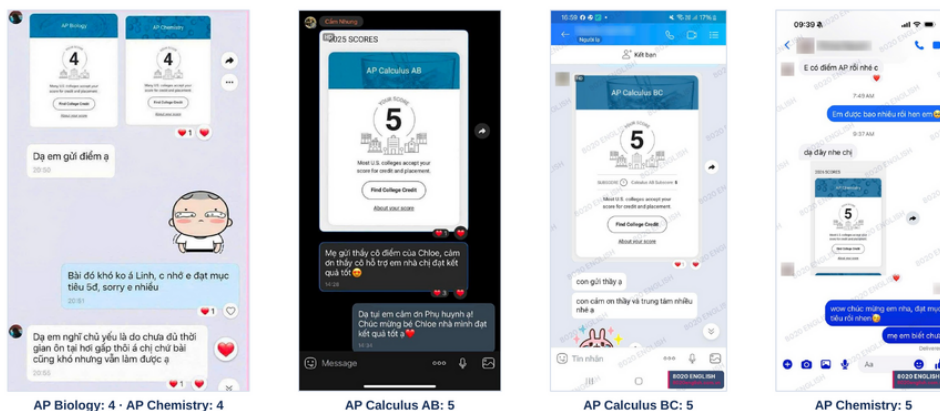
"Em cảm ơn thầy Steven đã luôn đồng hành. Nhờ thầy, em học vững hơn rất nhiều dù thời gian không dài."

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

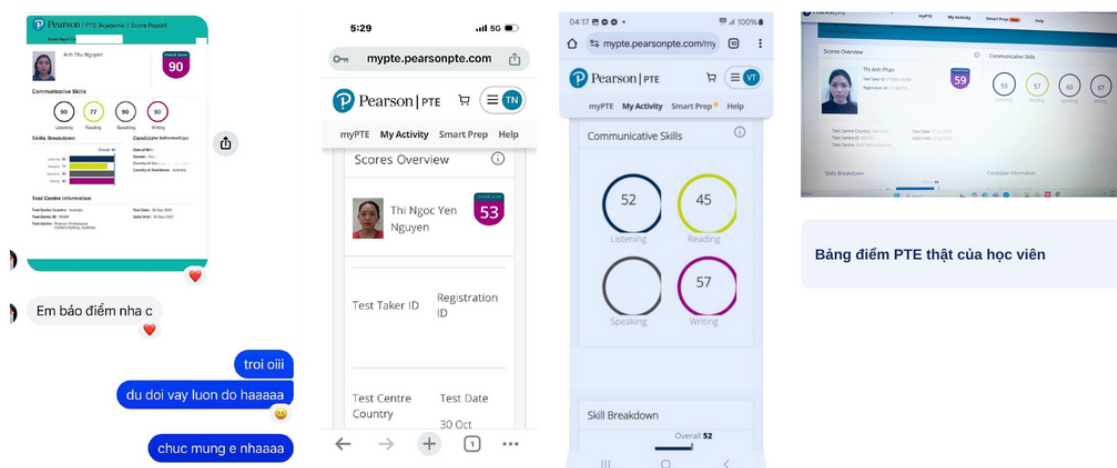
8020
ENGLISH

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

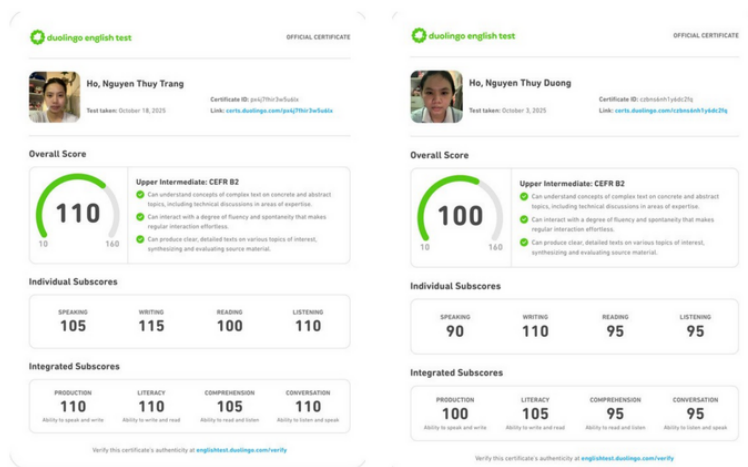
ĐIỂM SỐ PTE

8020
ENGLISH

Học viên 8020 – PTE Academic 90

KẾT QUẢ HỌC VIÊN

ĐIỂM SỐ DUOLINGO



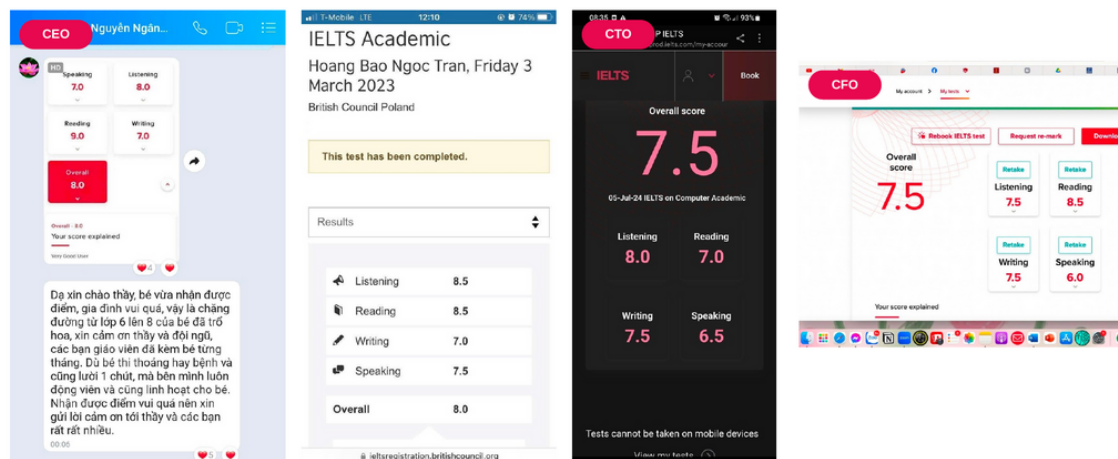
Duolingo English Test – 110 & 100

Học viên 8020 – Duolingo English Test 110 & 100

KẾT QUẢ HỌC VIÊN

THÀNH TÍCH HỌC VIÊN

Bảng điểm thi thật – chất lượng được giám sát nghiêm ngặt. Một số học viên chỉ cần 1–2 khóa để đạt kết quả mong muốn.



Học viên 8020 – IELTS 8.0 / 7.5 / 8.5 (báo điểm thật)

**8020 ENGLISH – CHƯƠNG TRÌNH QUỐC TẾ**

Test đầu vào & tư vấn lộ trình MIỄN PHÍ

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