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# AQA A-LEVEL PSYCHOLOGY

## AO1/AO3 NOTEBOOK

EVERY CORE & OPTION TOPIC IN 34 PAGES!

FIRST EXAMS IN 2027

# CONTENTS

PAPER 1



PAPER 2

## CONFIRMITY: TYPES AND EXPLANATIONS (AO1)

Types of Conformity:

- Compliance: Public agreement, private disagreement.
- Internalisation: Deep, permanent belief change.

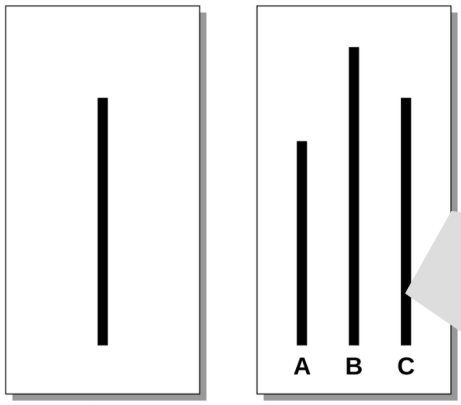
Explanations for Conformity:

- NSI: Conforming for social approval, to fit in.
- ISI: Conforming for accuracy, in uncertain situations.

### AO3:

- Bokemper et al. (2021) → during COVID, people given scientific info about mask benefits were more likely to wear masks correctly + disapprove of non-maskers → shows internalisation (genuine belief in rule), not just going along with others.
- Research Support for NSI → Asch (1951) found conformity dropped to 12.5% when answers were private, showing NSI is driven by fear of rejection.
- Research Support for ISI → Lucas et al. (2006) found higher conformity on difficult maths problems, supporting ISI as people rely on others in uncertainty.
- NSI vs ISI Overlap → Asch (1955) found dissenters reduced conformity but couldn't determine if this was due to NSI (social support) or ISI (alternative information).
- Individual Differences in NSI → McGhee & Teevan (1967) found t… with a higher need for affiliation conformed more, showing NS… people differently.

# SOCIAL INFLUE…




## OBEDIENCE: SITUATI… EX… ATIONS - AGENTIC STATE

- Agentic State → S…ifting responsibility … …cy reduces accountabilit…
- Agentic Shif… …g from autonomy t… …nder authority.
- Self-Imag… …ience lowers personal gu…
- Binding F… … Fear of ru… …edie… …aintains agency.

### AO3:

- Limited E… …ce… …7) found 16/18 nurses disobeyed … …t order, … …ng the agentic shift doesn't expla… …e.
- Agentic State & Real-Life Obedienc… …n (1986) found Nazi doctors changed gradually, not … …c shift. Staub (1989) suggested long-term exposu… … altered behaviour instead.
- Obedience or Cruelty? → Milgr… …itted other explanations. Zimbardo's study showed guar… …acted cruelly without orders, suggesting some obey due to sadistic impulses.
- Birney et al. (2024) → obedience varied 0–100% across Milgram's situational variations → suggests obedience depends on context, not just an 'agentic shift'

## VARIABLES AFFECTING CONFORMITY (AO1)

Asch's Study (1…51) → Tested conformity in a clear task, used as …ne.

- Group Si… …formity rose to 31.8% with three c… …ates but … …n leveled off.
- Unani… … dissent… …ed conformity belo… …even wit… …rent wrong an…
- Task… …asks incre… conformi… …fficacy … …it.

### AO3:

- Artificial Task → Dem… …cs limit real-world application (Fi…
- 'Child of its Time' → Perrin & Sp… …r (1980) found low UK conformity …ut later studies with …ation youths showe… …s similar to Asch, … conformity … …s on historical …
- Li… …s US male sample may no… …n (Neto, 1995) …esearch Su… …s et al. (2006) found …re conformity … …rder maths problems, …porting task difficulty as a factor.
- …tural Differences → Smith et al. (2006) found …gher conformity in collectivist cultures (37%) …an individualist cultures (25%) as collectivist societies value group harmony
- Wijenayake et al. (2020) → online Asch-style … found 78% conformed at least once (vs …%) → supports reliability + shows …y still occurs today.

## …ENCE - MILGRAM (1963)

… Procedure → 40 male participants assigned as …chers,' always giving shocks to a confederate 'Learner.' The shocks were fake, but participants were unaware.

Baseline Findings → All went to 300V, 12.5% stopped …here, and 65% continued to 450V, showing high obedience. Participants showed extreme distress (e.g., sweating, seizures).

**Situational Factors in Obedience:**

- Proximity → Obedience dropped to 40% (same room), 30% (touch-proximity), and 20.5% (instructions by phone), as distance reduced responsibility.
- Location → Obedience fell to 47.5% in a run-down office, showing prestige boosts authority but isn't essential.
- Uniform → Obedience dropped to 20% when the experimenter wore ordinary clothes, showing uniforms reinforce legitimacy.

### AO3:

- Low Internal Validity → Orne & Holland (1968) argued participants may have guessed the procedure was fake, especially in variations with extreme manipulations (e.g., 'member of the public' replacing experimenter).
- Location & Obedience → Fromm (1973) argued obedience was high because the experimenter represented science, making Milgram's findings less generalisable to real-world atrocities.
- Bickman (1974) found people were twice as likely to obey a security guard vs. a jacket-and-tie, supporting the power of uniform in obedience.
- Meeus & Raaijmakers (1986) found 90% obedience in Dutch participants under realistic conditions, suggesting findings apply across cultures + genders.
- Perry et al. (2020) → many Milgram participants identified as "play-acting" (demand characteristics) rather than truly believing shocks were real

# MEMORY

## CODING, CAPACITY AND DURATION

Coding → Baddeley (1966) > STM is acoustic (similar-sounding words confused), LTM is semantic (similar-meaning words confused).

Capacity:

- Digit Span → Jacobs (1887) > STM holds 7.3–9.3 items.
- Chunking → Miller (1956) > STM holds 7±2 items, improved by chunking.

Duration:

- STM → Peterson & Peterson (1959) > Recall of syllables dropped 80% (3s) → 3% (18s), STM lasts ~18s without rehearsal.
- LTM → Bahrick et al. (1975) > Photo recognition of classmates 90% accurate (15y) → 30% (48y), showing LTM lasts a lifetime but fades.

### AO3:

- Coding: Artificial Stimuli → Word lists lacked meaning, so findings may not apply to real-life memory.
- Capacity: Reliable Study → Jacobs' digit span test has been replicated, confirming STM's limited capacity.
- Overestimated STM → Miller (1956) suggested 7±2 items, but Cowan (2001) found ~4 items is more accurate.
- Duration: Lacks Realism → Peterson & Peterson used consonant syllables, which may not reflect everyday memory. However, some real-life info (e.g., postcodes) is also meaningless, making it partly relevant.
- High External Validity → Bahrick et al. tested meaningful memories (faces & names), making LTM duration findings more generalisable.

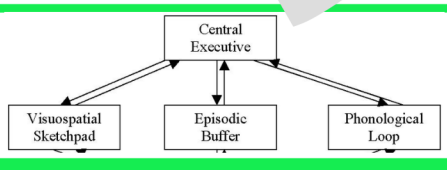
## THE WORKING MEMORY MODEL

Baddeley & Hitch (1974) STM has multiple stores for processing different information:

- Central Executive (CE) → Directs attenti… tasks, limited capacity.
- Phonological Loop (PL) → Processes s… coding):
  - Phonological Store → Stores heard words.
  - Articulatory Process → Repeats words (~2 se… capacity).
- Visuo-Spatial Sketchpad (VSS) → Handles visual/spatial info:
  - Visual Cache → Stores …
  - Inner Scribe → Track…
- Episodic Buffer (EB) (adde… from CE, PL, and VSS before … LTM.

### AO3:

- Dual-Task Performance → Suppor… et al. (1975) found participants str… visual tasks but … with a visual ana… supporting se… STM stores.
- KF Case St… …nce for Separate St… Shallice &… …on (1970) found KF had … verbal ST… …ntact visua… …ting …'s distinct … …ents.
- Case Stu… …ain damage … …, makin… deficits unc… …generalisab…
- Central Executive … Too Vague – Es… …Damasio (1985) found EVR had good reas… …poor decision-making, suggesting … …re complex than WMM claims.




## THE MULTI-STOR… …EL O… …MORY

(Atkinson & Shiffrin, 1968) → …ores: sen… register, STM, LTM; info moves vi… …earsal.

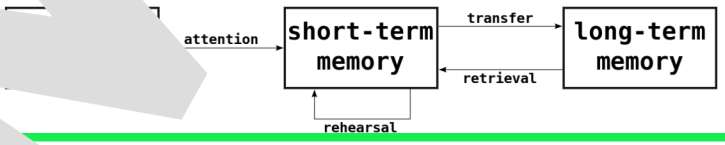
- Sensory Register → Brief duration … …ality-specific coding (e.g., iconic = visual, ech… …on moves info to STM.
- STM → Limited capacity (7±2), duration (~18s), … coding. Maintenance …arsal keeps info in STM; prolonged …earsal transfers it …
- LTM → Unli… …duration, seman… …g. Info can be retrieved

### AO3:

- Suppo… …Baddeley … = acoustic, LTM = sem… …eparate s… …2009) → STM tasks a… …ex; LTM tasks … …e hippocampus → …rain a… …pports separate …M + LTM stores (MSM).
- …cudy Evide… …M (Scoville & Milner, 1957) lost the ability …new LTM … …ould recall old memories > Supports MSM as …are … …te.
- … → Baddeley & Hitch (1974) proposed working mem… …sting STM has multiple components > Types of LTM (epis… …semantic) show LTM is not a single store. …Multiple STMs … Warrington, 1970) had poor verbal … normal vi… …uggests STM has separate …

…1972) found deep processing improves LTM …ray… …arsal > Challenges MSM focus on rehearsal.

### …LTI-STORE MODEL




## …NATIONS FOR FORGETTING: …ERENCE

Proac… …terference (PI) → Old information interferes with new (e.g., …any student names in past years makes recalling current … names harder).

…erwood (1957) → Found participants recalled earlier word lists better than later ones, showing PI.

Retroactive Interference (RI) → New information disrupts old (e.g., learning many new student names makes recalling past students' names harder).

- Müller & Pilzecker (1900) → RI was worse when an intervening task was given between learning and recall.

Effect of Similarity → Interference is stronger when memories are similar.

- McGeoch & McDonald (1931) → Participants learned word lists; those with synonyms showed the most forgetting, supporting interference over decay.

### AO3:

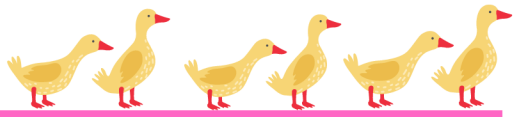
- Artificial research: Interference studies use word lists, lacking real-world relevance, so findings may not apply to everyday memory.
- Limited explanation: Interference needs similar memories, which is rare; Baddeley & Hitch (1977) found rugby players' recall of team names was affected, but this was an unusual case, suggesting retrieval failure may explain forgetting better.
- Memories aren't erased but temporarily inaccessible; Ceraso (1967) found recall improved after 24 hours, showing interference effects fade over time.
- Real-world use: Danaher et al. (2008) found competing adverts impaired recall, but repeating ads in one day reduced interference.

## ANIMAL STUDIES: LORENZ

- Imprinting → Lorenz (1935) split goose eggs into two groups: one hatched naturally with their mother, the other in an incubator where they first saw Lorenz. The incubator group followed Lorenz, while the control group followed their mother.
- Critical period → Must occur within hours after birth; otherwise, no attachment forms. Imprinting is irreversible.
- Sexual imprinting → A peacock raised with tortoises later courted tortoises, showing imprinting affects mate preferences.

### AO3:

- Regolin & Vallortigara (1995) found chicks imprinted on moving shape combinations, supporting Lorenz's idea of an innate imprinting mechanism. Guiton (1966) showed chickens imprinted on rubber gloves, confirming imprinting occurs in a critical window.
- Criticism → Guiton later reversed imprinting, suggesting it's flexible, not irreversible.
- Generalisability → Mammalian attachment is more complex and emotional, limiting Lorenz's findings to humans.



## EXPLANATIONS: LEARNING THEORY

- Classical conditioning → Food (UCS) produces pleasure (UCR) → Caregiver (NS) becomes associated with food → Becomes a conditioned stimulus (CS) producing pleasure (CR) → Attachment forms ('mother love').
- Operant conditioning → Baby cries → Rewarded with comfort (positive reinforcement) → Caregiver soothed when crying stops (negative reinforcement) → Mutual reinforcement strengthens attachment.

## ANIMAL STUDIES: HARLOW

- Contact Comfort → Harlow (1958) reared 16 monkeys with wire 'mothers' (cloth-covered vs. plain-wire) → All preferred the cloth r…r, showing comfort > food for attachment.
- Maternal Deprival…ire-only monkeys grew aggressive, fear…struggle…mating/parenting → Some attack…offsprin…
- Critical Perio…hment r…n within …0 days → After this, e…e irrever…
- Recovery → Soci…chree mo…ped deprived monkeys re…

### AO3:

- Generalisability to humans → Rhe…are more similar to humans than Lorenz's bira…man at…ment is still more complex, limiting …neralisation.
- …in surrogate design (e…head shape) may …attachment, red…idity.
- Hari…los social …identify child risk factors (r…form…reeding programs.

## …THEORY

- Foo…y → Harlow's mon…eys show…ort mattered more; huma…es support caregiver sen…over feeding. Lorenz's …rinted on the first …biect
- …erson (1964) found im…the most respon…r, not the one …ho fed the…abella et al. …linked synchrony to …uality, not food.
- …ry is stronger → Expla…y attachments form and their benefits (e.g., …rotection), unlike learning theory.

## EXPLANATIONS: BOWLBY'S TH…

- Monotropy → Bowlby (1958, 1969) argued infan… key attachment (primary figure), usually the mothe… of continuity: consistent care = better attachment → La… accumulated separation: prolonged separation = negative effects.
- Social releasers & critical… smiling) trigger caregiving… years): failure to attach = …ulties.
- Internal working model → Fir…ment fo…ental template for future relationship…at…t = trust, poor attachment = relation…

### AO3:

- Monotropy ch…d → Dagan et al. (…rge body of research…babies form multi…ments, and the o…uity of all these relation…icts later dev…c better th…ain …ver
- Social re…support →…/197…cold caregiver…ore h…→ infants became d…ess, s…heir importance.
- Internal work…→ Bailey et…7) found mothers with poor attachment to…ad poorly attached babies, supporting at…atterns passing down.
- Sensitive vs. critical period → K…et al. found attachments could form outside the 'critical period' → led to the preferred term 'sensitive period.'
- Continuity hypothesis → Sroufe et al. (2005) found early attachment predicted later social competence, supporting Bowlby's link between early and later relationships.

## AIN…ORTH'S STRANGE SITUATION (TYPES)

- Ainsworth & Bell (1970) used a controlled observation with …nt episodes to assess attachment via proximity-seeking, …cure base, stranger/separation anxiety, and reunion response. Procedure → Caregiver & baby enter → Stranger interacts → Caregiver leaves → Reunion → Caregiver leaves again → Stranger returns → Final reunion.
- Secure Type B (60–75%) → Explore with a secure base → Moderate distress when caregiver leaves → Easily comforted on return.
- Insecure-avoidant Type A (20–25%) → Explore freely → Little distress when caregiver leaves → Avoid reunion contact.
- Insecure-resistant Type C (3%) → Clingy → High separation/stranger anxiety → Seek comfort but resist it on reunion

### AO3:

- Madigan (2023) meta-analysis (285 studies, 20k+ pairs) → insecure attachment linked to later aggression + mental health problems; secure attachment linked to + outcomes
- Developed in the US/UK, the test may not apply to other cultures. Takahashi (1990) found Japanese infants showed high separation anxiety due to cultural norms, not attachment differences.
- Incomplete → Main & Solomon (1990) identified a fourth type, insecure-disorganised, missing from Ainsworth's model.
- Main & Weston (1981) found that infants behaved differently depending on which parent was present, suggesting the Strange Situation may measure relationships rather than attachment type.

## DEFINITION 1

**DEVIATION FROM IDEAL MENTAL HEALTH** = 🔹 Jahoda (1958) identified six criteria for ideal mental health: positive self-attitude, self-actualisation, integration (coping with stress), autonomy, accurate perception of reality, and mastery of the environment (relationships, work, problem-solving).

🔹 Absence of these criteria = abnormality. The more missing, the more severe the mental disorder.

### AO3:

- Jahoda's criteria cover most reasons for seeking mental health help, making it a useful checklist for assessment.
- Unrealistic → Few meet all six criteria; hard to measure (e.g., personal growth).
- Cultural bias → Self-actualisation valued in individualist but not collectivist cultures.

## DEFINITION 2

**DEVIATION FROM SOCIAL/CULTURAL NORMS** → Abnormal if it violates social norms (implicit or explicit).

- Cultural Relativity → Norms vary across time/cultures (e.g., homosexuality once abnormal in the UK, still illegal in some countries).
- Implicit vs Explicit Norms → Implicit (e.g., politeness) → breaking may cause social rejection Explicit (e.g., disorderly conduct) → legally enforced.

### AO3:

- Real-world application → Used in psychiatry, e.g., antisocial personality disorder (recklessness, aggression, deceitfulness) + schizotypal personality disorder ('strange' thinking/behaviour).
- Context matters → Wearing little is norm… on a beach but deviant at a formal event.

## DEFINITION 3

**FAILURE TO FUNCTION ADEQUATELY** = inability to cope with daily life (e.g., hygiene, work, relationships).

- Rosenhan & Seligm… (1989):

• Ignores social no… (e.g., no eye conta…
• Experiences severe distress.
• Acts irrationally or dangerously.
→ WHODAS measures functioni…a in self-care, social li…k.

### AO3:

- Thres… Identifies v… i… …ntion is v… …experienc… …issues, … Risk of … → Non-sta… lifestyle… …living … …y be … …ssed as

## DEFINITION 4

**STATISTICAL INFREQUENCY** → Defines abnormality based on rarity in the population.

Example: IQ & IDD → IQ is normally distributed → aver… = 100 → <2% score belo… classified as ab… → risk of i…al disabi… …r (IDD).

…orders … of … had a com… …er in the past wee… …d not → statistically in… …nt.

### AO3:

- Real… …pplication → Use… …cal diagnosis (e… IQ < 70, Beck … …on Inventory: BDI > … assess severity. …IQ (130+) is uncommon … desirable → rarity ≠ abnormality.
- Subjectivity of cut-off points → No clear distinction between normal/abnormal (e.g., sleep issues: some say <6 hours, others <5).

# CLIN… …SYCH…OLOGY & ME… …EALTH

## PHOBIAS CHARACTERISTICS

- DSM-5 Types → Specific (spiders, heights) → Social (public speaking) → Agoraphobia (open/public spaces).
- Behavioural → Panic (crying, freezing) → Avoidance (avoiding stimulus, daily life disruption) → Endurance (enduring fear but staying).
- Emotional → Anxiety (high arousal, no relaxation) → Fear (intense, immediate) Unreasonable Response (excessive vs actual threat).
- Cognitive → Selective Attention (fixation on stimulus) → Irrational Beliefs ("I must l… k smart") → Co… Distortions … …mulus as worse … …ity).

## DE… CHAR… …TICS

- DSM-5 → I… …short-term) → Persistent (lo… …uptive Mood Dysregulation (ch… … Premenstrual Dysphoric (hormonal … …on). …haviour… → Low activit… …drawal) or … → Sle… eating … …ia, weight change) … …rm (verbal, …sical).
- …tiono… …mood (sad, empty) → Anger …/… …gression, self-harm) → Low …elf-loathing).
- C… …oor focus (struggle to con… …decide) → Negative bias (dwelling on ba… …good) → Black-and-white thinkin… …ist).

## OCD CHARACTERISTICS

- obsessions (thoughts) + compulsions (behaviours).
- Behavioural

→ Compulsions: Repetitive (e.g. handwashing), reduce anxiety.
→ Avoidance: Stay away from triggers (e.g. dirt).

- Emotional

→ Anxiety & distress: Obsessions = fear, compulsions = temporary relief.
→ Depression: Low mood, loss of enjoyment.
→ Guilt & disgust: Directed at self/external.

- Cognitive

→ Obsessive thoughts: Recurring, distressing (e.g. contamination).
→ Coping strategies: E.g. praying, can disrupt life.

## BEHAVI… …PLAINING PHOBIAS

- Two-Proce… …r, 1960) …s acquired via classical conditioning → maintained by operant conditioning.

▶ Classical cond… …atson & Rayn… …): 'Little Albert' study—White rat (NS) + loud noise (UCS) → fear (UCR). Rat becomes CS → fear (CR) generalises to similar o…

▶ Operant conditioning: Avoidance … reinforces fear → prevents extinction, explaining why phobias persist.

### AO3:

- Supports exposure therapies → …enting avoidance reduces anxiety and eliminates phobia (e.g., systematic desensitisation).
- Seligman (1971): Certain phobias (e.g., snakes) are innate, not learned → challenges two-process model.
- De Jongh et al. (2006): 73% with dental phobia had trauma → supports classical conditioning in phobia development.
- Sue et al. (1994) found some phobics recall a specific traumatic event, supporting classical conditioning in phobia development.
- Graham (2021) → phobics overestimated spider size vs controls → shows cognitive distortions influence phobias → behavioural (avoidance-only) explanation is incomplete.

## LEARNING APPROACH 1: BEHAVIOURIST

- Behaviour learned via experience; ignores thoughts.
- Lab studies for control & objectivity.
- Classical Conditioning – Pavlov

→ Learning via association (Pavlov, 1927).
→ Dogs: bell (NS) + food (UCS) → salivation (UCR).
→ After repetition: bell (CS) → salivation (CR).

- Operant conditioning (Skinner 1953):

Learning via consequences → + Reinforcement (reward), - Reinforcement (remove unpleasant), Punishment (decrease behaviour)

### AO3:

- Well-controlled research → Lab studies (e.g., Skinner) remove extraneous variables → high scientific credibility.
- → Counterpoint: Oversimplifies learning, ignores cognitive/social factors.
- Real-world application → Used in therapy (e.g., SD for phobias, token economy in institutions) → practical value.
- Humans have free will, unlike Skinner's rats/pigeons → limits generalisability.
- Reductionist → Focuses only on conditioning, ignoring cognitive/emotional factors.


## LEARNING APPROACH 2: SOCIAL LEARNING

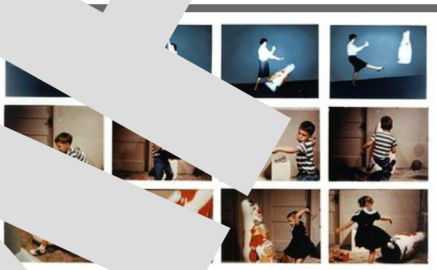
learning via observation & i tation

- → Direct (reinforcemen rect (vicarious reinforcement)
- → Mediational proc cention, ntion, reproduction, motivation
- → Identification: role mod similar traits
- Bandura et al. ( nt

→ Procedure: Childre /non-ag figures with a Bobo doll
→ Findings: Aggressive figure on; non-aggressive figure → little agg
→ Vicarious reinforcement → more imita re was rewarded

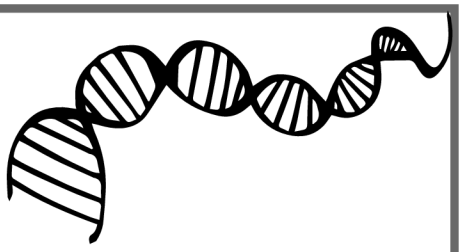
### AO3:

- Sl ing better than be ism as it includ rocesses (at retention, motivation
- SLT overlooks mirror neurons, explain ing.
- l. (2006) ng relatable models uasive—sugge SLT applies to marketing and att ange.
- Arunran et al. (2018) → students identified more with ad eroic media characters ("wannabe effect").



# APPROACHES IN PSYCHOLOGY

## BIOLOGICAL APPROACH



- Behaviour = biology (brain, genes, neurochemistry).
- Neurotransmitters → Low serotonin (OCD), high dopamin ia).
- Genetics → Twin studies sh MZ concordance → gene ence.
- Genotype vs. Phenotype → traits
- Evolution → Natural sele
- Cognitive Neuroscience → cognition & disorders.

### AO3:

- Scientific methods → Biological se ve methods (e.g., fMRI, EEG) to study brain activity. These techniques enhance validity and reliability.
- Real-world application → Research smitters has led to effective drug treatments for mental disorders (e.g., antidepressants depression).
- Reductionist sed for oversimplify iour to genes and chemicals, ignoring cognitive and emotional factors.
- Reductioni sed for reducing beh enes/neurochemicals, ignoring cognitive, emotional, and environmental influences
- Can lead rimination / creen for criminal predisposition)

## COGNIT CH

- Internal Me es → Studied rence as they can't be observed. Mind = info processor (input → process → output). Models (e.g., WMM, MSM) represe on.
- Schemas → Mental frameworks f ence help process info fast but can cause errors (e.g., stereotypes).
- Computer Model → Mind wo mputer (RAM = working memory, hard drive = LTM). Basis for AI.

### AO3:

- Uses lab studies for objective data + cognitive neuroscience for biological basis.
- Real-world app → Used in CBT, AI, eyewitness testimony → improves daily life.
- Machine reductionism → Compares mind to computer but ignores emotion/motivation (e.g., anxiety affects memory).
- Low ecological validity → Uses artificial tasks (e.g., word lists) → limits real-world application.

## CORRELATIONS

- Measures relationships between continuous variables (shown on a scattergram).
- Types: Positive (+), Negative (-), Zero (no link).
- Strength: Correlation coefficient (-1 to +1); closer to ±1 = stronger.

AO3:

- Useful when IV can't be manipulated, but no causation.
- Intervening variables may explain findings.
- Validity issues (e.g., sample, operationalisation).
- Not always linear (e.g., curvilinear trends).

## MATH SKILLS

- Fractions: 40/120 = 1/3, Percentages: 5% = 1/20, Decimals: 0.05 = 5%.
- Ratios: 2:3 → 20 Type A, 30 Type B (in 50).
- Estimation: Round to check accuracy.
- Significant Figures: 52.777% → 52.8% (3 sf).
- Standard Form: Express large/small numbers using powers of 10 (e.g., $8.6 \times 10^9$).
- Symbols: ≈ (~) approx., < (less), > (more), ≤ (≤ equal), ∝ (proportional)

## PROBABILITY

- Test if results are due to chance (p-value). Significance means findings likely apply to the population.
- $p < 0.05$: Less than 5% chance results are random. $p < 0.01$: More stringent (e.g., drug testing).
- Errors: Type I (false positive, rejects true null), Type II (false negative, accepts false null).

## QUANTITATIVE DATA DISTRIBUTIONS

- Graphs:

→ Bar Charts (discrete/nominal data).
→ Histograms (continuous data, bars touch).
→ Frequency Polygons (better for comparisons).
→ Line Graphs (continuous data, time series).
→ Scattergrams (correlations).

- Distributions:

→ Normal: Symmetrical, mean = median = mode, 68.26% within 1 SD.
→Positive Skew: Few high scores pull mean > median > mode.
→ Negative Skew: Few low scores pull mean < median < mode.

## PSYCHOLOGY & EC

- Behavioural Economics: Studies cognitive, emotional factors in dec
- Irrational Thinking (Kahneman):
- Availability Heuristic: Overestimate ev to media.
- Framing Effect: Choices depend on gain/los framing.
- Applications: Tax, b s, policy, juries.

AO3:

- Social Influen harmful behaviours (e.g., smokin
- Memory Re mproves eyew accuracy.
- Attachmen Than

## NON-PARA IC TESTS

- Wilcoxon (Related): Ordinal+ data, conditions, difference hypothesis, co values.
- Mann-Whitney (Unrelated): Ordinal+ data, independent groups, difference hypothesis, compare U values.
- Tip: Wilcoxon = Related (Mr & Mrs), Mann-Whitney = Unrelated (Mr & Ms).

## SELF-REPORT TECHNIQUES

- Questionnaires: Predetermined questions, collect quantitative (stats) or qualitative (experiences) data.
- Structured Interviews: Set questions, no deviation.
- Unstructured Interviews: Flexible, adapts to responses.

AO3:

- Validity Issue: Responses may be unclear or biased (social desirability).
- Bias: Questionnaires may lack representativeness interviews risk interviewer bias.
- Analysis: Structured = easy to analyse; unstructured = richer data but harder to process.

## OTHER RESEARCH METHODS

- Mixed Methods: Combines observation terviews, experiments.
- Systematic Review: Uses databases studies.
- Meta-Analysis: Analyses effect size acro for trends.

Other Methods:

- Longitudinal: Tracks change
- Cross-Sectional: Compare point.
- Cross-Cultural: Compa ours ac cultures.

AO3:

- Meta-Analysis St mple i validity.
- Limitation: Study desig comparability.

## CENT NCY AND D

- Central Tend (u sensitive), Medi ignor extremes), Mode ( on).
- Dispersion: Range (n SD ad from mean).

- M e, but distorted by extre only).
- Median/M skewed/ordin nominal).
- SD: Accurate spread, b d by for skewe rdinal)

## INF STATS

- Te Depends on design (i nt, repeated, correlational)
- measurement (nominal, interval).
- etric Tests: Require interval ormal distribution, similar more powerful than non-
- U s: Compare calculated vs. crit alue, considering $p < 0.05$, hypot sis type, sample size (N), egrees of freedom (df).

## L-SQUARED TEST

ests difference/association in nominal, independent data.
Uses contingency tables, compare $\chi^2$ to critical value (df = (rows -1) × (columns -1)).

## JOURNALS

- Abstract: Study summary. Intro: Context. Method: Replication details. Results: Stats & themes. Discussion: Findings & applications. References: Sources.

## SELF-REPORT DESIGN

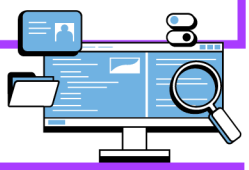
- Closed Qs: Fixed responses (quantitative, easy analysis).
- Op Qs: Detailed responses (qualitative, h alysis).
- s: Must be clear, recorded, avoid oor effects

ed Qs: Mau wers, reducing ity.
Tim ng, brief r rification f

## CASE STU DING IN CONTENT A LYSIS

- Case Studies: In-de th, longitudinal, uses multiple methods. M. Phineas Gage, London Riots).
- tent Analys observation of g., T , transforming cative data.

A
- Case data for rare cases, but low generalisa
- Content Analysis: High ecological validity, but observer bias.



## F DATA

- Qua e: Numerical, from experiments/surveys.
- Qualitative: Descriptive, can be converted to numbers.
- ry: First-hand data for a study.
- dary: Pre-existing data (e.g., gov stats).

- Quantitative: Easy analysis, but oversimplifies.
- Qualitative: Rich detail, but harder to analyse.
- Primary: High control, but costly/time-consuming.
- Secondary: Cheap/easy, but may lack validity.

## SIGN TEST

- For paired/related data
- State hypothesis (directional = one-tailed, non-directional = two-tailed).
- Assign signs (+/-) for score differences.
- Calculate S (less frequent sign).
- Compare S to the critical value for significance.

## PEER REVIEW

- Ensures validity, originality, quality before publication.
- Process: Experts review → Accept, revise, or reject.
- Prevents false data, allocates funding, assesses universities.

AO3:

- Can still allow fraud (e.g., Burt's IQ study).
- Expert shortage risks bias or poor reviews.
- Publication bias favours positive results.
- False research stays public, influencing policy.

## PARAMETRIC TESTS

- Related t-Test: Interval data, related conditions, difference hypothesis, uses df = N - 1, compare t values.
- Unrelated t-Test: Interval data, independent groups, difference hypothesis, assumes equal variances, uses df = $N_1 + N_2 - 2$, compare t values.

## SPEARMAN'S RHO/PEARSON'S R

- Spearman's Rho: Ordinal data, related scores, tests correlation, compare rho values.
- Pearson's r: Interval data, related scores, tests correlation, uses df = N - 2, compare r values.

## GENDER BIAS

- Gender Bias → The tendency to treat one gender differently in research.
- Alpha bias → Exaggerates gender differences, often devaluing one sex (e.g., Freud's (1905) theory suggests weaker female superego).
- Beta bias → Ignores/minimises differences between genders.
- Fight-or-flight response largely based on male research; later studies (Taylor et al., 2000) found females exhibit "tend-and-befriend."
- Androcentrism → Male-dominated research misinterprets female behaviour (e.g., PMS seen as a disorder rather than hormonal fluctuation).

### AO3:

- Rosenthal (1966): Male experimenters were friendlier to females → Female participants performed better → Data collection may distort gender differences.
- Beta bias promotes equality but ignores biological differences (e.g., pregnancy) → Hare-Mustin & Marecek (1988): Gender differences should still be considered.
- Formanowicz et al. (2018) analysed 1000+ articles → gender-bias research less funded + published in lower-status journals.
- Women underrepresented in academia (Murphy et al., 2014) → Male-dominated research may disadvantage women.

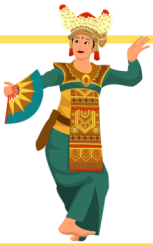
## CULTURAL BIAS

- Cultural bias → Judging others based on one's own culture.
- Henrich et al. (2010) → Found 68% of psychology research from US, mostly WEIRD (Western, Educated, Industrialised, Rich, Democratic) samples.
- Ethnocentrism → Viewing culture as 'normal' and superior.
- Ainsworth & Bell (1970) – Strange Situation: Defined secure attachment based on norms; Japanese infants being incorrectly labelled insecure → cultural differences in child-rearing (T…)
- Cultural relativism → …studied in context. / Etic approach → Assumes u… Ainsworth. Emic approach → Recognises cultural…

### AO3:

- Many influential studies (e.g., Asch, Milgram) culturally biased. R…ations in collectivist cultures found higher confor… individualist cultures (e.g., Smith & Bond, 1993).
- Dov Cohen …cross-cult…chology challenges ethn… orpo…mic (inside culture) and …iversal) …
- …methods … (1998) found 66% of …studies were …n. Henrich et al. (2010) …US … were 4000x mo…kely to be studied than …n-Wester…
- …mic = cult… …pecific findings / Etic = universal behaviour … Buss'… …untry mate preference study).

# ISSUES & DEBATES



## FREE WILL & DETERMINISM

- Free Will → Humans make conscious choices despite biological/environmental influences (Mo…
- Determinism → Behaviour shaped by in… forces.
- Hard → All behaviour has a cause (fatalis… …ill.
- Soft (James, 1890) → Behaviour influenced bu… conscious decisions.

Types of Determinism

- Biological → Behaviour is controlled by genes, hormones, and the nervous system (e.g… …ress response). Example: IGF2R gene linked to inte…
- Environmental (Skinner) … behaviour shaped by cona…
- Psychic (Freud) → Behaviour … unconsci… conflicts and childhood experie…
- Scientific Emphasis - Psychology … nas a cause, using controlled experiment… …usal links.

### AO3:

- Twin studie… …% concordance for i… but only 40% …ession, suggesting environ… influence…
- Determin… …an excus… …iour → Mobley (1981) cl… …sentenced to death, sh… …of det….
- Libet et al. (… …rain activit… …ded conscious movement decisions, but critics arg… …ows "readiness to act" rather than a …e will.
- Counterpoint to Libet → Awa… …ecision occurring after brain activity does not … decision wasn't made consciously; brain activity …y reflect preparation.

## …TURE …TURE DEBATE

- …re → Behaviour is hereditary (Descartes). Concordance …stimate genetic influence (e.g., 40% for MZ twins vs. 7% …ins in schizophrenia).
- …mpiricists (Locke) argued we are born a blank …aviourists suggest classical/operant conditioning shapes behaviour.
- Interactionist Approach → Behaviour results from genes (nature) and environment (nurture). Bowlby (1958) linked …chment to parental care, while Kagan (1984) argued …perament also plays a role.
- …thesis-Stress Model → Genetic vulnerability (diathesis) triggers disorders only with environmental stressors (e.g., OCD may require life experiences to develop).
- Epigenetics → Environmental factors (e.g., trauma, diet) can alter gene expression, passing changes to future generations.

### AO3:

- Adoption studies → Meta-analysis (Rhee & Waldman, 2002) found 41% of variance in aggression was genetic / Shows how nature and nurture can be separated.
- Epigenetics → WWII Dutch Hunger Winter: famine led to low birth weight babies, who later had higher schizophrenia rates (Susser & Shang Lin, 1992) / Shows how environment can influence gene expression across generations.
- Diathesis-stress model → Genes for schizophrenia only lead to disorder if triggered by environmental stressors / Supports the need to consider both biological and environmental factors.
- Neural plasticity → Maguire et al. (2000) found taxi drivers' hippocampi changed with experience / Blakemore & Cooper (1970) showed kittens' brains adapted to a restricted environment / Demonstrates nurture shaping nature.
- Interactionist approach → Phenylketonuria (PKU) is a genetic disorder, but a restricted diet can prevent brain damage / Supports nature and nurture interaction.
- Laura Ihde et al. (2024) → fat cells "remember" obesity via epigenetic changes, increasing weight regain after dieting → shows nature–nurture interaction has real-world relevance

# GENDER

## ROLE OF CHROMOSOMES & HORMONES

- 23rd pair = sex chromosomes → XX (female) | XY (male) → sperm (X/Y) determines sex → SRY gene (Y) triggers testes development (~6 weeks) → testes release testosterone | no SRY → ovaries develop (default pathway)
- All embryos start same (gonads + ducts) → testosterone present = male genitalia develop | absent = female internal organs develop
- Hormones act prenatally + at puberty →
- Testosterone (↑ XY) → male genitalia + brain masculinisation + puberty: deeper voice, facial hair, muscle ↑
- Oestrogen (↑ XX) → female secondary sex characteristics + menstrual cycle
- Oxytocin (↑ XX) → bonding + childbirth + breastfeeding

**AO3:**

- Wang et al. (2000) → 227 hypogonadal men given testosterone for 180 days → ↑ muscle mass + libido + sexual function → shows testosterone has direct causal role in male development.
- CAIS → XY produce testosterone but body insensitive → develop female phenotype → shows hormones alone ≠ determine sex.
- Swyer syndrome / SRY deletion → XY develop ovaries + female characteristics → Y chromosome ≠ automatic male outcome.
- Phoenix et al. (1959) → early androgen exposure "organises" brain → long-term masculinisation → strong evidence for prenatal hormone effects.
- Hyde et al. (2019) → brain differences often small/overlapping ("brain mosaic") + environmental factors influence developme… biological explanation may be reductionist.

## DIVERSITY IN SEX

**Androgen Insensitivity Syndrome (AIS)**

- XY + androgen receptor mutation → testosterone pres… body cannot respond →
- CAIS → female external genitalia, undescended testes, no uterus/ovaries
- PAIS → mixed / ambiguous genitalia

→ shows sex development depends on hormone …nsitivity, not just chromosomes.

**Klinefelter's Syndrome** (XXY, ~1 in 600 ma…

- Physical → ↓ testosterone → infertility, le… broader hips, breast tissue (gynaecomastia),
- Psychological → language difficulties, low confide… …or memory & problem-solving

**Turner's Syndrome** (XO, ~1 in 2000 females)

- Physical → underdeveloped ovaries → no periods (amenorrhoe… infertile, short, webbed neck, …
- Psychological → good verbal … …tial skills, social difficulties

**AO3:**

- DSD research → contributes to n… …ture de… …g. TS girls show higher verbal ability → …hro… differences may influence behaviour … …cial treatment may also shape outcomes → … biology alone.
- Sampling issue… DSD cases mild/undi… …research often based … …evere cases → psycholo… …s may be exaggerat… …et al.) → limits …lidity of c… …ls.
- CAIS brai… …ce (Hamann… …omen… CAIS show brain acti… …atterns … → su…ports organisat… …mones influence brain deve… …mosome
- Ethical / soci… → historical … …rgeries (Money; David Reimer case) challenged → shift … …autonomy + informed consent → shows biologic… …opment has major social + legal impact (challeng… …ary).

## GENDER IDEN…ES & …

- Gender identity → pr… …nse of ge… …y ≠ biological sex → shaped by social n… …roles
- Binary gender ide… …ale/female masculinity & feminin… …pes (e.g. a… …s gentle)
- Non-binary → identity ≠ exclusiv… …neither / outside binary → varied pronouns (tr…
- Gender fluid → identity not fixed → may c… …or context → flexible expression

**Bem Se… …tory (BSRI)**

- Be… …flexibility = psychol… …lth → introduced androgy… … + high femin… …)
- BSRI → 60 t… …20 fe… …neutral) → individuals rated …

M… …M, low F)
…w M)
…+ high F)
…both)

**AO3:**

- BSRI ahe… …time → challenged strict gender binary → …du… …ogyny (high M + high F) → influenced modern, more … …of gender identity.
- …reliability → piloted on 900+ students → traits b… …f-descriptions → follow-up showed test–retest reliabi… …ntific credibility.
- Cultural / te… …based on 1970s US stereotypes → …sculine/femin… …its change over time + across cultures → may … …ral validity.
- … hypothesis (Hyde, 2005) → 46 meta-analyses → M… …nces small/overlapping → challenges strict binary view o… …its → supports spectrum model.
- …ocialisation …uence (SLT) → 412 Italian children → widespread …erence to gender stereotypes → shows binary roles reinforced …h culture → gender not purely biological.

## BI… …GICAL EXPLANATIONS OF GENDER DEVELOPMENT

…iological view → sex + gender closely aligned → chromosomes + …ones shape physical + psychological traits → masculinity/femininity …ely innate.

Chromosomes → XX (female), XY (male) → influence not just physical traits but behaviour (e.g. KS, TS linked to social/cognitive differences).

Hormones influence behaviour:

- Testosterone (↑ males) → competitiveness, aggression, risk-taking → prenatal exposure linked to more 'masculine' play + interests.
- Oestrogen (↑ females) → mood regulation, empathy, nurturing → menstrual cycle fluctuations affect emotion + social interaction.
- Oxytocin → bonding + emotional connection → higher in females → linked to stress response differences + caregiving behaviour.

**AO3:**

- Money & Reimer → David Reimer raised female after surgery but later reverted to male identity → Reiner & Gearhart (2004): 8/14 reassigned XY males later identified as male → suggests biological factors strongly influence gender identity over socialisation.
- Girls with CAH (↑ prenatal androgens) show more masculinised play + behaviour and sometimes ambiguous identity → supports role of prenatal hormones in shaping gender development.
- Dabbs et al. (1987) → ↑ salivary testosterone linked to violent crime; Van Goozen et al. (1995) → hormone therapy changed aggression in trans individuals → shows hormones can modulate gender-related behaviour (plasticity).
- Hyde (2005) + Elliot (2021) → most sex differences small/overlapping; brain differences often trivial → challenges idea of strictly dimorphic "male vs female" brains.
- Evidence for oestrogen/oxytocin often modest or based on animal studies → behaviour heavily shaped by culture/socialisation → hormones alone may be reductionist explanation.

## SELMAN'S LEVELS OF PERSPECTIVE-TAKING

- Stage 0 (3–6 yrs) Egocentric → Struggles to see others' perspectives.
- Stage 1 (6–8 yrs) Social-Informational → Aware of different perspectives but assumes it's due to lack of knowledge.
- Stage 2 (8–10 yrs) Self-Reflective → Can put themselves in someone else's position but only o… erspective at a time.
- Stage 3 (10–12 yrs) Mutual → Can consider two viewpoints at once & imagine how a third … es the situation.
- Stage 4 (12–15+ yrs) Societal → Decisions consider wider social conventions & values.

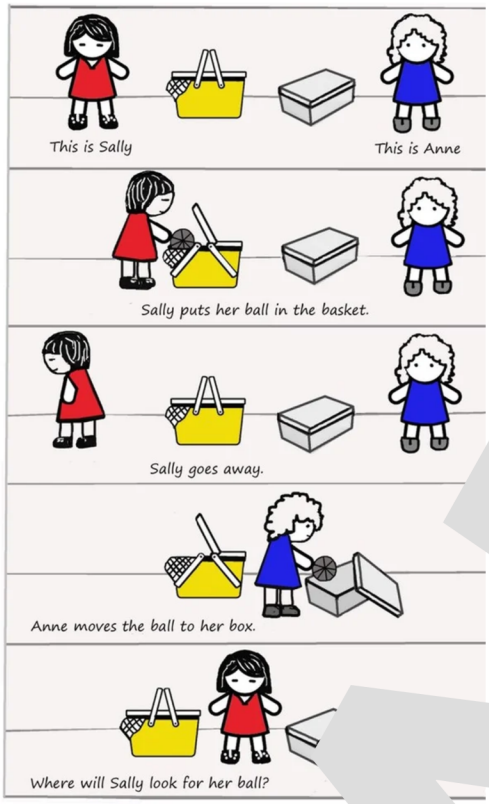
Research Support → Selman (1971) tested children using dilemmas → Found perspective-tak… cy develo… age.

- Further Developments:

→ Interpersonal Understanding → Recognising others' thoughts.
→ Interpersonal Negotiation → Resolving conflict & maintaining relationships.
→ Social Awareness → Understanding society's role in behaviour.

### AO3:

- Selman (1971) → Perspective-taking correlates with age → Longitudinal studies (Gurucharri & Selman, 19… this over time.
- Role of Experience → Fitzgerald & White (2003) → Children improved wher… nts encouraged them to take othe… perspectives → Shows social experience influences development.
- Correlation, Not Causation → Popular children may develop better perspe… nly by interactin… Direction of causation unclear.
- Real-World Applications → Used in social skills training (e.g., for criminals) → Enco… & re… reoffending.




## SOCIAL COG… …ON. …RY OF MI…

- Ability to und… others ha… …arate thoughts, beliefs & emotions.
- False Belief … 3–4) → … children understand that others can hold incorrect b…

→ Maxi Task (Wim… → Maxi leaves chocolate in a blue cupboard → Mum moves it to green… …ear-olds fail (think Maxi knows), 4-year-olds pass (kno… 'll check blue).
→ Sally-… /Baron-Cohen… …Sally puts marble in a basket → Anne moves … non-autisti… …ass, only 20% of autistic children do
→ Sugge… …m.

- Eyes T… …97) → Tests advanced ToM in adults by judging emotions … e…

### AO3:

- False belief ta… …d → Require …emory & visual skills, not just ToM. Children … due to … lack of ToM.
… → Sally-Anne test may measure switching perspectives,
… & experi… …velops earlier in children with large families,
… …ocial influence.
- H… …2023) → low internal reliability (identifying one emotion ≠ others) + validi… …plex emotions, no clear correct answers) → questions use of Eyes Test… …ToM measure.
- Baron-Cohen … …focused on Western cultures; other societies may not see … of social inte… …on as an issue.

## THE MIRROR NEURON …W

- Rizzolatti et al. (2002) found mirr… …s) in macaque monkeys' motor cortex whe… …an action being perform…
- Understandi… → MNs fire not just … see actions bu… …en we interpret intentio… …e & Goldman…
- Perspecti… …ng & ToM… …in th…ory of mind (ToM) ar… …notions and perspectiv…
- Human evo… …handran (2… …gues MNs were vital in social e… …n, enabling co… …cial roles.
- Autism → Deficits in MNs may exp… …n (Ramachandran & Oberman, 2006); autistic in… …uggle with imitation, empathy, and socia… …nding.
- Language acquisition → MNs e… …Broca's area, involved in speech production, suggesting a role in language learning.
- Uniquely human? → MNs may explain the success of human social interactions (Ramachandran, 2000). Bonobos also show self-recognition and intention understanding.

### AO3:

- Research Support → Haker et al. (2012) → Watching yawns activates mirror neurons → Supports role in empathy.
- Intentions → Iacoboni et al. (2005) → Inferior frontal gyrus active when understanding hand gestures → Mirror neurons may encode intentions.
- Hard to Research → Ethical issues prevent direct study in humans → Brain scans only show overall activity, not individual neuron function.
- Explaining Autism → Hadjikhani (2007) → Autistic individuals have a thinner pars opercularis (mirror neuron area) → May explain difficulties in perspective-taking.
- Evidence from Individual Neurons → Mukamel et al. (2010) → Found 'anti-mirror neurons' in epilepsy patients → Fire when acting but are inhibited when observing.
- Brain Damage Evidence → Tranel et al. (2003) → Premotor cortex damage → Patients could identify actions but not retrieve words for them.
- Gender Differences → Cheung et al. (2009) → Women show stronger mirror neuron activity than men → Suggests biological basis for social sensitivity.
- Parker (2022) reductionist (explains social cognition via brain activity only) → ignores cognitive, emotional + cultural factors → may oversimplify complex social behaviour.

# ADDICTION

## DESCRIBING ADDICTION

Defining Addiction → More than just a habit → involves dependence, tolerance, and withdrawal.

- Physical Dependence → Body needs the drug to function normally → stopping leads to withdrawal symptoms (e.g., shaking, nausea).
- Psychological Dependence → Craving due to emotional/mental attachment → substance use becomes central to thoughts & behaviours.
- Tolerance → Repeated use leads to reduced effects → higher doses needed.
- Behavioural tolerance → Body compensates (e.g., alcoholics walking steadily despite intoxication).
- Cross-tolerance → Tolerance to one substance reduces sensitivity to another (e.g., alcohol & benzodiazepines).
- Withdrawal Syndrome → Stopping a drug leads to physical & psychological symptoms (e.g., anxiety, headaches, cravings).
- Acute stage → Strong withdrawal effects as the body adjusts. e.g. intense cravings
- Prolonged stage → Symptoms continue for months. even years, sensitive to cues associated with the substance

## NICOTINE: LEARNING THEORY

- Operant conditioning → Nicotine triggers dopamine release (mesolimbic pathway, nucleus accumbens) → positive reinforcement (euphoria) strengthens habit. Negative reinforcement → smoking relieves withdrawal (e.g., anxiety, agitation) → maintains addiction.
- Cue reactivity → Smoking stimuli (e.g., lighte cigarette pack, pub environment) become secondary reinforcers through association with nicotine's pleasurable effects → triggers cravings and relapse.
- Classical conditioning → Neutral stimuli (e.g., cigarette smell) become conditioned stimuli, triggering dopamine release ev nicotine → explains relapse.
- Social learning theory → You role models (e.g., parents, peer ced by rewards (e.g., stress relief, so approval).

AO3:

- Levin et al. (2010) → rats learned to sel administer nicotine lever pressing, increasing over pports role of operant condi cotine addiction.
- Carter & Tif ) → meta-analysis of 41 studies → c smokers sho stronger c physiolo (e.g., hear rease cues → supp y.
- Lopez et al. ( rt smokin earlier, experie val sooner & struggle more to quit → suggests nicotin addiction differs between men & wo
- DiBlasio & Benda (1993) → peer i in adolescent smoking → stronger to parents reduced smoking risk, w friendship with smokers increased it → supports social learning theory.

## RISK FACTORS

- Genetic vulnerability → D2 receptor deficiency = low dopamine → CYP2A6 enzyme affects nicotine metabolism (Pianezza et al., 1998).
- Stress → Adverse childhood experiences (ACEs) increase vulnerability to addiction (Teicher, 2008) → Self-medication hypothesis (Robins et al., 1974) suggests individuals use substances cope with trauma.
- Personality → Impulsivity, sensation-seekin APD linked to addiction (Eysenck, 1997) → Addiction-prone personality predicts marijuana use (Barnes et al., 2005)
- Family influences → Social learning (Bandura, 1977) → Parental substance abuse increases risk (Biederman et al., 2000) → Parenting style affects resilience (Fletcher et al. 1995).
- Peers → Peer pressure increase od of risky behaviours (Tajfel & Tur cial networks often comprise indiv habits (Eiser et al., 1991)

AO3:

- Genetic vulnerability → (Kendler et al., 2012) → highe hose with biological par on → supports genetic
- Stress → Correl udies show between stres diction but c ablish causation → ay ex stress as a result o versa.
- Personality → APD nce are co-morbid (Bahlmann e sts perso isorders increas
- Fam Parental subs lin tion (Madra 201 explanatio
- Peers → corrects ion practical ap redu tes.

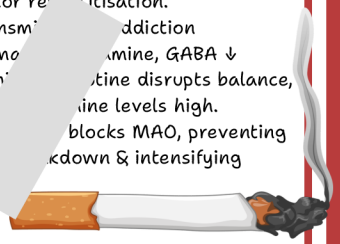
## NICOTINE: BRAIN NEUROCHMISTRY

Nicotine & Dopamine → Nicotine binds AChRs in the VTA, triggering pamine release in the NAc & rontal cor → linked to pleasure & reinforce erant conditioning). Desensi epeated nicotine use re hR activit elops. : During w l, se in n

- Withd pamine drop cause gitation & cravings. First of the day is most pleasurable du o overnight receptor re itisation.

Neurotransmi ddiction

- Glutamo mine, GABA ↓ dopam tine disrupts balance, ine levels high. blocks MAO, preventing kdown & intensifying addi



AO3:

- McEvoy et al. (1995) → found that blocking dopamine transmission increased smoking in schizophrenic patients → supports dopamine's role in nicotine addiction.
- Watkins et al. (2000) → dopamine interacts with other systems (e.g., GABA, serotonin, opioids) → addiction is more complex than just dopamine.
- Hajek & Kobra (2022) meta-analysis → cravings triggered by environmental cues, predict relapse → DA levels return to normal after quitting → challenges purely neurochemical explanation (learning factors involved).
- D'Souza & Markou (2013) → blocking glutamate reduces dopamine release and nicotine intake → suggests targeting other neurotransmitters for treatment.

## NING

nforcement thers win as reinforcement, triggering

- Direc Gambling is positively reinforce and excitement; negatively rei pe from stress.
- Partial reinforcem e bets win, most lose. dictability w s behaviour resistant to

→ Wins occur unpredictably ay pay after an average of 8 not every 8th spin) → most resistant to n.

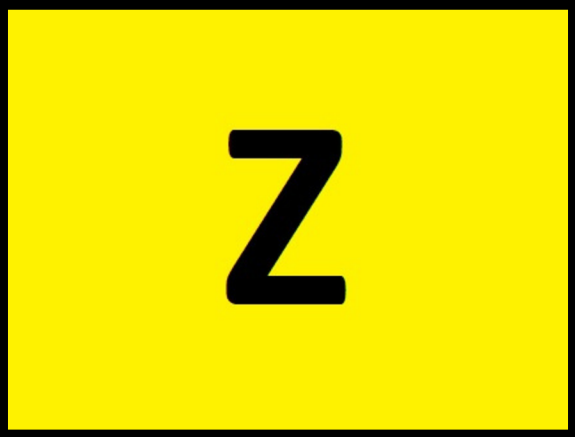
activity → Gambling cues (e.g., flashing lights, ds) become secondary reinforcers → trigger vings and maintain addiction.

ar miss effect → Losses that are 'close' to wins reinforce gambling (Reid, 1986).

hypothesis → Early big wins increase later g as gamblers seek to repeat the 'peak ence' (Aasved, 2003).

AO3:

- Dickerson (1979) → high-frequency gamblers placed bets closer to race start time, regardless of result → supports role of positive reinforcement in real-world gambling.
- Horsley et al. (2012) → high-frequency gamblers continued gambling even without reinforcement → supports role of partial reinforcement in persistent gambling.
- Many people gamble but don't develop addiction → suggests other factors (e.g., cognitive biases, personality) influence
- Sharpe (2002) → early big wins can lead to illusions of control over outcomes → overestimation of skill encourages persistent gambling.




# MR. ZEE'S RESOURCES