

## The Nervous System

Collects, processes and responds to the environment & coordinates muscles and glands via neurotransmitters.

- Central Nervous System
- Peripheral Nervous System
  - **somatic** - voluntary / muscles
  - **autonomic** - involuntary
  - **sympathetic** - fight or flight
  - **parasympathetic** - rest and digest



## Fight or Flight

Triggered by sympathetic NS, adrenaline released.

- Dilated pupils / digestion and bladder inhibited / increased heart rate / increased sweat.
- Increases blood flow to muscles, oxygen to brain.



## The Endocrine System

Secretes hormones through blood vessels via glands via the blood stream.

- **Hypothalamus** - controls the pituitary gland.
- **Pituitary gland** - controls all other glands with its hormones.
- **Pineal gland** - melatonin / sleep
- **Thyroid** - Thyroxine / metabolism
- **Ovaries** - oestrogen / reproduction
- **Testes** - testosterone / reproduction
- **Adrenal** - adrenaline
- **Pancreas** - insulin/energy

## Neurons

Chemical and electrical signals.

- **Sensory** - carry information towards the CAN.
- **Relay** - Found within the CNS, connect sensory and motor.
- **Motor** - Carry information away from the CNS to muscles/glands.
- **Receptors** - collect information from senses.
- **Effectors** - receive information (glands/muscles).
- They can only travel in one direction - binding / receptors / vesicles.

## Plasticity

The brain develops new neuronal connections and physical changes throughout life.

**Synaptic pruning** - 'removes' unused connections.

**Maguire** - MRI scans of 16 right handed taxi drivers with 1.5y experience and compared to 50 non-taxi drivers. Found increased grey matter in the taxi drivers in the hippocampi.



## Split-brain Research

Each hemisphere is responsible for a specific function. Left and right eye process information on the **Opposite** hemisphere.

- **Sperry** - 11 participants who had their corpus callosum removed.
- **Describe what you see** - Left hemisphere can describe, right cannot.
- **Tactile test** - Left hemisphere can describe and identify an item, right cannot describe but CAN identify.
- **Drawing task** - Left hemisphere draw poorly; Right hemisphere can draw clearly.

- ✓ Highly controlled and groundbreaking research.
- ✗ Epilepsy as a confounding variable / left vs right brain too simplistic- plasticity and a holistic view of brain may be more accurate.

## Synaptic Transmission

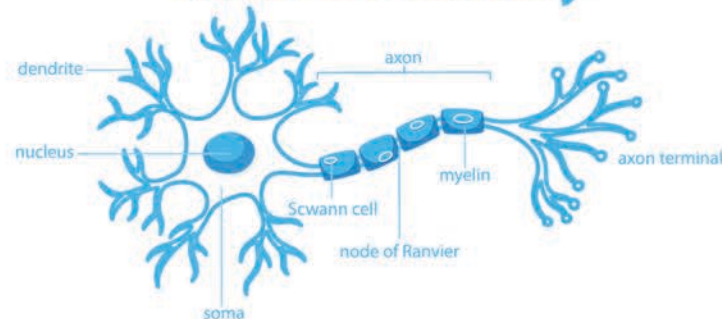
The movement of information from one neuron to the next.

**Presynaptic membrane** holds vesicles full of NT / electrical current encourages secretion across the synaptic cleft / binding on to the receptors of the post synaptic membrane.

**Excitation** - increases neuron firing, inhibition - decreases neuron firing.

**Summation** - the higher net value of excitatory / inhibitory neurons will fire.

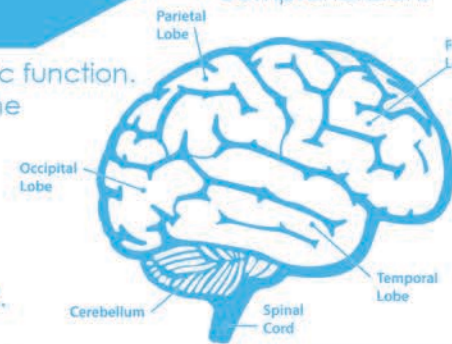
## Neuron Anatomy



## Localisation of Function

Specific areas of the brain have specific functions. Eg. Broca, Wernicke, Occipital lobe.

- **Frontal Lobe** - motor cortex / movement.
- **Parietal Lobe** - Somatosensory / senses.
- **Occipital Lobe** - Visual.
- **Temporal Lobe** - Auditory.
- **Broca's** - LEFT frontal lobe / speech production.
- **Wernicke's** - LEFT temporal lobe / language comprehension.



- ✓ Broca & Wernickes aphasia / fMRI scans.
- ✗ Biologically reductionist / gender differences. Contrast with plasticity as an alternative theory.

## Functional Recovery

A form of plasticity where the brain compensates for damaged areas.

- **Neuronal unmasking** - dormant synapses 'unmask' and compensate.
- **Spontaneous recovery** - Natural recovery which slows down.
- **Axonal sprouting** - New nerve endings grow and connect to damaged nerves.

✓ Supporting research / the case of Gabby Giffords / real world application.

✗ Individual differences such as gender and the cognitive reserve.

## Brain Scans

**fMRI** - Measures a change in energy released by haemoglobin in the brain. Low temporal resolution. High spatial resolution. Non-invasive but expensive.

**EEG** - Measures electrical activity on the scalp via electrodes. Provides a general picture of brain activity. High temporal resolution. Low spatial resolution. Non invasive and cheaper.

**ERP** - Measures brain activity via electrodes on the scalp when the participant performs a specific task. High temporal resolution. Low spatial resolution. Non invasive.

**Post-mortem** - structural examination after death. Detailed examination on humans rather than animals. Cause and effect. Time between death and post-mortem can be an issue.

## Circadian Rhythms

24h cycle (sleep/wake).

- Primarily controlled by the SCN but needs light to reset each day.
- Siffre case study - Lived in a cave for 7 months and found that his free - running body clock increased to 25 hours.
- Shift work and jet lag - disruption to rhythms

✗ Individual differences - larks vs. owls, teenagers

## Infradian Rhythms

A cycle longer than 24h (menstruation) FSH / Oestrogen / Progesterone all linked to the menstruation cycle.

✓ **McClintock** - pheromone study found that women who smelled the pheromones of other women altered the length of their cycle.

**SAD** - yearly rhythm which creates depressive-like symptoms during winter months.



## Ultradian Rhythms

A cycle which repeated within 24h alternation between REM and non-REM.

5 stages of sleep which last about 90 minutes and repeat during 'sleep' frequency of REM increases during sleep.

✓ **Dement** - Found ppts who were woken during REM recorded dreaming whereas ppts woken during N-REM struggled to return to sleep.

✗ **Kleitman** - We live our entire sleep/wake cycle in periods of 90 minutes. And move from being alert to tired - BRAC.

## Endogenous Pacemakers

Internal biological clocks - Suprachiasmatic nucleus - responds to light - melatonin releases melatonin which causes drowsiness/sleep.

✓ **Decoursey** - chipmunks had their SCN destroyed and returned to their habitat. All died.

✓ **Ralph** - bred mutant hamsters and adapted their cycles to 20 hours.

**Exogenous Zeitgebers** - external environmental cues. Light and social cues (meal times, activity).

✓ **Campbell** - light on the back of the knees wakes ppts.



## Statistical Infrequency

Behaviour that is statistically rare is abnormal e.g. 1/100 people suffer from schizophrenia. Use of the normal distribution curve e.g. IQ.

- ✔ An objective way of measuring abnormality & useful in the diagnosis of intellectual disability disorder.
- ✘ Doesn't take into account the desirability of behaviour (high IQ). Labelling may cause more distress.

## Deviation From Social Norms

Abnormality viewed as behaviour which breaks the unwritten rules of society. e.g. schizophrenics laughing at a funeral.

- ✔ Useful in the diagnosis of antisocial personality disorder. Also takes into account the desirability of behaviour.
- ✘ Not a universal definition of abnormality (norms change across time, place and culture). Can lead to human rights abuses.

## Failure To Function Adequately

Abnormality is judged by individuals being unable to meet the demands of everyday life. Use of Rosenhan and Seligman's 7 characteristics (personal distress, observer discomfort etc).

- ✔ Face validity (makes sense).
- ✘ Not everyone who is mentally ill fails to function (e.g. Harold Shipman) and vice versa. Behaviour might just be a deviation from social norms (e.g. free soloing- climbing with no equipment / safety).

## Deviation from Ideal Mental Health

Jahoda identified 6 characteristics of ideal mental health (e.g. self attitudes, personal growth and self-actualisation). Abnormality is defined when individuals lack these characteristics.

- ✔ This is a comprehensive definition. Sets a high standard of ideal mental health therefore can be used as aspiration- also good in terms of seeking support.
- ✘ Cultural relativism (e.g. self-actualisation). Setting a high standard means that the definition may be unrealistic- a high number of people may be classed as abnormal (doesn't make sense compared to the statistical infrequency definition).

## Characteristics

## Explanations

## Treatments

### Depression

5 or more symptoms (must include low mood or loss of interest) present for 2 weeks all or most of the time / daily life affected.

Includes:

- **Emotional** symptoms (low mood)
- **Cognitive** (poor concentration & negative automatic thoughts)
- **Behavioural** (hypersomnia & insomnia, changes to eating patterns).

**Beck:** Negative self-schema + negative automatic thoughts = increased vulnerability to developing depression. This leads to the **Negative Triad**.

**Ellis:** Irrational thoughts increases the likelihood of depression.

- A = Activating** event (trigger)
- B = Belief** (values and thoughts)
- C = Consequence** (negative mood & behaviour)



**CBT**- 5-25 sessions. Goal-oriented and present focus- unconditional positive regard, challenging negative thoughts and behavioural activation are key features.

**REBT (Ellis)** is a form of CBT. REBT includes 3 types of disputing (logical, empirical and pragmatic).

- ✔ High success rate (90%- Ellis). Relatively short treatment compared to psychoanalysis.
- ✘ Therapist competence can influence effectiveness. Clients may not engage with homework. Not suitable when clients have extremely difficult lives and / or want to explore their past (childhood).

### Phobias

A phobia is an anxiety disorder. The key **emotional** symptom is **fear**.

**Cognitive** symptoms include **irrational beliefs**

**Behavioural** symptoms are:

- Panic
- Endurance
- Avoidance (PEA)

The phobic knows that beliefs are irrational. This separates phobias from disorders such as schizophrenia (when people lose touch with reality).

**Two-process model** (Mowrer)  
We acquire phobias through classical conditioning and maintain them through operant conditioning (avoidance = negative reinforcement).

**Alternative explanations**  
Social learning theory, Irrational thinking, Biological preparedness.

- ✔ Supporting research (e.g. Little Albert)  
Real-world application in terms of treatment.
- ✘ Overlooks evolution and cognitive factors  
Diathesis-stress model may be more accurate.



**Systematic Desensitisation** - based on counter-conditioning & reciprocal inhibition. Clients learn relaxation techniques & create an anxiety hierarchy. They are then gradually exposed to their fear.

- ✔ High success rate (75%). Suitable for children and people with learning difficulties. Can be self-administered (implications for the economy).
- ✘ Time-consuming. May not be effective for hard-wired phobias.

**Flooding** - Immediate exposure over 2-3h. Clients are exposed to their phobia after learning relaxation techniques until it no longer scares them (extinction).

- ✔ Quicker than SD. May be more suitable for hard-wired phobias (research is mixed).
- ✘ Not suitable for children and people with learning difficulties due to trauma.

### OCD

- Cognitive**
- Obsessions
  - Hypervigilance

- Behavioural**
- Compulsions
  - Avoidance

- Emotional**
- Anxiety
  - Depression



**Neural Explanations.** Neuroanatomy - damaged caudate nucleus causes an over-active worry circuit, neurochemical - low serotonin, high dopamine.

May inherit candidate genes passed on DNA which increases vulnerability e.g. SERT, 5HTID-beta.

- ✔ Supported by Billet - MZ twins 2x more likely to both share OCD.
- ✘ OCD is polygenic, diathesis stress model.

**Drug Therapy** - SSRIs increase serotonin which can reduce symptoms of OCD / synaptic transmission.

Alternatives to SSRIs - SNRIs / increase levels of serotonin and noradrenaline.

- ✔ Effective for up to 60%, require little effort and widely available.
- ✘ Not effective for 40%, side effects, treat symptoms not cause.





## Evolutionary explanations

- Sexual selection:** Partner preferences based on chances of reproductive success (pass on genes)
- **Inter-sexual selection** – evolution of traits that increase attractiveness. Males prefer females who show traits of fertility, women prefer resource related traits (sexy sons' hypothesis)
  - **Intra-sexual selection** – evolution of traits that increase competition, males who are strong/aggressive more likely to survive and pass on genes.
- ✓ Supported by Buss in cross-cultural research
  - ✗ May not be relevant in today's society (women more independent)
  - ✗ May not apply to homosexual relationships
  - ✗ Difficult to test/falsify

## Theories: Social exchange theory

- Thibault and Kelly:** Seek 'exchange', aim to maximise rewards and minimise costs (make profit)
- **Comparison Level (CL):** assesses reward based on previous experiences/observations
  - **Comparison to Alternatives (CLAT):** compare profit to being alone or alternative relationship
  - **Four stages:** sampling, bargaining, commitment, institutionalisation
- ✓ Supported by Sprecher and can explain individual differences
  - ✗ Assumes people make rational and logical decisions
  - ✗ Difficult to establish cause and effect
  - ✗ May not apply to communal relationships

## Theories: Equity theory

- Walster:** Fairness (equity) is most important, profit should be the same, does not mean equality. Deal with inequity physically and cognitively.
- ✓ Supported by Utne et al – higher equity meant higher satisfaction
  - ✗ May not be important in collectivist cultures
  - ✗ Other factors may be more important

## Factors influencing attraction

- Physical attraction:** symmetry (suggests strong genes), babyfaces (provokes caregiving), halo effect (judged to possess positive characteristics), matching hypothesis (choose similar attractiveness)
- ✓ Matching hypothesis supported by Feingold – positive correlation in attractiveness between partners
  - ✓ Supported by cross-cultural research
  - ✗ May not be important to all (MACHO scale)
- Self-disclosure:** Sharing personal info, likes/dislikes, wishes etc, needs to be reciprocal, builds intimacy. Social penetration theory – orientation, exploratory affective, affective, stable.
- ✓ Supported by Sprecher and Hendrick – positive correlation between disclosure and satisfaction
  - ✗ Complex factor – too much could reduce attraction
- Filter theory:** 1) social demography (those we are likely to meet), 2) similarity in attitudes, 3) complimentary (meet emotional needs)
- ✓ Supported by Kerckhoff and Davis – longitudinal study
  - ✗ May lack temporal validity, hard to establish cause and effect

## Theories: Rusbult's model of investment

- Rusbult:** SET too simplistic, most important is commitment – more likely to remain in relationship. Three factors influence commitment:
- **Satisfaction** – consider rewards vs. cost, still involves comparison level
  - **Comparison to alternatives** – consider profitability of other relationships/being alone
  - **Investment** – intrinsic (what you put in) and extrinsic (what you have gained) – leads to greater commitment
- ✓ Supported by Le and Agnew – all 3 elements predicted commitment
  - ✗ Too simplistic – does not consider future investments

## Theories: Duck's model of breakdown

- Duck:** Breakdown occurs in phases, couples reach a 'threshold'
- Intra-psycho (dissatisfaction is internal), dyadic (talk to partner), social (seek support), grave-dressing (see self in positive light), resurrection (prepared for new relationships)
  - ✓ Supported by Tashiro and Frazier – ppts went through grave-dressing and resurrection
  - ✗ Not supported by Akert – may only apply to one partner
  - ✗ May not apply to homosexual or arranged marriages

## Virtual relationships (social media)

- The role of self-disclosure:** May disclose more virtually than FTF due to anonymity
- **Hyperpersonal model** – can manipulate online persona, may be hyperhonest or dishonest, projecting positive image increases disclosure
  - The absence of gating:** Obstacles/barriers to interaction are removed (e.g. physical attraction), relationship more likely to get off the ground.
  - ✓ Supported by McKenna and Bargh – those who are lonely/anxious more likely to reveal true selves
  - ✗ Disclosure may differ according to media platform (more honest on gaming sites)
  - ✗ May be cultural differences in disclosure online
- Related cues theory:** Self-disclosure may be lower online due to lack of non-verbal cues, could lead to deindividuation and a loss of identity
- ✗ Cues may still be present e.g. use of emojis and timing of responses

## Parasocial relationships

- Relationships which are one-sided, unreciprocated, often with celebrities
- **Levels of parasocial relationships** – entertainment social, intense-personal, borderline pathological
- Explanations of parasocial relationships
- **Absorption addiction model** – compensate for deficiencies, more likely with poor psychological functioning, focus intensively (absorption) and compelled to maintain it (addiction),
  - ✓ Supported by Maltby – 'psychotic' personalities more likely to be at 'borderline-pathological'
  - ✗ Lacks explanatory power, takes a negative view of parasocial relationships
- **Attachment theory** – insecure-resistant most likely, seek attachment and fulfilment, show clingy and jealous behaviour
  - ✓ Supported by Kienlen – stalkers more likely to have poor attachments
  - ✗ Research is not consistent
  - ✗ Research is retrospective – lacks validity



## Types of Conformity

A type of social influence where we choose to go along with the majority.

- Compliance → conforming to fit in and be accepted - public not private, only temporary.
- Internalisation → accepting the behaviour/belief as your own - public and private, permanent change.
- Identification → conforming due to seeing group as role models/want to be like them, temporary change.

## Explanations of Conformity

**Normative Social Influence:** To be accepted or liked by a group due to group pressure, leads to compliance.

- ✓ Supported by Garandeu and Cillesen, Asch.

**Informational Social Influence:** Conforming to be 'right' or to gain knowledge, leads to internalisation.

- ✓ Supported by Fein, Wittenbrick and Henley.
- ✗ Conformity may be due to both NSI and ISI - dual process model.
- ✗ Dispositional factors (e.g. personality) could be more influential.

## Asch (1956) – Conformity

- 123 male ppts in groups of 7 asked to judge a line task, all but one were confederates, 12/18 tasks the confederates were told to give false answers.
- On the 12 trials, 37% of total responses were conforming, 75% conformed at least once.
- When interviewed most ppts admitted that they had conformed to avoid disapproval but knew the correct answer (compliance).

## Variations

- Group size → 3 or more pps saw conformity rise to over 30% (due to group pressure).
- Unanimity → unanimity (agreement) leads to high conformity, breaking unanimity by 1 confederate disagreeing decreases conformity to 5%.
- Task difficulty → As difficulty of the task increased, conformity increased (due to ISI).
- ✗ Difficult to generalise conformity findings due to limited sample (gender/students), lacks ecological validity due to artificial setting and task, findings may lack temporal validity as we may be less conforming (more independent) today. May be not be generalisable to other cultures - collectivist may be more conforming.

## Resistance to Social Influence

**Social support** → having an 'ally' who does not conform can increase non-conformity, disobedient role models can reduce obedience.

- ✓ Supported by Milgram - obedience dropped to 10% when in the presence of disobedient confederates and Asch - conformity dropped to 5.5% when in the presence of a non-conforming confederate
- ✓ Supported by Gamson - group pressure led to resisting obedience

**Locus of control** → people with an internal locus are likely to resist social influence as they are independent and take responsibility for their own actions (less likely to be influenced by others)

- ✓ Supported by Shute - people with an internal locus were less likely to conform to drug taking
- ✗ Resistance to social influence could be influenced by situational factors such as non-uniform, location etc.

## Zimbardo (1973) – Conformity to Social Roles

- 24 male volunteers assigned the role of 'guard' or 'prisoner' in a mock prison at Stanford University. Zimbardo was the prison warden, all pps were given uniform and props.
- Guards started to create their own punishments and volunteered to work longer hours. Prisoners started to riot, become passive and followed orders, 5 prisoners had to be released after 2 days and the study was terminated on day 6. Suggested conformity to social roles was strong.
- ✗ Findings may lack ecological validity (setting did not reflect some aspects of real prisons), zimbardo had a dual role of psychologist and prison superintendent (lacked objectivity, may have influenced findings), issues with ethics (right to withdraw and psychological harm), findings have not been replicated (e.g. BBC prison study).

## Milgram (1963) – Obedience

• 40 male PPs. 2 confederates (experimenter and learner). The participant was always the teacher who was ordered to punish the learner for incorrect answers via electric shocks. If the teacher stopped, the experimenter used 'prods' to encourage them.

• 65% obeyed to full 450-volts, all obeyed to 300v - suggests there is high obedience to authority.

### Variations

- Proximity → in the same room as learner (40% obeyed) / Moving the learner's hand onto a plate (30% obeyed) / Phone instructions (21% obeyed).
- Location → Laboratory (65%) / Rundown office (48% obeyed to 450v).
- Uniform → obedience higher when person giving orders was in a lab coat than 'normal' clothes.
- ✗ Findings may lack mundane realism (due to artificial lab setting) - may not reflect obedience in the real world, findings may not be generalisable (due to volunteer sample and only being men), ethical issues (deception, right to withdraw, psychological harm) - but could be justified to preserve validity and pps not regretting taking part.

## Minority Influence

Consistency (synchronic and diachronic), commitment (making sacrifices, the augmentation principle), flexibility (being willing to compromise).

- ✓ Consistency supported by Moscovici - a consistent minority led more pps to say the wrong answer on a blue/green slide task.
- ✓ Flexibility supported by Nemeth - a flexible minority led to the majority agreeing with them on the outcome of a mock jury trial.
- ✓ Evidence of these characteristics in real life examples e.g. suffragettes.

## Minority Influence and Social Change

• Draw attention to the issue → be consistent → majority are forced to examine message → augmentation principle (suffering) → the snowball effect → social cryptomnesia (use suffragettes as example).

NSI and social change → society conforms to what they perceive to be the 'new norm' e.g. 'most people don't drink and drive'.

ISI and social change → expose society to facts about behaviour (e.g. smoking) so they gain new knowledge.

Obedience and social change → use influential role models to tell influence society to change behaviour.

## Social-psychological Explanations of Obedience

This is known as setting.

**Agentic State** → attributing responsibility to someone else (authority figure), experience 'agentic shift' from autonomous to agentic state Eg, following orders of experimenter in Milgram's study.

- ✗ But not all obey - cannot all enter agentic state.

**Legitimate Authority** → obey due to orders from someone in a position of power, legitimacy is influenced by the setting the order takes place in (e.g. a university) and the context of the order given (e.g. to help society).

- ✓ Supported by Bickman - ppts more likely to obey someone in uniform.

## Dispositional Explanations of Obedience

This is known as personality.

**Authoritarian Personality** → a personality type arising from strict parenting where individuals have a strong respect for the social hierarchy and individuals above them, likely to obey those they perceive to be in authority. Measured by the f-scale.

- ✓ Supported by Elms & Milgram - obedient pps scored higher on f-scale.
- ✗ Original f-scale is flawed so findings may not be valid, findings are only correlational (difficult to establish cause and effect), unlikely to explain situations where whole populations obey, situational factors could be more important (e.g. uniform, location).