Schizophrenia

- Psychotic disorder

Neurotic disorders involve excessive anxiety, distress, and maladaptive behaviors, but individuals usually **have insight into their condition**, and **reality testing judgment is present.**

Psychotic disorders, on the other hand, involve a **break from reality**, often with hallucinations, delusions, and **impaired insight into condition.**

Neurotic disorders are typically less severe and don't involve such severe detachment from reality as seen in psychotic disorders

Diagnostic criteria (ICD-11)

One or more CORE symptoms must be present (symptoms must be persist for at least one month according to ICD-11):

- **Hallucinations**
- **Experiences of influence, passivity or control**
  - Thought withdrawal / insertion / broadcasting
- **Delusions**
  - Grandeur, persecution, reference
- **Thought disorder - an inability to think, and therefore speak, in organized manner**
- **Negative symptoms**

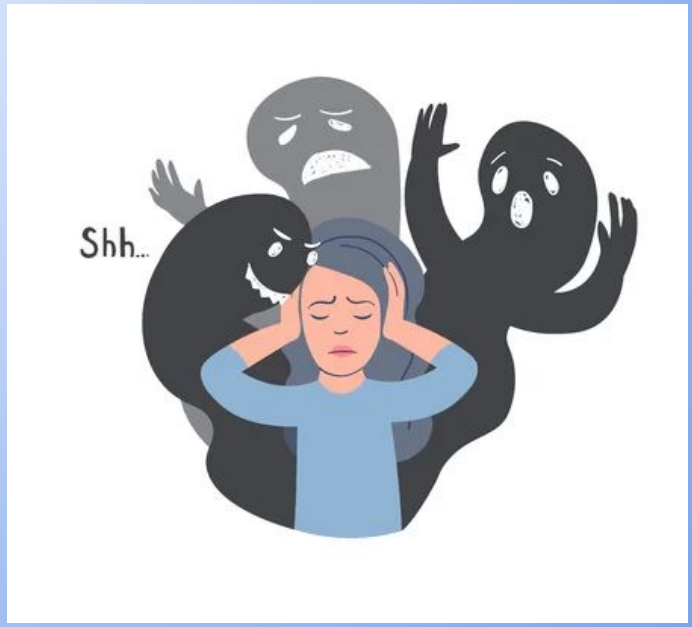
POSITIVE SYMPTOMS

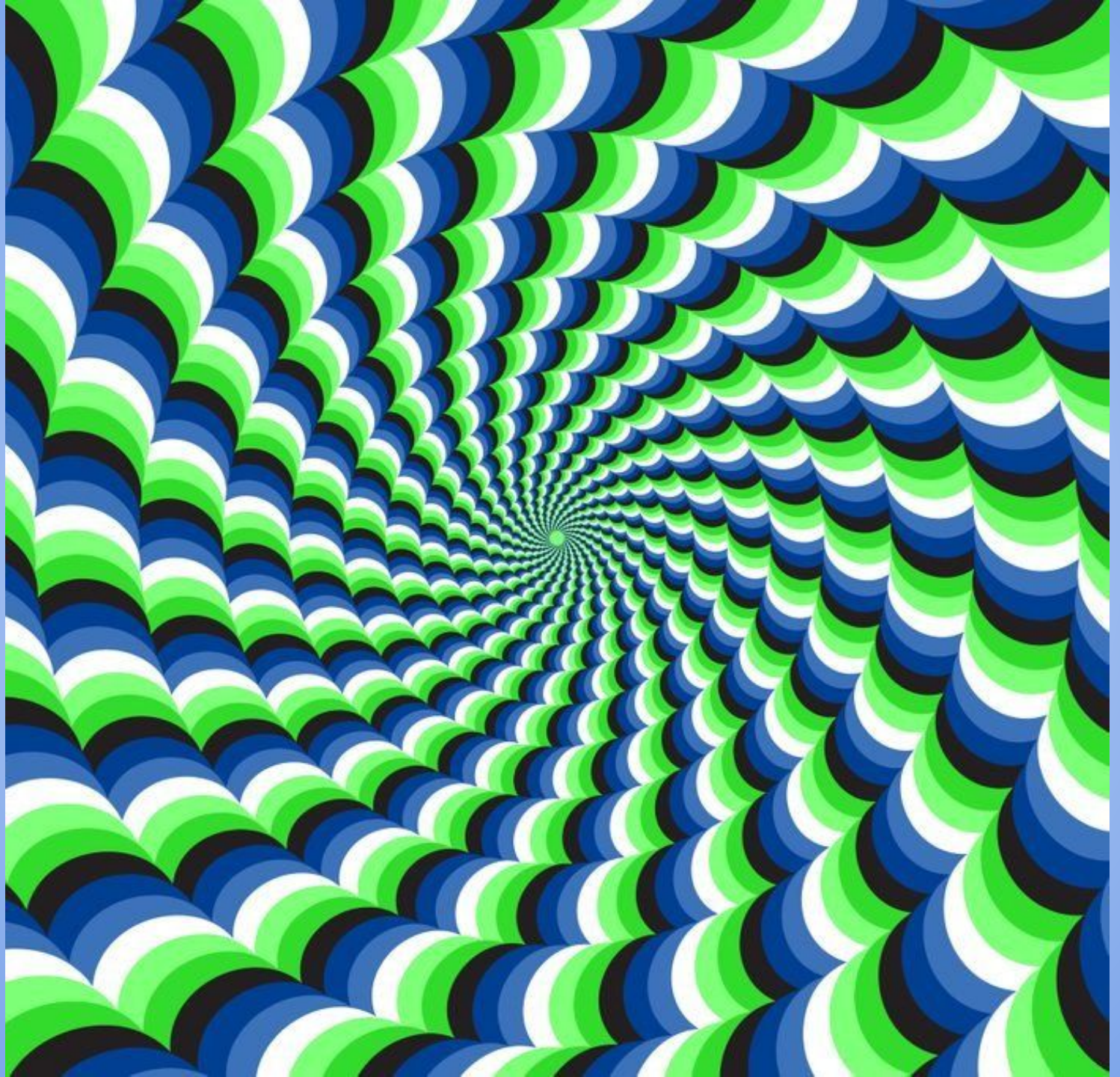
Also, those are the **core symptoms**

Hallucinations

- Vs illusions (misperception)
- Sensory experiences that involve seeing or hearing things that are not there!

- Hearing Things (Auditory Hallucinations)
- Seeing Things (Visual Hallucinations)
- Smelling Things
- Tasting Things
- Feeling physical sensations





❖ Experiences of influence, passivity or control

→ group of symptoms that involve subjective feeling that thoughts are being controlled, influenced, or manipulated by external forces or other people

→include:

Thought insertion - Subjective feeling that thoughts don't belong to them, but are inserted - for example person believe aliens implanted thoughts into his brain

Thought withdrawal - feeling that thoughts are being removed (by some external forces, or other people)

Thought broadcasting - feeling that thoughts are being transmitted to others without one's will (sitting with friends and being convinced that they can hear your every thought)

Delusions

- Beliefs that are hold to be true not based on reality, and not amenable to change despite of conflicting evidence

Most common ones:

a) Erotomanic – Another (famous) person is in love with me
b) **Grandiose** – have a unrecognised skill and status, or even belief that one has a special relationship with a supernatural entity
c) Jealous – My partner is being unfaithful - very intense and conflicts all evidence provided
d) **Persecutory** – People are conspiring against me, there are people pursuing me and they want to harm me
e) **Reference** - Tv, news, radio have a direct reference to them, reporters are talking directly to them, music has special message for them

Thought disorder

Disorganized thinking - typically inferred from the individual's speech. The individual may switch from one topic to another without finishing the first one, or without any connection between them. They could experience racing thoughts (when your thoughts go through your head very fast)

Disorganized speech - word salad, neologisms

https://www.youtube.com/watch?v=u2vMnyTiwp4

But!!! https://www.youtube.com/watch?v=3oef68YabD0

Other symptoms : negative symptoms

5A symptoms

- **Alogia** – reduced ability or poverty of speech
- **Anhedonia** - inability to experience pleasure or a reduced ability to find enjoyment in activities that are typically enjoyable or rewarding
- **Asociality** – social withdrawal, hard to maintain relationships
- **Affective flattening** – also known as blunted affect; reduction or restriction in the range and intensity of emotional expression and responsiveness
- **Avolition** – decrease in a person's motivation and ability to initiate and sustain purposeful activities (can be mistaken for laziness)

\+ disorganized behaviour and catatonia can be seen in some cases

A few more important things when diagnosing sch

Prodromal symptoms - before person is diagnosed with this disorder, weaker version of the core symptoms may be shown

The term "prodrome " refers to the early stage and symptoms of any condition. Here, a person might notice changes in the way they feel, think, or behave. However, they won't experience severe symptoms such as disorganized thought or behavior, hallucinations, or delusions

Typical age of onset - it’s usually earlier for males (early to **mid 20s**) than females (**late 20s**)
Also , **late onset** (**after 40**) is more common in females
It’s rarely diagnosed in children under 13 because of symptoms overlap (Aneja et. al is an exception)

Example study:

Case study:

Aneja et. al (2018)

- Case participant: Young boy (14 yo) diagnosed with schizophrenia
- Case history: abusive father, after parents divorced he started living with grandparents
- Symptoms

❑ hearing voices that teased him
❑ suspicious of his mother
❑ laughed and shouted at unseen others
❑ spoked very little
❑ poor sleep and self-care
❑ preferred to be alone, away from other people
❑ lack of insight into his condition

Treatment:

- ➔ Firstly, he was given medication for bipolar disorder - improved for a while, but then it got worse again
- ➔ After he was diagnosed right (dg. VEOS), it took time until right medication was found

Task:

Evaluate this study (1 strength and 1 weakness)
Identify important issues and debates related to this case study

Correlational study:
Freeman et al. (2003)

Virtual reality = VR

➢ Using VR to investigate persecutory ideation

Freeman created a VR task to investigate people's reactions towards neutral avatars. He tested non-clinical population, but with different levels of paranoia and emotional distress.

KEY TERMS

non-clinical population: a term used in the study of health which refers to a group who are not specifically targeted in contrast to a clinical population which is a group of particular interest, such as those with a medical or mental health disorder.

persecutory ideation: the process of forming an idea that one is at risk of being ill-treated or harmed by others.

Context of the study - virtual reality (VR) experiences are delivered via headpieces which project individual digital images, separately to each eye.Over time this technology started to be used in psy. research - first in cognitive, social psychology. Later it found its' way into the clinical psychology as well, both as a research method and the treatment (eg. exposure therapy for anxiety disorders, phobias..)

Main theory and explanations - Persecutory ideation is the unfounded belief that others are hostile or have negative feelings towards you, commonly seen in schizophrenia. It can severely impact a person's life, leading to social withdrawal and fear. Understanding this symptom in people with schizophrenia is challenging. But investigating this ideation in non-clinical population could improve understanding and lead to better strategies for supporting individuals with schizophrenia in managing this symptom.

Virtual reality = VR

Correlational study:
Freeman et al. (2003)

➢ **Using VR to investigate persecutory ideation**

Aim - to investigate whether participants without a history of mental illness have thoughts of a persecutory nature

+ also ,to find out whether there are cognitive or emotional factors that predict the likelihood of persecutory ideation

The researchers hypothesized that a small number of participants will have thoughts of a persecutory nature in VR, and that these would be people with higher levels of emotional distress or paranoia

Research method: Correlational study, done in the lab environment

Sample: N = 24 (12m, 12f), University College, London UK; mean age 26 (all students or administrative staff - paid volunteers)

Procedure:

1. Participants had a training to learn how to use VR

2. Half of the participants completed following questionnaires:

- **Brief Symptom Inventory** - assess **interpersonal sensitivity,** depression, anxiety and psychotic symptoms in the last 7 days

a tendency to focus on feelings of personal inadequacy or inferiority, and a feeling of marked discomfort during interpersonal interactions

- Anxiety questionnaire
- Paranoia Scale - assess ideas of persecution and reference

3. VR task: exploring a virtual library (5 minutes long)

There were five avatars sitting into small groups (of 3 and a pair) occasionally smiling looking over and talking to one another. Participants were asked to explore the room and try to form some impression of what you think about the people in the room and what they think about you

Procedure:

4. After finishing the VR task, all participants completed previous questionnaires (some for the 1st, some for the 2nd time), and they completed one new:

VR-Paranoia questionnaire - measures persecutory thoughts, ideas of reference and positive beliefs **about avatars**

5. At the end participants were interviewed about their experiences

*interviews were videotaped and clinical psychologist rated them in order to identify persecutory ideation

As seen from above → data is both quantitative (from questionnaires) and qualitative data (semi-structured interview)

▼ Table 6.1 Items in the VR-Paranoia questionnaire

1	They were hostile towards me.
2	They would have harmed me in some way if they could.
3	Someone in the room had it in for me.
4	They were trying to make me distressed.
5	They had bad intentions towards me.
6	They were talking about me behind my back.
7	They were saying negative things about me to each other.
8	They were watching me.
9	They were looking at me critically.
10	They were laughing at me.
11	They were friendly towards me.
12	They were pleasant people.
13	They were trustworthy.
14	They had kind intentions towards me.
15	I felt very safe in their company.

Results:

Mean paranoia score: 31.8 (range of possible scores 20-100)

*no gender differences in mean score

*no differences between participants who fill the questionnaires twice and those who did it only after the VR task

Correlations:

+ Persecutory thoughts in questionnaire positively correlated with persecutory thoughts in interview (different methods = same results, good validity)

+ Persecutory thoughts from VR questionnaire positively correlated with **interpersonal sensitivity and anxiety** from BSI

- Persecutory thoughts correlated negatively with positive beliefs about avatars

Examples of items:

From VR-Paranoia questionnaire

How many people agreed with those statements in the sample of total 24 peo

	Disagree	Agree a little	Moderately agree	Totally agree
Someone in the room had it in for me	15	5	3	1
They were talking about me behind my back	11	8	3	2
They were friendly towards me	4	10	9	1

▼ Table 6.3 A selection of comments made about the avatars (each comment is from a different participant)

Positive	Negative
'Friendly people just being friendly and offering a smile'	'They were very ignorant and unfriendly'
'People were nicer than real people'	'Sometimes appeared hostile, sometimes rude'
'Part of a game (flirting but being shy)'	'It was their space: you're the stranger'
'It was nice when they smiled, made me feel welcome'	'They were telling me to go away'
'They looked friendly – that was my overall impression'	'One person was very shy and another had hated me'
'I smiled and chuckled'	'The two women looked more threatening'
	'Some were intimidating'

Conclusions:

1. People do attribute mental states to VR characters and, although they're usually positive, they can be persecutory in nature. **People are more likely to show persecutory ideation if they have higher levels of interpersonal sensitivity or anxiety**

2. VR holds great promise not only as a tool for investigating and better understanding of persecutory ideation. It could be also used in therapeutic purposes - helping people to evaluate and reduce persecutory ideation and delusions.

Task:

Evaluate this study in terms of strengths and weaknesses.
Identify related issues and debates.

Methodological evaluation

- Participant reported relatively low levels of presence in the VR task. Presence refers to the feeling of actually being there. It was measured on a 6-point scale and the average rating was 2 .3 of 6. This suggests that the findings may lack ecological validity since participants were not fully immersed in the experience.

- Participants were all drawn from London University and recruited via advertisement. They were all free from prior clinical diagnosis and relatively young. This means that the findings may not be generalizable.

Half of the participants answered the BSI paranoia and anxiety question areas before in after being in a virtual library. The other group only completed them after the VR experience. **This is the strength, but why?**

Priming is the idea that exposure to one stimulus may influence a response to a subsequent stimulus, without conscious guidance or intention.

Ethical evaluation

Freeman checked to see whether time spent in the room created any distress during the semi-structured interview and found that this was not the case. Also, anxiety scores were very similar before and after the VR tasks adjusting that the experience did not leave the participants with any lasting psychological harm.

Participants agreed to take part although they were not told anything about the environment they were about to enter and were not told that the study was about persecutory thoughts. This means that Informed consent was not fully provided.

Issues and debates

- Idiographic versus nomothetic - both
- Individual versus situational - both
- Applications to everyday life - can be used for assessment, even therapy?

Explanations of schizophrenia

- Biological (genetic and biochemical)

- Psychological (cognitive)

Genetic explanations

Three types of studies investigating role of genes:

- Family
- Twin
- Adoption studies

Skip the Contemporary research and DiGeorge and the COMT gene from the book

Genetic explanations

Heritability - how much of the differences we see in traits among people are due to their genes, rather than the environment they're in

extent to which genetic factors contribute to the risk of developing schizophrenia <u>within a population</u>.

Concordance: the presence of a particular observable trait or disorder in both individuals within a set of twins.

Concordance rate - percentage of pairs of individuals that both have a certain trait or condition

Monozygotic twins - 100% shared genetic material, Dizygotic – 50%

Classic family and twin studies:
Concordance rate for MZ = 42%, for DZ= 9%
(Gottesman and Shields,1966)

Biochemical explanations
First dopamine hypothesis

- First theory (dates from 1960s):

Schizophrenia **positive symptoms** are caused by **excess** of dopamine amounts in limbic and mesolimbic system

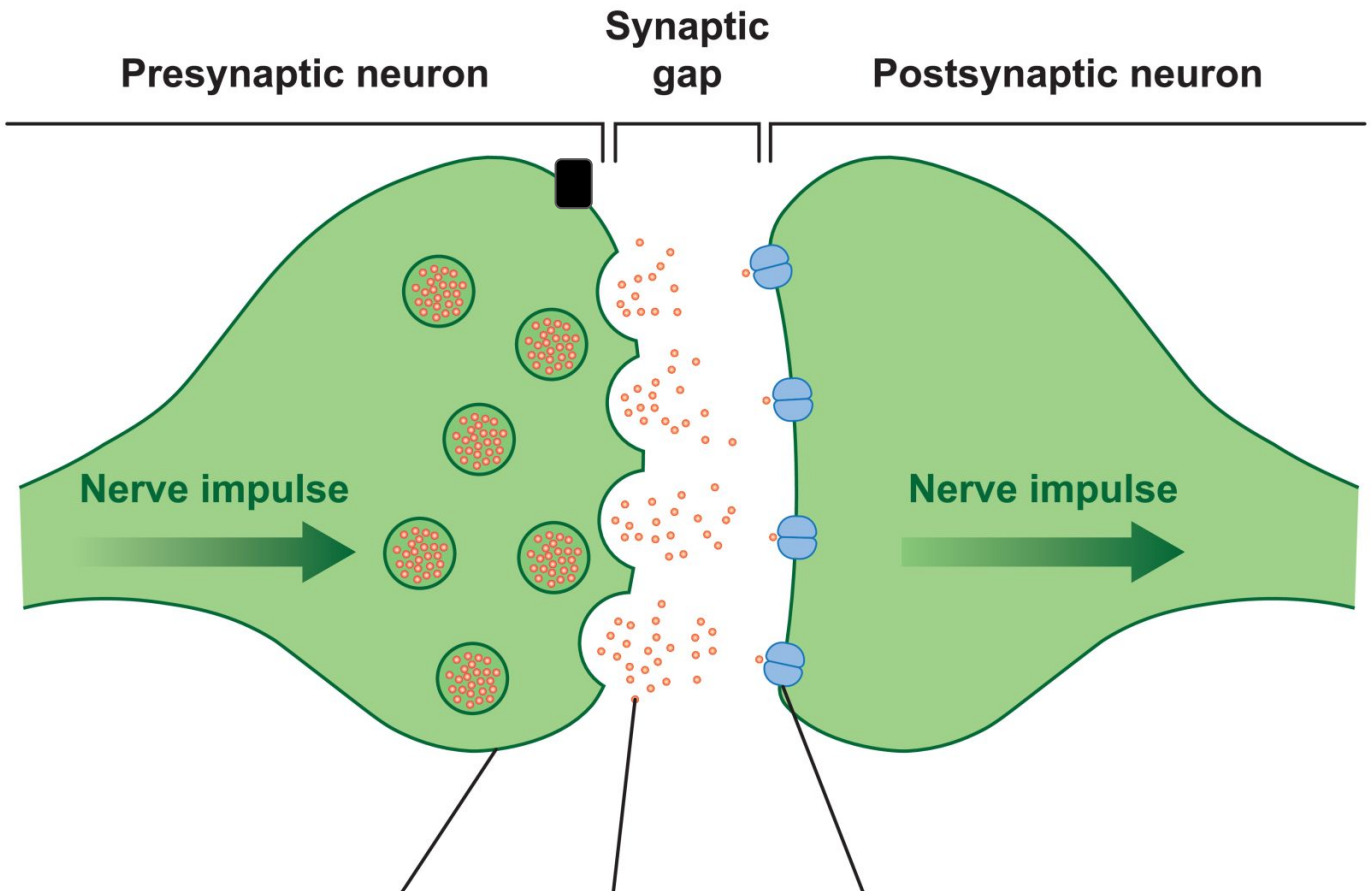
Dopamine - one of the several neurotransmitters in the brain

Neurotransmitters are chemicals that transmit signals between nerve cells (neurons) and play a crucial role in brain function and communication.

Causes of too much dopamine in this areas?

a) Too much **L-Dopa** - substance from which dopamine is made
b) Too many **dopamine receptors** on postsynaptic cell

Synaptic Transmission



Evidence for this hypothesis:

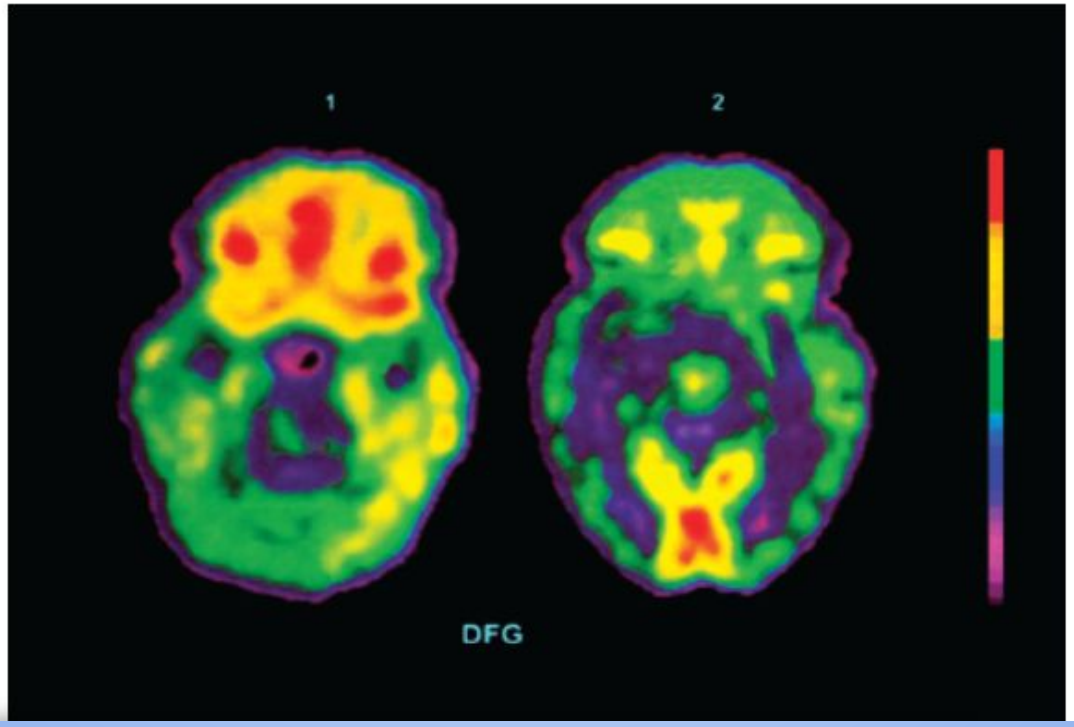
- Dopamine saturated drugs such as amphetamine and cocaine produce psychosis-like symptoms – hallucinations and delusions (Amphetamine-induced psychosis)

→ And with people who suffer from schizophrenia – they worsen the symptoms

→ They can also be trigger for developing symptoms in people who are genetically predisposed

- Post-mortem studies – brains of people who had schizophrenia had more dopamine receptors
- Positron emission tomography (PET SCAN)

Positron emission tomography (PET) scan analysis to measure the amount of dopamine activity in the brain indicates a greater number of receptors in the striatum, limbic system, and cortex of the brain in those with schizophrenia than in those without. Excessive dopamine activity in these areas may be linked to positive symptoms, while some research (Nestler, 1997) suggests that decreased dopamine activity in the prefrontal cortex of schizophrenia patients may correlate with negative symptoms such as flattened affect. See Figure 6.6 for a PET scan showing the differences in the dopamine activity of those with schizophrenia compared to those without schizophrenia.



And then there is contrary evidence:

Over time doctors noticed no improvement of negative symptoms or symptoms in all in some patients who used prescribed dopamine antagonists like chlorpromazine.

Second dopamine hypothesis

- **Lack of dopamine** in prefrontal and mesocortical areas could explain **negative and cognitive symptoms**

Biological explanations - Evaluation

DEBATE : Nature vs Nurture

Genetic explanations refer to nature side of the debate (genes, biological factors…)

but, influence of the environment could be overlooked in twin studies!

Concordance rate for sch
MZ = 42%,
DZ= 9%
(classic research)

Main assumption in genetic studies is that the difference between MZ and DZ twins is in the amount of shared genes, while all of them will have their unique experiences, way they were nurture.. BUT

BUT → Since MZ are always the same gender, look the same, have similar temperaments,
they are liklely to be parented (nurtured) more similarly than DZ

So, the degree of both **nature and nurture similarity** is higher for MZ.

Can we then be sure that the higher concordance rate for MZ is because of genes?

… Maybe it's nurture influence..

*So, **overlooking the role of nurture** is one weakness of genetic studies*

Also for dopamine - overall conflict evidence…

In some people observed worsening of symptoms when consuming dopamine saturated drugs, benefiting from dopamine antagonists…
and on the other hand evidence for counter-hypothesis (lack of dopamine)

All of that suggest there's more than nature, but more likely nature and nurture interaction

DEBATE: Reductionism versus holism

Reductionism versus holism

Psychological phenomena is always multifactorial - they are the result of complex interaction between many factors, there is never just one simple cause

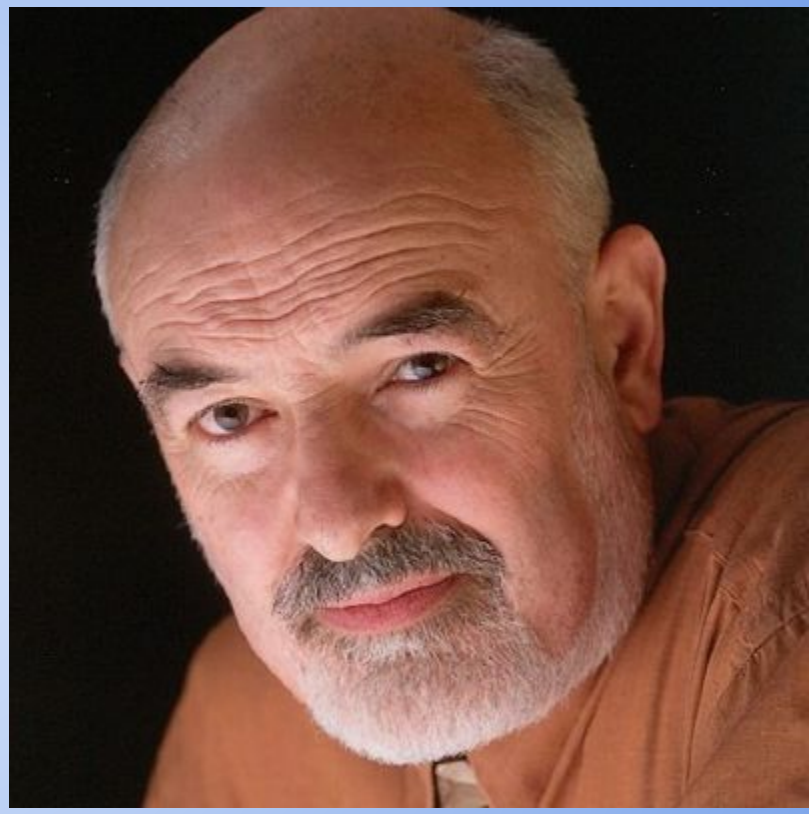
Reductionism - Investigating complicated behaviors and phenomena by **"reducing" them into small, simpler pieces**

e.g.Explaining aggressive behavior solely based on hormonal influences.

Overly reductionist explanation is a second weakness. Explaining complex disorder such as schizophrenia only be genes, dopamine..

This perspective may limit the awareness of the range of treatment options

Cognitive explanations



Biological explanations don't actually explain the subjective experiences of voice hearing, bizarre experiences such as thought insertion, or delusions…

Chris Frith - in the 1990s offered one of the first cognitive explanations of sch

He believes that errors in information processing are the cause of both + and - symptoms

Faulty mental processes

1. Errors in self-monitoring

Internal monologue - many people hear their thoughts as they read, write, or think

People with sch fail to recognise inner speech (thoughts) as internal mental phenomenon, but perceive it as coming from the outside

➢ This can explain auditory hallucinations and it' called **self-monitoring error**

Self monitoring error also can be explanation for experiences of influence, for example thought insertion, since they don't recognise their own inner voice, they could feel like it's inserted to them by someone else

2. Errors in mentalising

Remember *Theory of mind* from Baron-Cohen study?

Mentalising - cognitive ability to understand and attribute mental states, such as thoughts, feelings, beliefs, and intentions, to oneself and others

- It's based on understanding that in all the above other people can differ from us

Difficulties in mentalising may result in persecutory delusions and paranoia

Difficulties in mentalising may result in persecutory delusions and paranoia —> interpreting other people's neutral behaviour as hostile

or

not being able to distinguish opinions they have about themselves and possible opinions that others can have about them

So, if they misinterpret neutral happening in the world as dangerous or

If they think bad about themselves, what are the possible consequences ?

Negative symptoms like a social withdrawal

Do difficulties in mentalising in schizophrenia remind you of some other disorder?

3. Biases and judgment errors

As we go about our daily lives we discover information about the world that confirms or refutes are beliefs.

This leads us to modify our views in the light of new evidence.

- In schizophrenia abnormal beliefs may be formed and maintained if people fail to update their understanding based on new evidence.

- People with schizophrenia tend to draw conclusions based on insufficient evidence and show a bias against counter evidence.

- These errors of judgment and biases explain why people with schizophrenia hold bizarre believes even in the face of conflicting evidence.

Evaluating the cognitive explanations

Strength - supported by research evidence

1. research support for Internal monologue hypothesis

In one study, participants (with and without sch) listened to words, spoken by them or someone else, while being undergoing the FMRI scan. Voices could also be distorted or undistorted

Results:

Schizophrenia patients with auditory hallucinations:

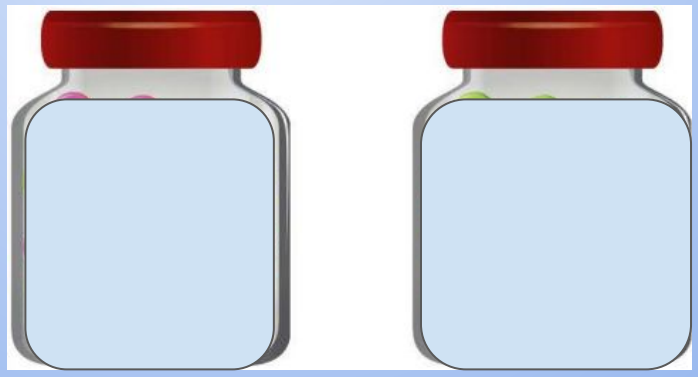
- Can't distinguish if words are spoken by them or someone else
- Have the same brain activity when listening their's and someone else's voice. Also, activity is the same regardless the voice was distorted or not.

2. Research support for judgment biases

Task - participants had to judge whether a jar contained mostly pink or mostly green beads based on the colour of beads taken one by one from jar

Results:

People with schizophrenia requested fewer beads to be removed before making their judgment than people without sch.
They were also more likely to change their mind based on a single piece of evidence (single bead)



85 green and 15 pink

85 pink and 15 green

Weakness

1. It is unclear why some people have this cognitive deficits in the first place. Cognitive theories suggests its symptoms developed due to faulty thinkings strategy, but do not explain why some people think in the ways that are different to others

this is only provide a partial account of understanding schizophrenia - **holistic approach is needed**! (bio-soc-psy factors together)

2. It does not explain why some people who have these cognitive difficulties don't develop schizophrenia, while others do. Same cognitive deficits could be found in a range of different disorders (autism, ADHD, sch)

this suggests that other factors may determine whether schizophrenic or some other symptoms occur (so again - holistic approach)

Issues and debates

Individual versus situational

→ both bio and cognitive fail to acknowledge situational factors

- maybe situational factors can't explain well the development of schizophrenia, but since schizophrenia is an episodic in nature (patients experience symptoms flare ups, rather than their constant presence) situational factors should be taken into account as possible flare up triggers

Idiographic versus nomothetic

→ both bio and cognitive are nomothetic

- this means that studies are often experimental, compare large groups of people with and without disease in order to find general differences between them (idiographic approach is the one which is better going to explain the individualistic case)

Treatments of schizophrenia

- Biological

- Psychological

Biological (biochemical)

Medication : antipsychotics

Typical antipsychotics = first generation (1950s)

- Work as dopamine **antagonists** - lessen dopamine activity by blocking dopamine receptors on postsynaptic cell
- Effective in reducing positive symptoms
- E.g.chlorpromazine, haloperidol

Atypical antipsychotics = second generation (1990s)

- They block both dopamine and serotonin receptors
- Have effect on both positive and negative symptoms
- E.g. Clozapine, risperidone

Biochemical

The Texas Medication Algorithm Project (TMAP)

- Designed to assist doctors in prescribing antipsychotics, establishing order of possible treatments

Order:

1. first the **atypical drug** will be prescribed

   If this drug is not effective then

2. moving to **typical drug**

   If if this does not help then

3. **Combination of antipsychotics with other medication** such as mood stabilizers

   If all options with meds are not helpful then

4. The final stage is **electroconvulsive therapy**

Evaluation of antipsychotic treatment

Strength: supported by research

Meta-analysis of 56 randomised control trials

Testing 18 drugs - 17 had lower relapse rates than placebos

Evaluation of antipsychotic treatment

Weakness 1 : Side effects

Common side effects of both typical and atypical: drowsiness, restlessness, nausea, constipation, weight gain

- Typical antipsychotics - *tardive dyskinesia; TD*
- Atypical antipsychotics - motor side effects like TD are less common

Weakness 2: Efficacy?

- Ineffective for 30-70% of people ???
- Efficacy decreases if they wait to much to start a treatment
- Relapse is very common (60-80%) unless they continue to take a maintenance dose

Biochemical treatments - issues and debates

Idiographic versus nomothetic

The advantage of large scale studies like described **meta-analysis** is that **nomothetic approach** allows **generalisations** to be made due to the very large sample sizes.

Also, studies incorporated in meta-analysis were assessed to determine their empirical quality using the Cochrane risk of bias tool.

Idiographic approaches such as semi-structured interviews and focus groups would be also beneficial for evaluating the efficacy of treatment. They allow researchers to capture individualized insights, like the role of perceived social support from family members and the quality of the therapeutic alliance between doctors and patients.

Biological (electroconvulsive therapy)

→ **inducing seizures for treating psychiatric disorders** - via electrodes electrical pulses (70-150 volts) are being delivered brain

*can be delivered bilaterally (to both sides), or unilaterally (to one side) In latter case it's applied to non-dominant hemisphere only to reduce memory loss

- At first - frequent sessions, 2-3 per week, and then the maintenance doses
- It doesn't help everyone, but for some this is the only option
- This is never the alternative to Meds, but for people who are treatm

https://www.youtube.com/watch?v=NGjFeBoyp1s

Evaluation of ECT: Ethics

Modified ECT - administered under general anaesthetic, using muscle relaxants so the person cannot be injured during the seizure, and has no recollection of the procedure

However, still highly controversial - banned in some countries - like Slovenia, yet in others, such as China, more than 50% of people with sch receive this treatment

Big ethical problem is using the unmodified ECT in some countries

The way ECT works is still unknown - it is believed to balance neurotransmitters in the brain, improve communication between neurons, and it is even linked to gene expression

Evaluation of ECT

Applications to everyday life and research evidence:

- rapid and significant improvement for people who were resistant to medication
- one study showed that after only 8 weeks of both ECT+drug, 50% of patients found relief, while nobody in control group did
-

Cultural differences

different cultures will have different views on this tratment, as mentioned before
but also - evidence for effecthvness that comes from non-Western countries should be so confidently generalised to Western cultures

maybe different expectations in different countries could lead to different expectations, and consequently placebo/nocebo effects..

Psychological: Cognitive behavioral therapy

- Cognitive Behavioral Therapy (CBT) is a well-established psychotherapy method
- It was initially designed for mood and anxiety disorders but has been successfully tailored for individuals dealing with schizophrenia
- An essential aspect of CBT is the establishment of a strong **therapeutic alliance** between the therapist and the client

Psychological: Cognitive behavioral therapy

Core concepts of this therapy:

➔ Focusing on **present** issues

➔ Developing **self-awareness**. Therapists assist clients in understanding how their thoughts, feelings, and behaviors are interconnected and discovering their **core beliefs**

Managing Schizophrenia Symptoms with CBT

1. **Coping skills and stress management strategies** to prevent further *decompensation* due to high levels of stress

refers to a period when the person's mental state becomes unbalanced and symptoms return.

2.**Psychoeducation and combating stigma**

Psychological: Cognitive behavioral therapy

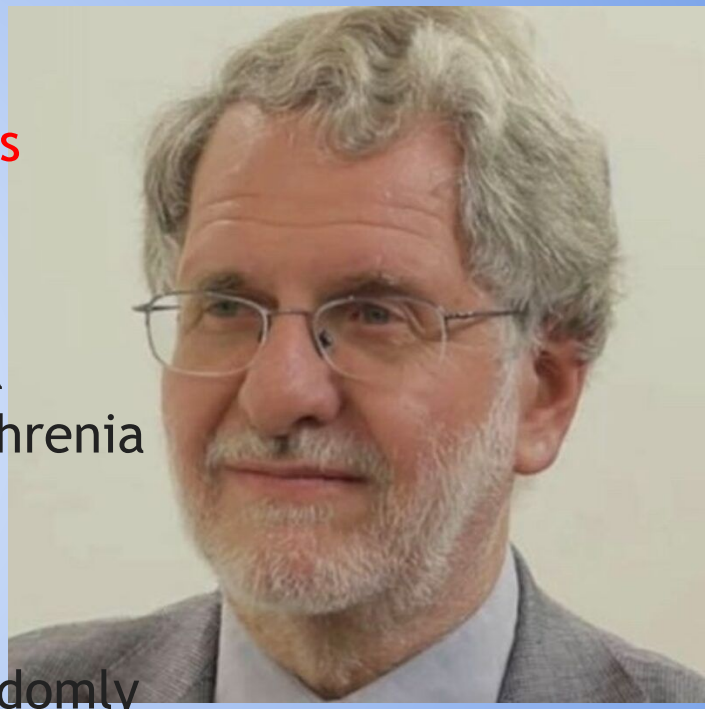
Evaluation

Strength: Promotes collaboration and empowers individuals, developing feeling of self efficacy. Reducing the power imbalance seen in biological treatments.

Weakness: However, the effectiveness of CBT may vary based on the quality of the therapeutic alliance and the individual's skills and motivation

Psychological: Cognitive behavioral therapy

Study by Sensky et.al



=Randomized control trial design with blind raters

Aim of the study

To compare the efficacy of one to one CBT and a befriending intervention for people with schizophrenia

Methodology

Sample: 90 participants with schizophrenia, randomly allocated to CBT or befriending groups

age= 16 to 60 yo

All taking meds,but still experienced positive symptoms

Psychological: Cognitive behavioral therapy

Study by Sensky et.al

Treatment: Delivered by experienced nurses, symptoms were assessed by blind raters before **(baseline)** and after treatment, and then 9 months post treatment **(follow-up)**

CBT sessions

Using special CBT techniques (e.g. on next slide)

Befriending

Befriending control group receives the same amount of contact time with a therapists, at similarly spaced intervals. Therapists were empathic and non-directive. They talked about hobbies sport and current affairs.

Psychological: Cognitive behavioral therapy

Study by Sensky et.al

▼ Table 6.4 CBT techniques used to treat different symptoms in Sensky *et al.* (2000)

Hearing voices	Patients kept diaries to document their experiences. The therapist encouraged a critical analysis of their client's beliefs about the origin and nature of the voice(s) and helped them to devise coping strategies.
Delusions	Guided discovery using Socratic questioning was used to verbally challenge and reflect on the client's irrational beliefs; clients were asked probing questions and encouraged to present evidence for their claims; the therapist helped the client to rigorously examine any evidence they presented, gradually helping them recognise that their delusional beliefs were unfounded. The downward arrow technique was used to explore the subjective meaning of the client's thoughts to reveal underlying beliefs, and alternative interpretations of events were discussed.
Disorganised thinking	Therapists used the technique of thought linkage, repeatedly asking patients to explain the connections between their seemingly unrelated thoughts.
Negative symptoms	Strategies including **paced activity scheduling** were suggested to minimise fatigue and stress and clients were encouraged to keep a diary of times when they felt pleasure and/or a sense of accomplishment.

Psychological: Cognitive behavioral therapy

Study by Sensky et.al

Results:

Participants attended an average of 19 sessions in 9 months period.

*there was no significant difference in the number of sessions attended by the CBT and befriending group

→ **both groups showed a reduction symptoms after treatment, but only the CBT group showed continued improvement at the nine month follow up**

*also no difference in used medication between groups

Conclusions:

CBT is more effective than befriending with longer lasting effects.

Psychological: Cognitive behavioral therapy

Study by Sensky et.al

Evaluation:

Study Strengths: RCT with blind raters, well trained and monitored nurses, diverse sample

Sensky et al. (2000) used a *randomised control trial (RCT)* design, which increased validity. Assessors were blind to the treatment group they were assessing, which removes any *bias* they might have felt for or against the treatment. Also, since participants were from several different clinics across the UK, the sample was probably fairly *representative*. A further strength was that the nurses in both conditions were carefully trained and monitored, which ensured they used a standardised approach to the CBT. How does a standardised procedure increase reliability?

Study Weaknesses: Uncertainty about CBT's standalone effectiveness, participant dropouts