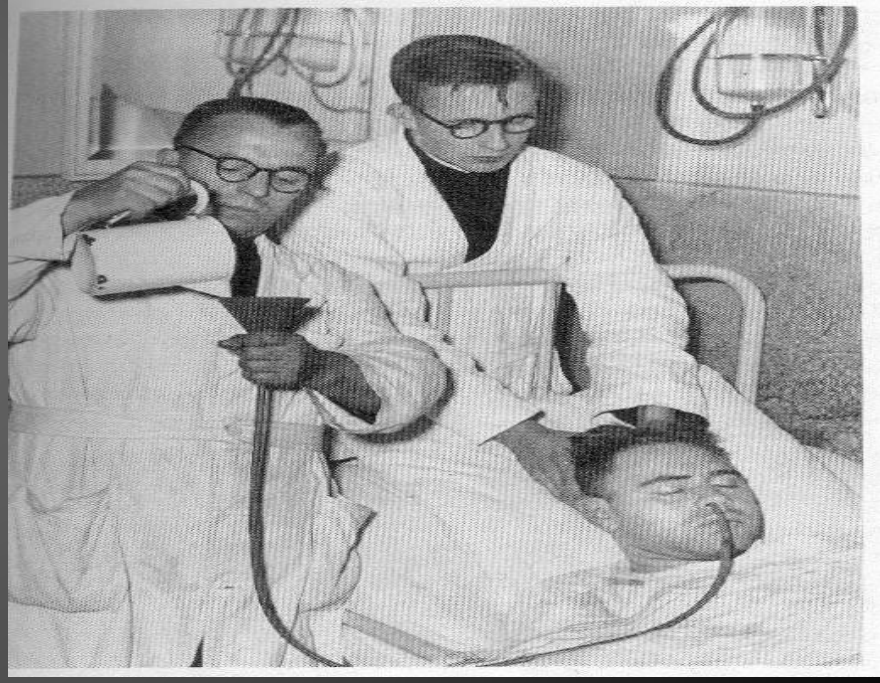
PSYCHOSIS & SCHIZOPHRENIA SPECTRUM DISORDERS



"SCHIZOPHRENIA APPEARS TO BE A DISEASE WHICH HAS NO PARTICULAR SYMPTOMS, WHICH HAS NO PARTICULAR COURSE, AND WHICH RESPONDS TO NO PARTICULAR TREATMENT"

(BENTALL, 1993)


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JACK NICHOLSON
ONE FLEW OVER
THE CUCKOO'S NEST





BRIEF HISTORICAL OVERVIEW….

- Descriptions of schizophrenic symptoms can be traced far back in history but not considered to be symptoms of a single disorder until late in the nineteenth century.

- Kraepelin (1921) – “Dementia Praecox”
  - Chronic psychotic illness with a slow declining course

- Bleuler (1911): the disorder did not always end in profound deterioration or always began in late adolescence.

- Bleuler suggested a new name for the disorder—*schizophrenia: The splitting of mental associations*

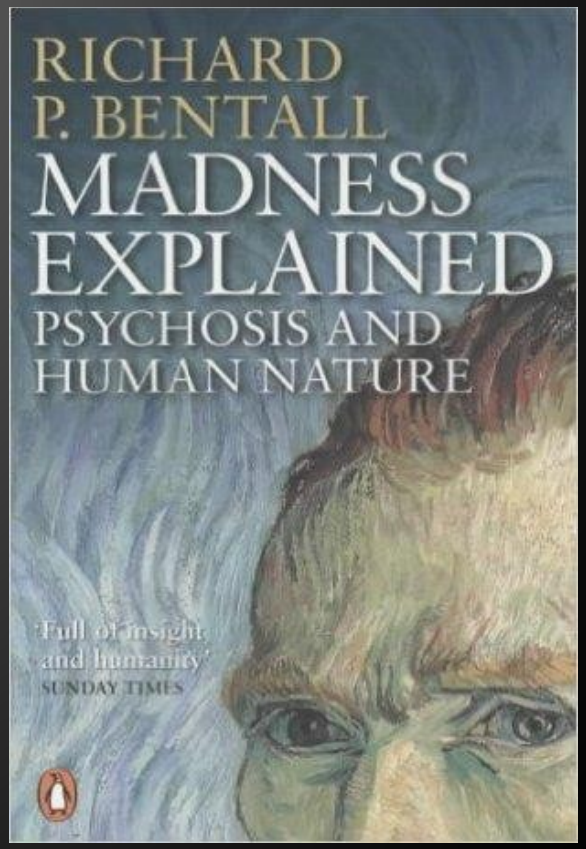
CLASSIFYING "SCHIZOPHRENIA"

- GENERALLY CONSIDERED TO BE A PSYCHOSES COMPRISING A NUMBER OF RELATED DISORDERS AROUND **DISTORTED THINKING** AND **PERCEPTUAL PROCESSES.**

- CHARACTERIZED BY:
  - DELUSIONS
  - HALLUCINATIONS
  - DISORGANISED THOUGHT AND BEHAVIOURS

CLASSIFYING SCHIZOPHRENIA

- Lack of agreement as to exact nature of schizophrenia
- Classification of schizophrenia has proven difficult: current debate around whether it actually exists as a specific diagnosis
- DSM-V classification:
  - Indicates difficulties in accurate classification



THE NATURE OF PSYCHOTIC SYMPTOMS

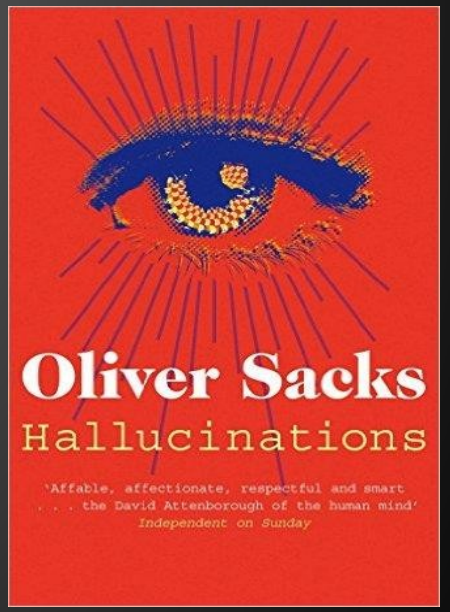
- POSITIVE SYMPTOMS
  - *EXCESS OF NORMAL FUNCTION:*
    - DELUSIONS
    - HALLUCINATIONS
    - DISORGANIZED THINKING (SPEECH)
    - ABNORMAL MOTOR BEHAVIOUR
- NEGATIVE SYMPTOMS
    - *DIMINUTION OF NORMAL FUNCTION*

DELUSIONS

- POSITIVE SYMPTOMS
  - PERSECUTORY
  - GRANDIOSE
  - DELUSIONS OF CONTROL
  - DELUSIONS OF REFERENCE
  - NIHILISTIC DELUSIONS
  - EROTOMANIC DELUSIONS

HALLUCINATIONS

- Hearing voices are the most common form of hallucination
- Voices may be experienced as describing the individuals activities, warning of impending dangers, ordering them to behave in certain ways
- Suggestion of
  - Reality monitoring deficit
  - Self monitoring deficit
  - https://www.youtube.com/watch?v=Pr8IyNGAqIw



DISORGANIZED THINKING (SPEECH)

- Derailment
- Tangentiality
- Clanging
- Neologisms
- Word salads

CLANGING

TH: ‘WHAT COLOUR IS YOUR DRESS?’

CL: ‘RED . . . LIKE A BED.’

TH: ‘WHY IS IT LIKE A BED?’

CL: ‘BECAUSE IT’S DEAD.’

TH: ‘WHY IS A BED LIKE BEING DEAD?’

CL: ‘I DUNNO . . . MAYBE IT’S A MED.’

TH: ‘WHAT’S A MED?’

CL: ‘A BLED.’

NEOLOGISMS

- Many individuals suffering psychotic symptoms often make up words.

- These *neologisms* are frequently constructed by condensing or combining several words.

  - Sniggeration - A giggle or sniggering
  - Relaudation - Praising over and over
  - Circlingology - Study of a rolling circle

WORD SALADS

"EVERYTHING IS GOING AROUND IN SLOW MOTION. THE BOXES ARE CLANGING AND CHATTERING TO BE LET OUT. BEHIND MY FOREHEAD THE PAST IS SURFACING MIXING A BOTTLE OF ACID SOLUTION. A STAKE JAMS A DOOR THAT LEADS TO A MIRAGE OF BROKEN APPEARANCES. INSIDE A BOX, POUNDING FISTS TRY TO PULL DOWN MY IMAGINATION. THE GROUND WORK IS SPLIT INTO HUNDREDS OF PIECES; EACH FRAGMENT IS SEPARATE AS IF IT HAD SOME KIND OF INDIVIDUAL PURPOSE. THE TRUTH IS LOCKED UP IN A UNIT.'

ABNORMAL MOTOR BEHAVIOUR

Disorganized behaviour may include:

- Childlike and silly behaviour
- Behaviour inappropriate to the context (e.g. masturbating in public)
- Unpredictable and agitated (e.g. shouting and swearing in the street)
- Catatonic behaviours are characterized by decreased reactivity to the environment, rigidity and immobility

NEGATIVE SYMPTOMS

- Common within a diagnosis of schizophrenia, less so in other schizophrenia spectrum disorders

- Negative symptoms include:

  - Diminished emotional expression
  - Avolition
  - Alogia
  - Anhedonia
  - Asociality

THE PREVALENCE OF SCHIZOPHRENIA SPECTRUM PROBLEMS

- Lifetime prevalence is around 0.3-0.7%
- 24 million diagnosed worldwide
- Largely between 15-35 years old
- Mortality is 50% higher than normal
- Significant lifelong impairment
- Cultural differences in course of disease progression and prevalence
  - Immigration
  - Ethnicity

THE SCHIZOPHRENIA CONTROVERSY

- The experience and symptoms of schizophrenia vary markedly
  - Two people with schizophrenia may present in very different ways and report very different experiences

- Degree to which symptoms effect daily functioning also vary

- People diagnosed with schizophrenia respond to different medications (some fail to respond to any)

- Suggests individual symptoms may have different causes and require different treatment

- Suggests that there is not one underlying cause of Schizophrenia – but different disorders?

THE SCHIZOPHRENIA CONTROVERSY

Bentall (1993): the diagnosis of schizophrenia is not valid & should be abandoned

Van Os (2009): should be re-named “salience disorder” to avoid stigma

Paris (2013) – “we will have to wait for a better understanding of the illness before we are in a position to give it a better name” (p.95)

ALTERNATIVE CLASSIFICATION

- Positive (Type 1)
  - **Delusions**
  - **Hallucinations**
  - **Disorganized Thought and Speech**
  - **Disorganized or Catatonic Behaviour**

- Negative (Type 2)

- **AFFECTIVE FLATTENING (OR BLUNTED AFFECT)**
- **ALOGIA** SEVERE REDUCTION OR COMPLETE ABSENCE OF SPEECH
- **AVOLITION** INABILITY TO PERSIST AT COMMON, GOAL-ORIENTED TASKS

- EACH CLUSTER MAY HAVE DIFFERENT PSYCHOLOGICAL AND BIOLOGICAL CAUSES

- POSITIVE SYMPTOMS MANAGED MORE SUCCESSFULLY THAN NEGATIVE SYMPTOMS

DSM-V CLASSIFICATION

- As with DSM-IV, only two of many possible symptoms needs to be present for at least one month in order to meet the DSM criteria for Schizophrenia

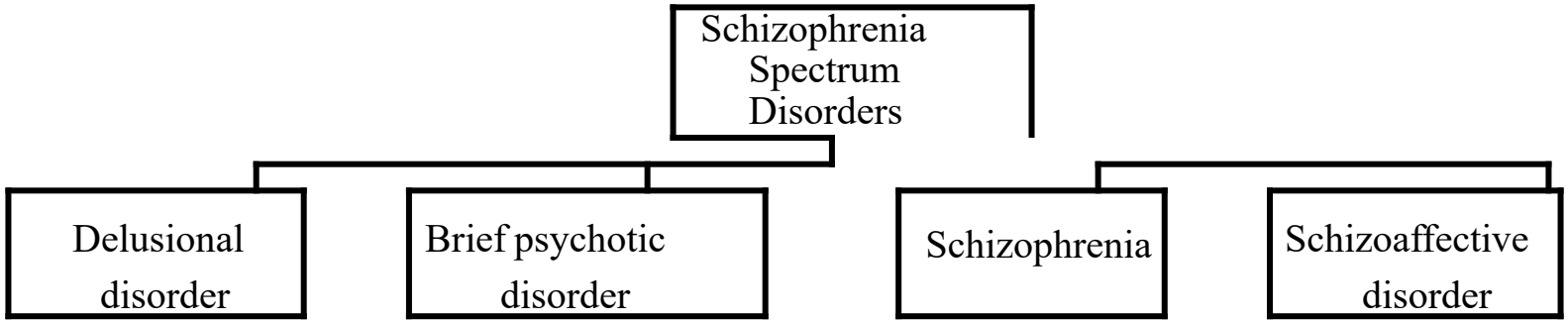
  - Delusions
  - Hallucinations
  - Disorganized speech
  - Grossly disorganized or catatonic behavior
  - Negative symptoms

DSM-V CLASSIFICATION

- BUT – traditional sub-types of Schizophrenia have been dropped

- Now also includes disorders within the Schizophrenia spectrum
  - Schizotypal personality disorder (previously under Personality Disorders)
  - Schizophreniform disorder (brief cases that recover quickly)
  - Brief psychotic disorder (less than one month of symptoms)
  - Delusional disorder (delusions without disorder of thought)

- Maintains distinction between Schizophrenia and Bipolar Disorder despite evidence for genetic similarity
  - Both groups respond to anti-psychotics but more consisent for schizophrenia
  - Lithium remains important treatment for bipolar (acute treatment and relapse prevention).


Schizophrenia Spectrum Disorders
Delusional disorder
Brief psychotic disorder
Schizophrenia
Schizoaffective disorder

DELUSIONAL DISORDER

- New diagnostic category in DSM-5
- Lifetime prevalence rate is around 0.2%
- Persecutory type (most common)
- Erotomanic type
- Grandiose type

BRIEF PSYCHOTIC DISORDER

- New diagnostic category in DSM-5
- May account for 9% cases of first-onset psychosis
- Sudden onset of at least 1 of main psychotic symptoms
- Change in state occurring within 2 weeks
- Associated with emotional turmoil or overwhelming confusion

SCHIZOPHRENIA

- Range of symptoms covering cognitive, behavioural and emotional dysfunction and impaired occupational or social functioning

- Prodromal, active and residual phases

SCHIZOAFFECTIVE DISORDER

- Diagnosed when an individual's symptoms meet criteria for schizophrenia but where there is also significant, concurrent episode of depression/mania
- Impairs social and occupational functioning
- Increased risk of suicide

THE COURSE OF PSYCHOTIC SYMPTOMS

- Prodromal stage
  - Late adolescence or early adulthood
  - Slow deterioration from normal life and social interaction over about 5 years
  - Strong evidence for *stress-diathesis* explanation

- Active stage
  - Unambiguous symptoms of psychosis

- Residual stage
  - Reduction in positive symptoms, negative symptoms still present
  - Relapse is common
    - Exposure to stress

THE AETIOLOGY OF PSYCHOTIC SYMPTOMS

- Overarching approach is a diathesis-stress one

- Most theories of schizophrenia have generally attempted to explain only specific aspects of the symptomatology (such as the acquisition of paranoid thinking)

AETIOLOGY OF PSYCHOTIC SYMPTOMS

- Biological theories
  - Genetic factors Molecular genetics
  - Neuroscience of schizophrenia
- Psychological theories:
  - Psychodynamic theories
  - Behavioural theories
  - Cognitive theories
- Sociocultural theories
  - Social factors
  - Familial factors

BIOLOGICAL THEORIES

- **Genetic theories: evidence suggests genetics as a vulnerability factor rather than sole causal factor…**

- 48% risk for MZ twins v 17% DZ (Tsuang, 2000)
- Difficult to separate out genetic and environmental factors in many studies
- Tienari et al. (2000):
  - The risk of schizophrenia in adopted away offspring of schizophrenic mothers was 4 times higher that those of non-schizophrenic mothers
  - Interaction effect with environment: risk greater for children of schizophrenic mothers if in a home with communication difficulties
- BUT 89% of people with schizophrenia have no known relative with the disorder

THE DOPAMINE HYPOTHESIS

- Some of the experiences of schizophrenia may result from excess activity in the parts of the brain controlled by dopamine.
- Amphetamine use which increases dopamine levels in brain results in schizophrenic type-behaviour (paranoia)
- Drugs which block dopamine often effective for schizophrenia (and amphetamine after-effects!)

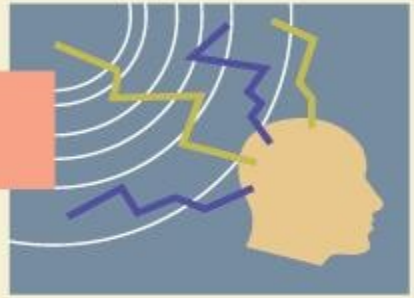
Abnormal functioning of dopamine system in prefrontal cortex



Deficits in working memory

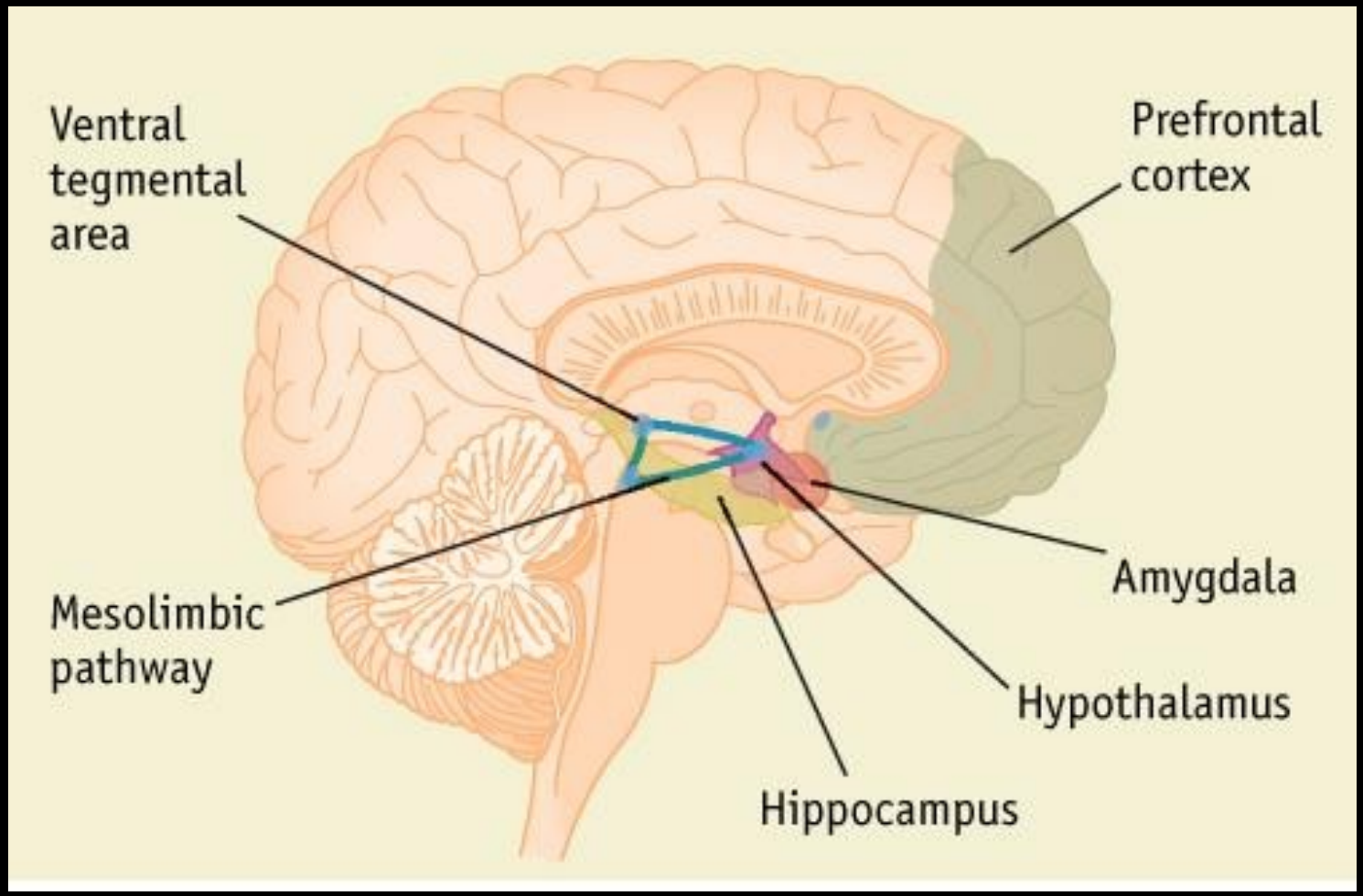


Difficulty in attending only to relevant information

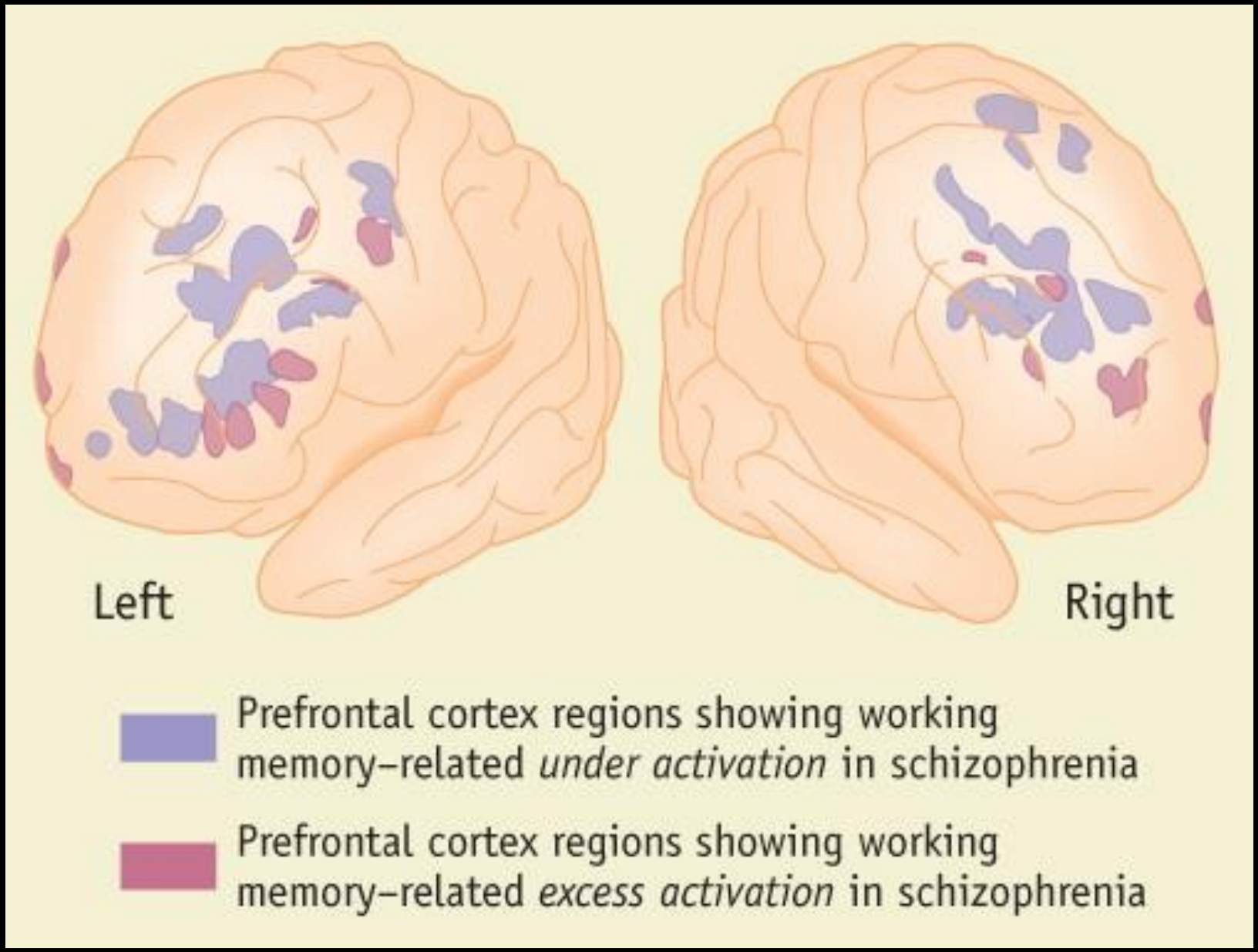


Difficulties in reasoning, communication, and problem solving





Areas of Abnormal Dopamine Activity in the Brain in Schizophrenia


Left
Right
Prefrontal cortex regions showing working memory–related *under activation* in schizophrenia
Prefrontal cortex regions showing working memory–related *excess activation* in schizophrenia

BIOLOGICAL THEORIES OF SCHIZOPHRENIA

- BUT

- research based upon those already with schizophrenia – cause or consequence?

- Drugs that block dopamine do not always improve symptoms… may reflect different "types" of symptoms and causal factors….

BIOLOGICAL THEORIES

- **Cannabis use**
  - Andreasson et al., (1987) The more cannabis smoked as age of 18, the greater the risk of schizophrenia over 15 yr follow-up
  - Or – are those who experience early schizophrenic symptoms more likely to use cannabis in at attempt to alleviate symptoms?

PSYCHOLOGICAL THEORIES

Psychodynamic theory

- Fromm-Reichman (1948): the schizophrenogenic mother
  - Results from having a mother who appears warm and self-sacrificing but is actually cold and domineering
  - Mixed signals create confusion and chaotic thoughts/actions
  - Bateson et al. (1956) “double-bind theory”: parents deal with children in contradictory and confusing ways
  - Little empirical evidence

PSYCHOLOGICAL THEORIES

Negative expressed emotion (NEE)

- High levels of negative emotion, hostility or criticism can result in relapse in people with schizophrenia.
- Wahlberg et al., (2000) – may also trigger onset of schizophrenia in vulnerable families.

PSYCHOLOGICAL CAUSES

Cognitive models:

- Accept strong biological bases of Schizophrenia
- Explain the cognitive processes associated with the different symptoms of schizophrenia
- Believe that these cognitions are not qualitatively different from "normal" population but differ in content

Delusions:

- may be a rational attempt to interpret bizarre experiences
- Stem from bias to hold persecutory beliefs even about neutral stimuli (e.g., a story in a book)

PSYCHOLOGICAL THEORIES

- Schizophrenia as the end-point of "poor coping"

- Some of the symptoms are not exclusive to the disorder: many people hear voices.
  - Is it the inability to deal with these experiences that differentiate those who experience schizophrenia?

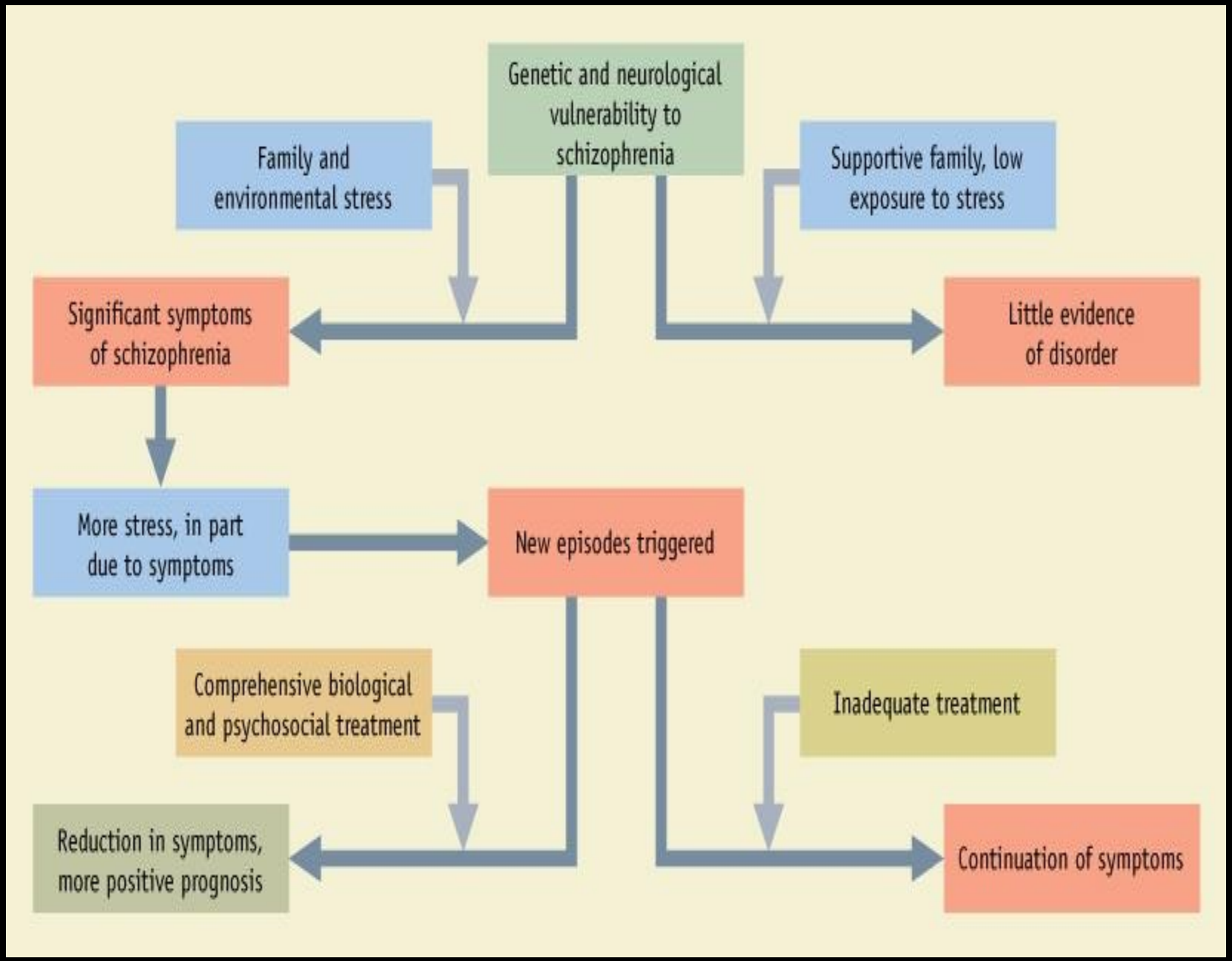
- Birchwood et al. (2000)

  - Onset of schizophrenia often associated with increasing use of poor coping efforts
    - Social withdrawal
    - Poor sleeping habits
    - Lack of any daily routine/structure
    - Use of drug

SOCIOCULTURAL THEORIES

- Highest rates of schizophrenia found in lower SES groups

- Social causation or social drift?
  - Social causation: is low SES a risk factor for schizophrenia?
  - Social drift: is schizophrenia a risk factor for low SES?
  - Fox (1990) – most evidence supports social causation rather than social drift
  - High levels of stress found in low SES groups may be a causal factor for schizophrenia amongst vulnerable individuals (Tsuang et al., 1986)


Genetic and neurological vulnerability to schizophrenia
Family and environmental stress
Supportive family, low exposure to stress
Significant symptoms of schizophrenia
Little evidence of disorder
More stress, in part due to symptoms
New episodes triggered
Comprehensive biological and psychosocial treatment
Inadequate treatment
Reduction in symptoms, more positive prognosis
Continuation of symptoms

TREATMENT

HOSPITAL TREATMENT

- Some patients are chronically disturbed/distressed and require long-term institutional treatment and care.

- Specific behavioural contingencies are put into place for all of the patients on a hospital ward.

- Carefully structured inpatient programmes can have important positive effects for chronic schizophrenic patients.

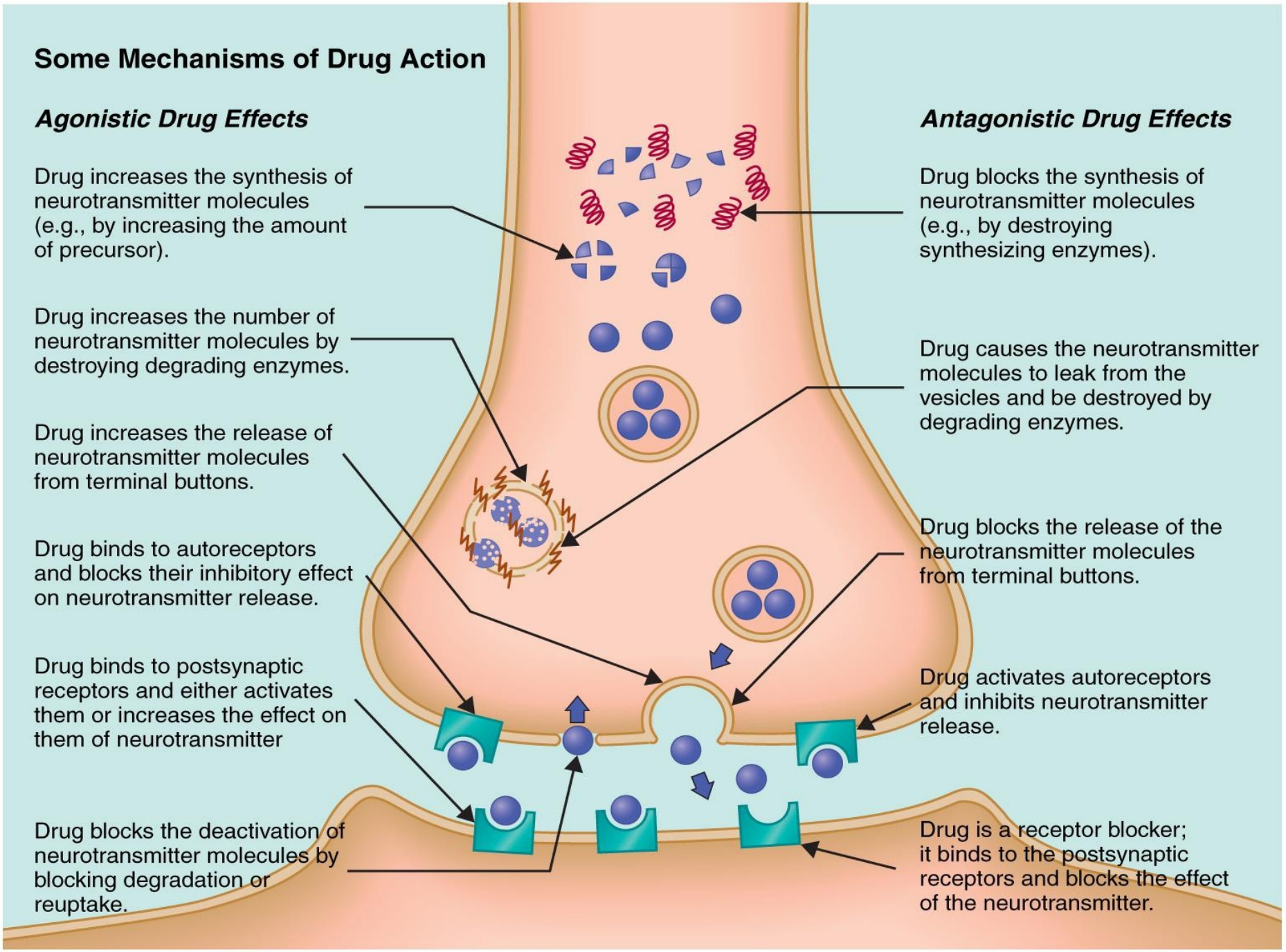
BIOLOGICAL TREATMENTS

- Antipsychotic drugs
- Electro-convulsive therapy (ECT)
  - Was first treatment in past but limited use in present
  - Tharyan (2002): 50% showed some improvement compared to placebo in short-term but not longer term
  - Less effective than antipsychotic medicine
  - https://www.youtube.com/watch?v=9L2-B-aluCE (ECT for schizophrenia)

PHARMACOTHERAPY

- Reduce the severity of psychotic symptoms.
- Traditional “first generation” and newer atypical antipsychotic medication
- All antipsychotic medications act by blocking dopamine receptors in the cortical and limbic areas of the brain.
- They also affect a number of other neurotransmitters, including serotonin, norepinephrine, and acetylcholine

Some Mechanisms of Drug Action



- Control the positive symptoms of schizophrenia
- Sedative effect of most antipsychotic drugs
- Dramatically reduce average hospital stay
- Sarti & Cournos (1990): delay rather prevent relapse
- Side-effects
- Low-adherance

SIDE EFFECTS OF CLASSIS NEUROLEPTICS

- assortment of neurological disturbances, such as muscular rigidity, tremors, restless agitation, peculiar involuntary postures, and motor inertia (Dyskinesia)

Why?

- Known as extrapyramidal symptoms (EPS) - mediated by the extrapyramidal neural pathways that connect the brain to the motor neurons in the spinal cord.

EFFECTIVENESS

- About a quarter of people with schizophrenia do not respond to neuroleptic drugs

i.e. Drugs that block dopamine do not always improve symptoms… may reflect different "types" of symptoms and causal factors…

- More effective at treating positive than negative symptoms

Relapse

- Gitlin et al., (2001)
  - 78% relapse rate within one year of discontinuing drug,
  - 98% within two years
  - compared to a third of those who remain on medication

ATYPICAL ANTIPSYCHOTICS

- Less likely than the classical antipsychotics to produce unpleasant motor side effects.
- Greater compliance and lower rates of drop out because of their decreased motor side effects.
- Clinical trials indicate at least as effective for the treatment of positive symptoms, and generally more effective for negative symptoms (Dossenbach et al., 2004)
- But - side effects of weight gain and obesity.

- Classical antipsychotics are also known as *neuroleptic* drugs because they also induce side effects that resemble the motor symptoms of Parkinson's disease.

- Double-blind, placebo-controlled studies have confirmed effectiveness

- Most individuals with Schizophrenia continue to take medication after they recover from psychotic episodes, at lower dosages, to reduce likelihood of relapse.

COMMUNITY TREATMENT

- A psychosocial intervention that is delivered by an interdisciplinary team of clinicians.

- They provide a combination of psychological treatments—including education, support, skills training, and rehabilitation—as well as medication.

PSYCHOLOGICAL TREATMENTS

Focus on teaching communication and living skills and reducing isolation

- **Behavioural:** operant conditioning, modeling
- **Cognitive:** Recognition of demoralizing attitudes they may have toward their illness,
- **Family interventions:** family therapy, token economies
- **Social Interventions**: self-help groups, assertive community treatment programs.

Social skills training (SST)

- a structured, educational approach that involves modeling, role playing, and the provision of social reinforcement for appropriate behaviours.

- in combination with neuroleptic medication, SST leads to improved performance on measures of social adjustment.

- It is not clear, however, that SST has any beneficial effects on relapse rates.

COGNITIVE-BEHAVIOURAL THERAPY (CBT)

- Designed to help patients evaluate, test, and correct distorted ways of thinking about themselves and their social environments.

- Belief modification
  - Uses **verbal challenge** and **behavioural hypothesis testing** to try and reduce delusions and/or hallucinations
  - Jones et al. (2000): meta-analysis of 4 RCTs revealed belief modification reduced frequency and impact of hallucinations.
  - Also reduced distress associated with delusions
  - https://www.youtube.com/watch?v=w8namZ5rt2k

COGNITIVE-BEHAVIOURAL THERAPY

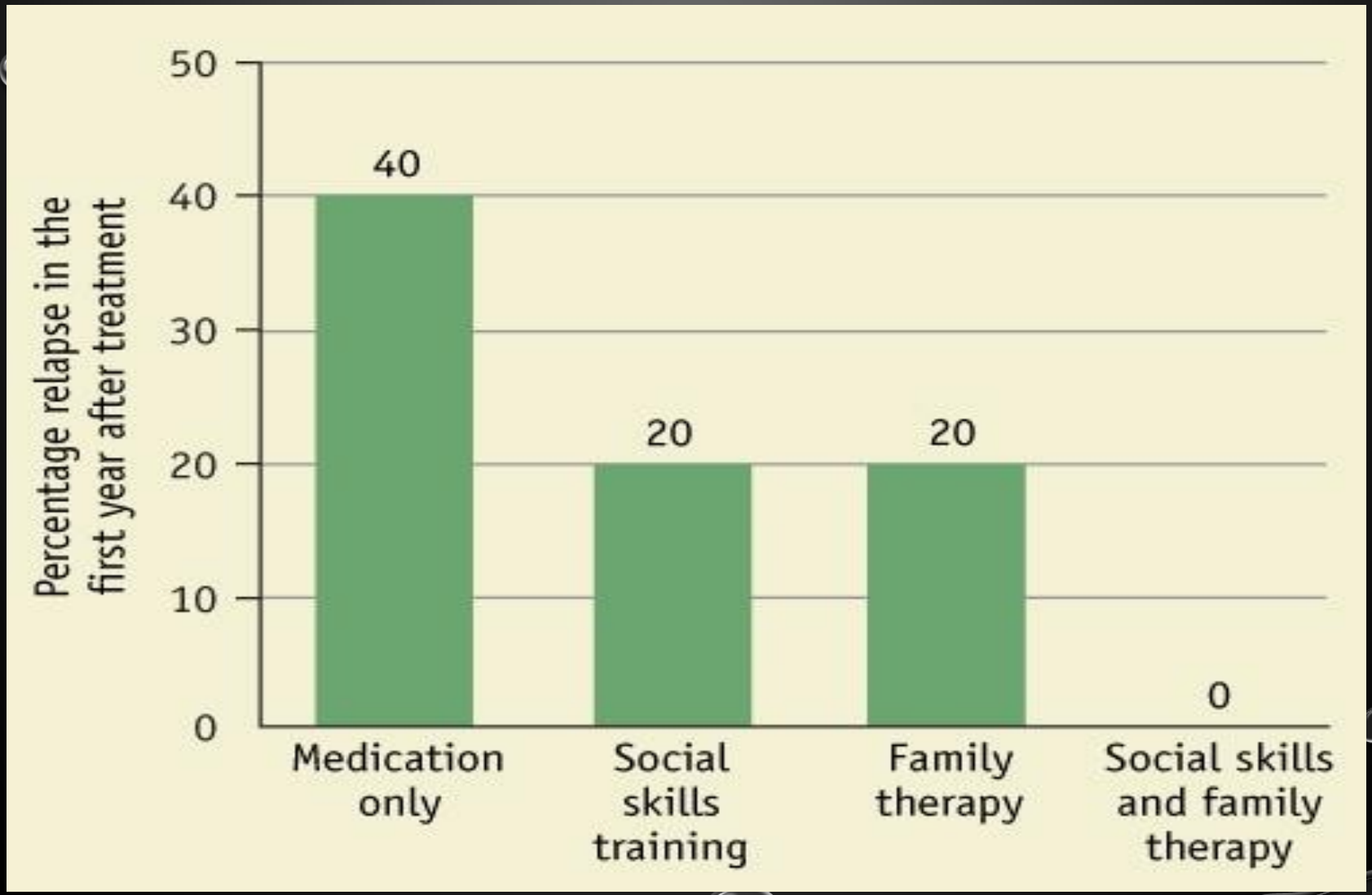
Rector & Beck (2001) Empirical review of seven RCTS:

- Routine care and adjunctive CBT has additional benefits over and above those achieved with routine care and general supportive therapy.

- Need longitudinal studies to identify longer-term outcomes and impact on relapse rate etc.

- Some people do not benefit

HOGARTY ET AL., 1986



FAMILY INTERVENTIONS

- Attempt to improve the coping skills of family members, recognizing the burdens that people often endure while caring for a family member with a chronic mental disorder.

- Include an educational component that is designed to help family members understand and accept the nature of the disorder.

- Tend to be effective in delaying but not preventing relapse.

- Pharaoh et al., 2000: Interventions based upon reducing Negative Expressed Emotion resulted in:
    - Reduce relapse rate by up to 50%
    - Reduced time in hospital
    - Increased medical adherence

MINIMISING ANTIPSYCHOTIC MEDICATION: THE "EARLY SIGNS" APPROACH

- Families are often able to predict a relapse into schizophrenia (Herz & Melville, 1980; Birchwood et al., 2000)

- Immediately following signs of relapse, placed back on medication (sometimes in conjunction with psychological therapy)

- Considered effective when well person receives reduced medication or total removal of medication

RISK OF PSYCHOSES

- Identifying “early signs” of psychosis a major focus of research interest
  - Belief that high risk patients could be identified, diagnosed and successfully treated (Carpenter, 2009), and that early treatment of first-episode psychoses may prevent further episodes
  - not supported in current research evidence (McGorry et al., 2010)
- Concern re: adding “at risk” categories…cannot predict accurately who will go on to develop schizophrenia

- Gabel et al. (2002): people treated using early signs approach used less medication over two year period than those receiving continuous medication

- No differences on measures of adjustment and well-being

- Verdoux & Cougnard (2003) insufficient evidence regarding effectiveness of early intervention programmes

SUMMARY

- Anti-psychotic drugs work in reducing symptoms but delay rather than prevent relapse
- Newer drugs – atypical antipsychotics – may be effective and have less side-effects
- Modern treatments aim to try and prevent need for antipsychotics if possible: “early signs” programmes
- Cognitive techniques such as belief modification may prove effective
- Family therapy also appears effective in preventing relapse

SUMMARY

- Schizophrenia one of the most severe disabling mental health disorders
- Concerns over nature and classification of schizophrenia
- Course and treatment effectiveness for schizophrenia varies widely across individuals
- No one causal factor: a number of potential biological, social and psychological risk factors have been identified
- Different courses and effectiveness of treatment further reflect these complexities