

# **PSYCHOPATHOLOGY I**

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**9.00**

# PSYCHOPATHOLOGY

- HISTORY
- DIAGNOSIS & LABELS
- SCHIZOPHRENIA (film)

# **PSYCHOPATHOLOGY**

**Schizophrenia**

**Bipolar Disorder**

**Depression**

**Substance Abuse (drugs, alcohol)**

**Anxiety**

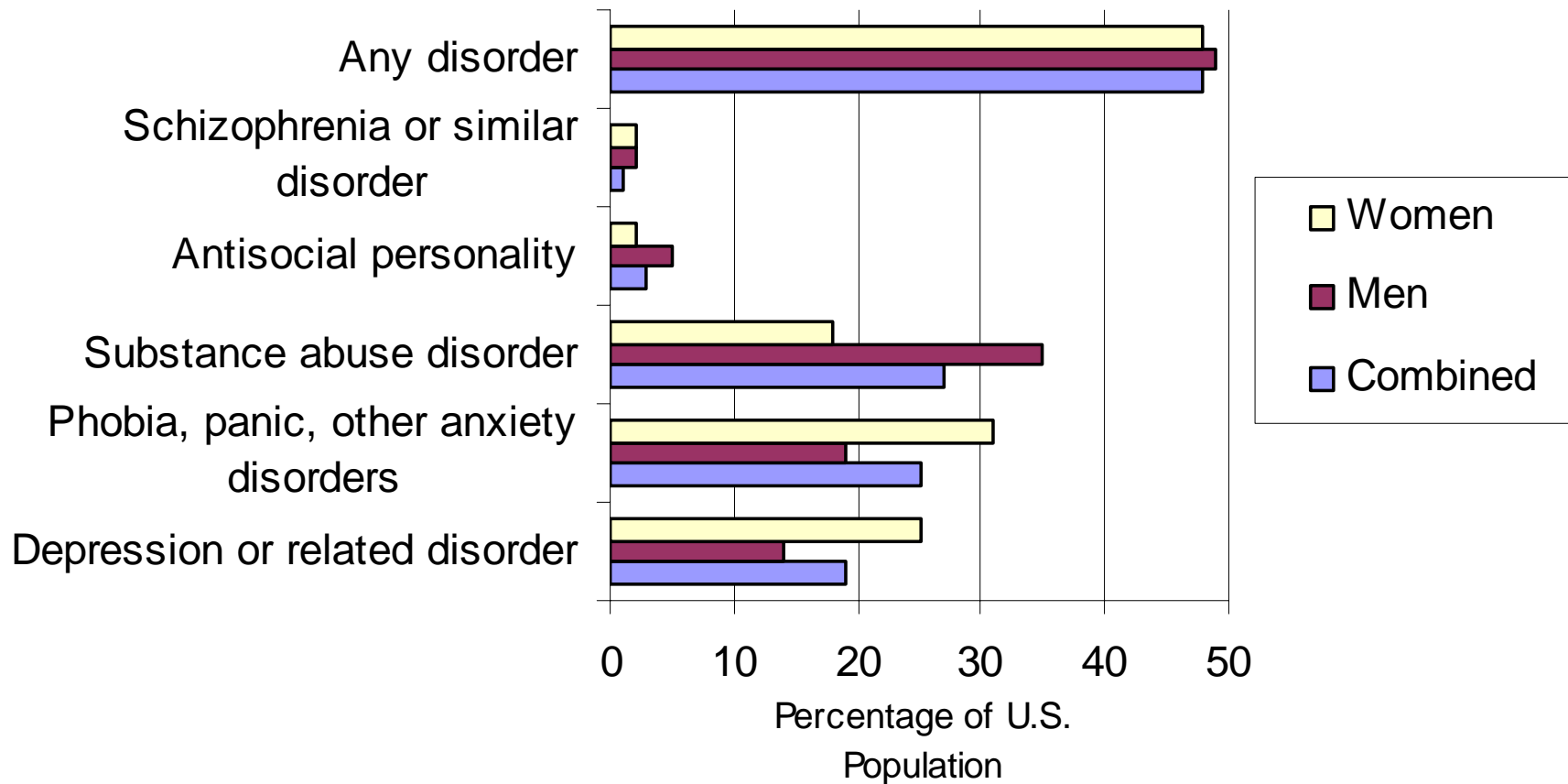
**Panic Disorder**

**Phobia (Social Phobia)**

**Autism, ADHD, Dyslexia**

**Obsessive Compulsive Disorder**

# Lifetime prevalence of psychological disorders



# **Ages 19-25**

- survey of 5,000 young adults in and out of college**
- nearly 50% had a psychiatric disorder in past year**
- similar whether in or out of college**
- fewer than 25% with a disorder sought treatment**

# PSYCHOPATHOLOGY

## Madness, Illness

### *Insanity as Demonic Possession*

- trephination as an escape
  - hole for demons
- witch hunts in 16th & 17th centuries

### *Insanity as Disease*

- hospitals to segregate the mad chained, filthy,
- London "zoo" - penny/visit
  - 96,000 in 1814

### *Organic Illness*

- general paresis & syphilis

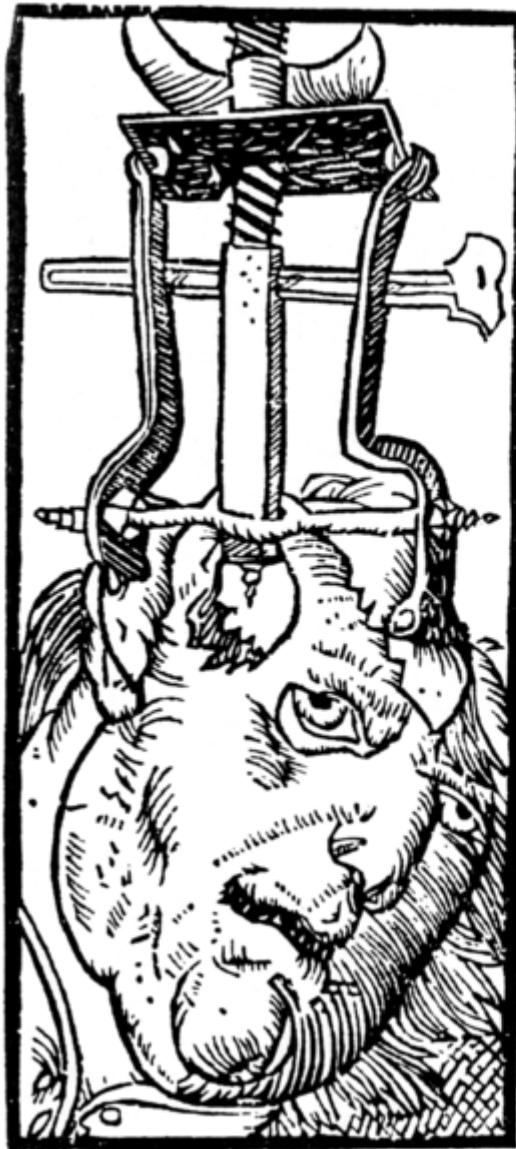
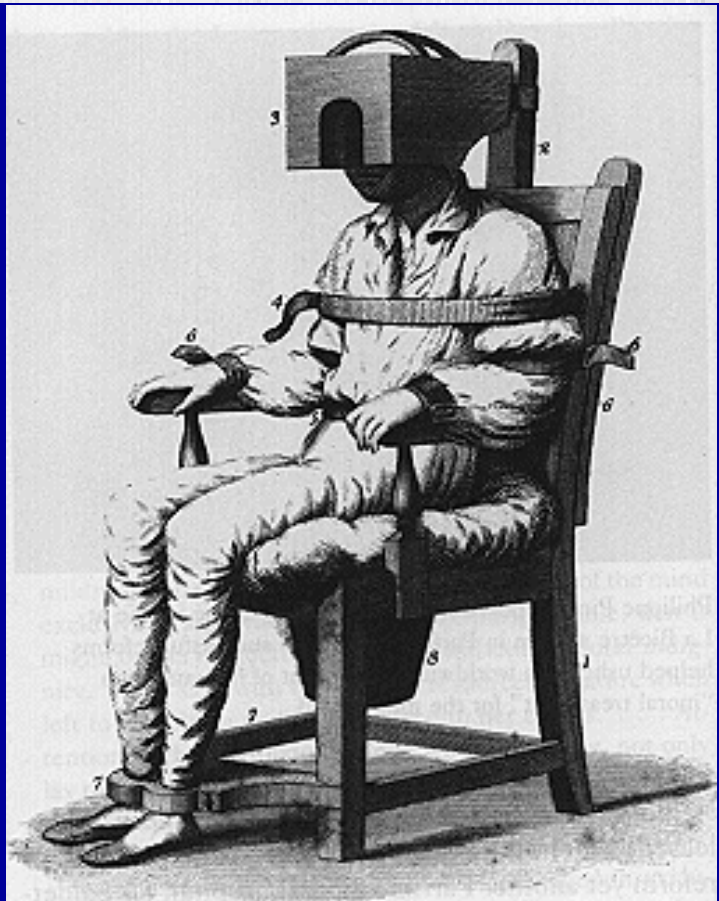
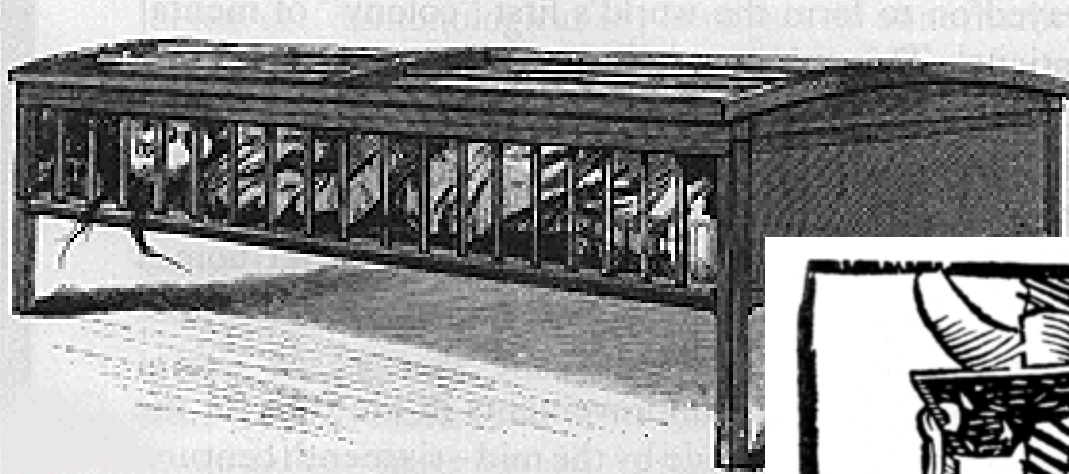
### *Psychological Illness*

- hysteria/conversion disorder/psychogenic

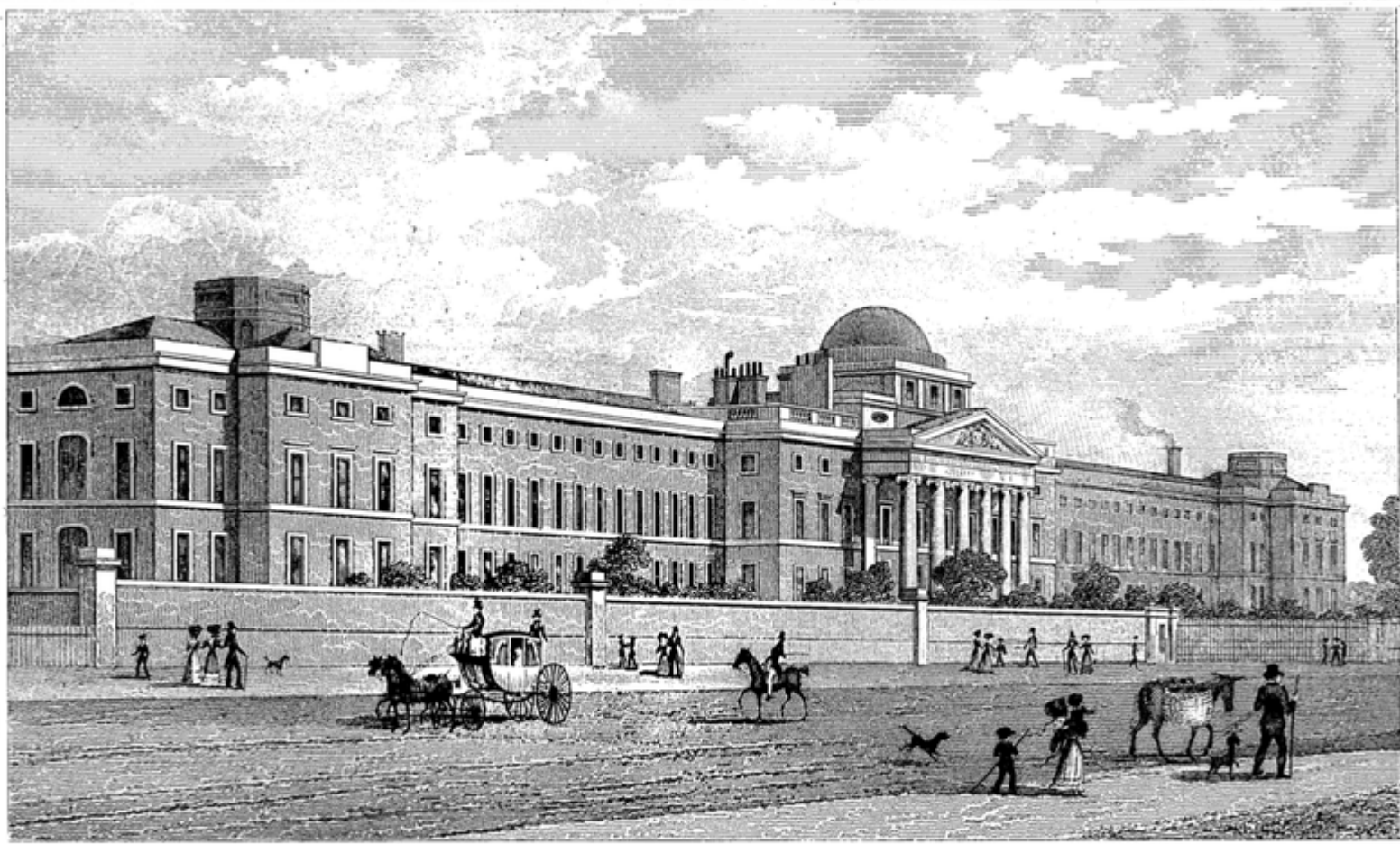


# Trephining

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Drawn by Tho. H. Shepherd.

Engraved by J. Tingle.

NEW BETHLEM HOSPITAL, ST. GEORGE'S FIELDS.





**Egas Moniz (1875-1955)**

**Nobel Prize in Physiology or Medicine 1949**



Image by Discover Magazine; license CC-BY.

**1936: Freeman and Watts introduce frontal lobotomy in United States**

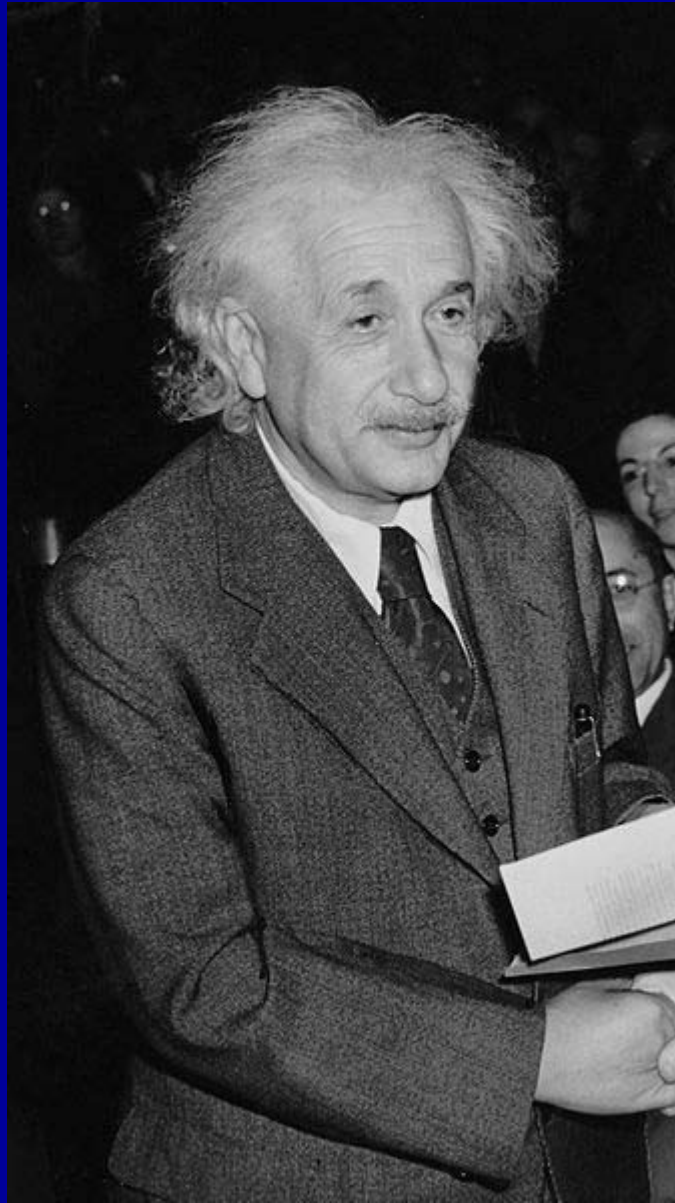
**1942: “Icepick” lobotomy has spread worldwide  
(5000 people per year)**

**1949: Moniz wins Nobel prize**

***Reinterpretation – sedation & control vs. treatment***

# What is abnormal?

Statistical deviance



# **What is a mental disorder?**

**A clinically significant behavioral or psychological syndrome or pattern that occurs in a person and that is associated with present distress (a painful symptom) or disability (impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain, disability, or an important loss of freedom. (DSM-IV)**

# 1840 - Dr. Ignaz Phillip Semmelweis

- rate of death from "childbed fever" in a ward served by physicians was 4x as high as mothers in a ward in the same hospital served by midwives
- deaths tended to occur in women in the same rows of beds
- psychological? (priest/last rites/death bell) - no
- same doctor?
- didn't wash hands (unmanly)
- wash hands in a solution of chlorine and lime -
- deaths fell from 12% to 1.2% in 15 months
- 1848 revolution - fired - stopped - back to 15% death rate
- Joseph Lister 1880
- lost sanity, told people in streets to wash hands and avoid physicians, died in a mental institution in 1865



# DIAGNOSIS

## *Myth of Mental Illness*

a label for the unusual, nonconforming, deviant

## *rates of schizophrenia*

Eskimos <i>nuthkavihak</i>	4.4/1,000
Yoruba <i>were</i>	6.6/1,000
Canada/Sweden	5.6/1,000

# David Rosenhan

Professor of Law and Psychology, Emeritus  
Stanford University

**Rosenhan study - pseudopatients who heard voices -  
admitted - then ok - 7/8 diagnosed as schizophrenics - 19-72  
days to get out - taking notes = "writing behavior" -  
"Schizophrenia, now in remission"**

# **Rosenhan (1973): On Being Sane in Insane Places**

**One pseudopatient described that he had had a close relationship with his mother but was rather remote from his father during his early childhood. During adolescence and beyond, however, his father became a close friend, while his relationship with his mother cooled.**

**His present relationship with his wife was characteristically close and warm. Apart from occasional angry exchanges, friction was minimal. The children had rarely been spanked.**

# **Rosenhan (1973): On Being Sane in Insane Places**

**“This white 39-year-old male . . . manifests a long history of considerable ambivalence in close relationships, which began in early childhood.**

**A warm relationship with his mother cools during his adolescence. A distant relationship to his father is described as becoming very intense. Affective stability is absent. His attempts to control emotionality with his wife and children are punctuated by angry outbursts and, in the case of the children, spankings.**

**And while he says that he has several good friends, one senses considerable ambivalence embedded in those relationships also.”**

# **Rosenhan (1973): On Being Sane in Insane Places**

- **After 7 to 52 days, released with Schizophrenia “in remission”**
- **“Patient resumes writing behavior”**
- **“Oral fixation” of mental patients**
- **Other patients were skeptical: "You're not crazy. You're a journalist, or a professor [referring to the continual note-taking]. You're checking up on the hospital."**

# DIAGNOSIS

## Criteria for diagnostic category

- **signs (what examiner sees) and symptoms (what patient says)**
- **syndrome = cluster of signs & symptoms**
- **can be reliably assessed**
- **validated by independent measures**
  - natural history = clinical course & outcome
  - response to specific treatment
  - causality - etiology & pathogenesis
- **Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-IV) - descriptions of signs & symptoms of psychiatric disease**

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DIAGNOSTIC AND STATISTICAL  
MANUAL OF  
MENTAL DISORDERS

FOURTH EDITION  
TEXT REVISION

DSM-IV-TR<sup>®</sup>

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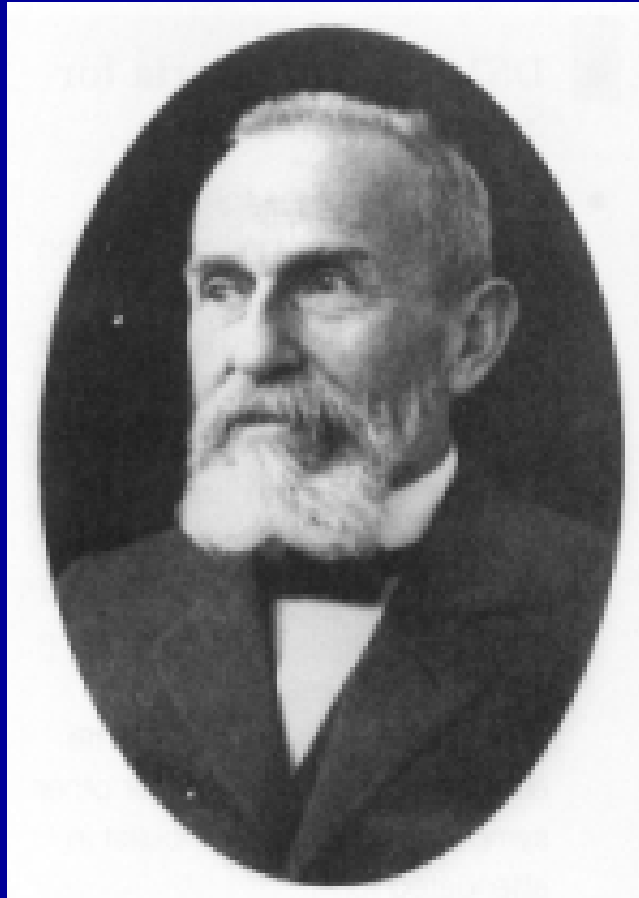
AMERICAN PSYCHIATRIC ASSOCIATION





# Three benefits of labeling

- Allocation of resources
- Coordination of services (treatment) and research
- Predicting behavior of individuals



# Eugen Bleuler

April 30, 1857 - July 15, 1939

# SCHIZOPHRENIA

**Bleuler 1911 - splitting of mental functions - disintegration of emotions, thought, and actions**

## Prevalence

- **1% of worldwide population - another 2-3% have schizotypal personality disorder**
- **no great geographical variation**
- **slight tendency for birth in winter or spring (virus?)**

## Syndrome

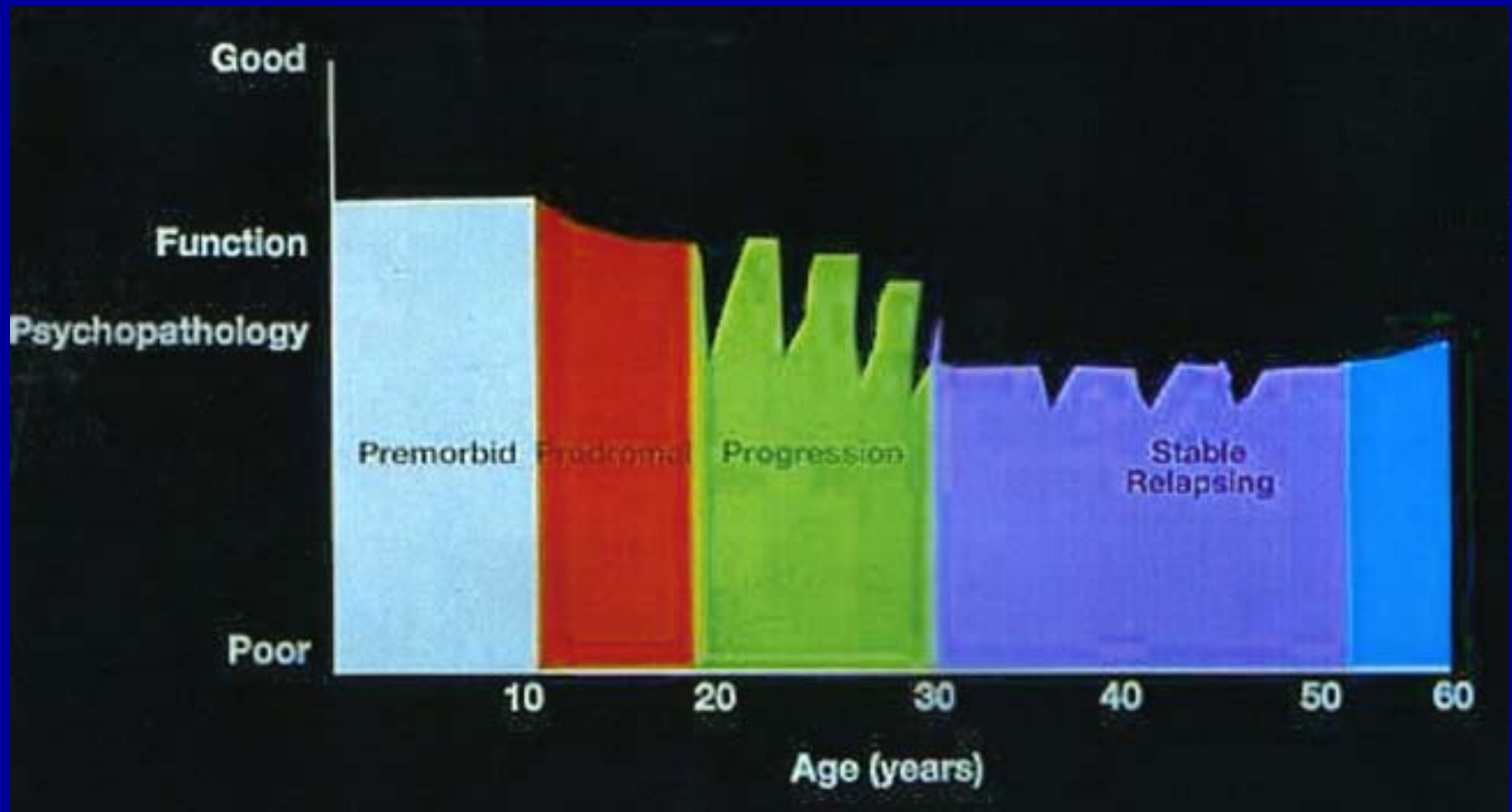
- ***Psychosis* – alteration in thoughts, perceptions, consciousness**
- **Thought disorder - disconnected, loose thoughts**
- **Abnormal beliefs or delusions**
  - **persecution, reference, control,**
  - **possession of thought**
- **Abnormal experiences/perceptions**
  - **auditory hallucinations**
- **Mood disorders - depression, anxiety**
- **Motor alterations - restlessness, purposeless overactivity**
- **Social function - withdrawal**
- **Negative - poverty of speech, poor attention span, flat affect, lack of motivation**
- **Positive - delusions, hallucinations, bizarre or disorganized behaviors**
- **Catatonia - mutism, abnormal posture**
- **Paranoia - persecution**

# SCHIZOPHRENIA

## Clinical History

- **Onset - late adolescence, early adulthood**
  - positive symptoms often most evident in acute schizophrenic episode
  - negative symptoms may predominate in chronic illness
  - quite variable
- **Outcome**
  - acute symptoms often respond positively to antipsychotic drugs
  - 25% may make full recovery
  - 25% remain severely disturbed
  - half may require long-term hospitalization
  - 50% more or less severe disorder fluctuating over many years

# Natural History of Schizophrenia



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# A Beautiful Mind

John F. Nash Jr.

*1994 Nobel Prize in Economics*

“John F. Nash introduced the distinction between cooperative games, in which binding agreements can be made, and non-cooperative games, where binding agreements are not feasible. Nash developed an equilibrium concept for non-cooperative games that later came to be called Nash equilibrium.”

Born June 13, 1928

Aptitude with math in school

Went to CMU for college

Princeton for Ph.D.

"The Bargaining Problem"

"Non-Cooperative Games"

to MIT in 1951 instructor

# SCHIZOPHRENIA

Hereditary Influences - Monozygotic twin concordance = 50%; dizygotic = 15% (same as siblings)

- lifetime probability is 10% in first-degree relatives vs. 1% in general population
  - one parent = 13%
  - two parents = 50%
- concordance rate for monozygotic twins similar whether reared together or not
- being adopted away from relatives with schizophrenia does not reduce risk
- higher in urban areas; higher for moving across cultures (stress?)
- multifactorial polygenic-environmental threshold model

**Amount of stress**

High

Low

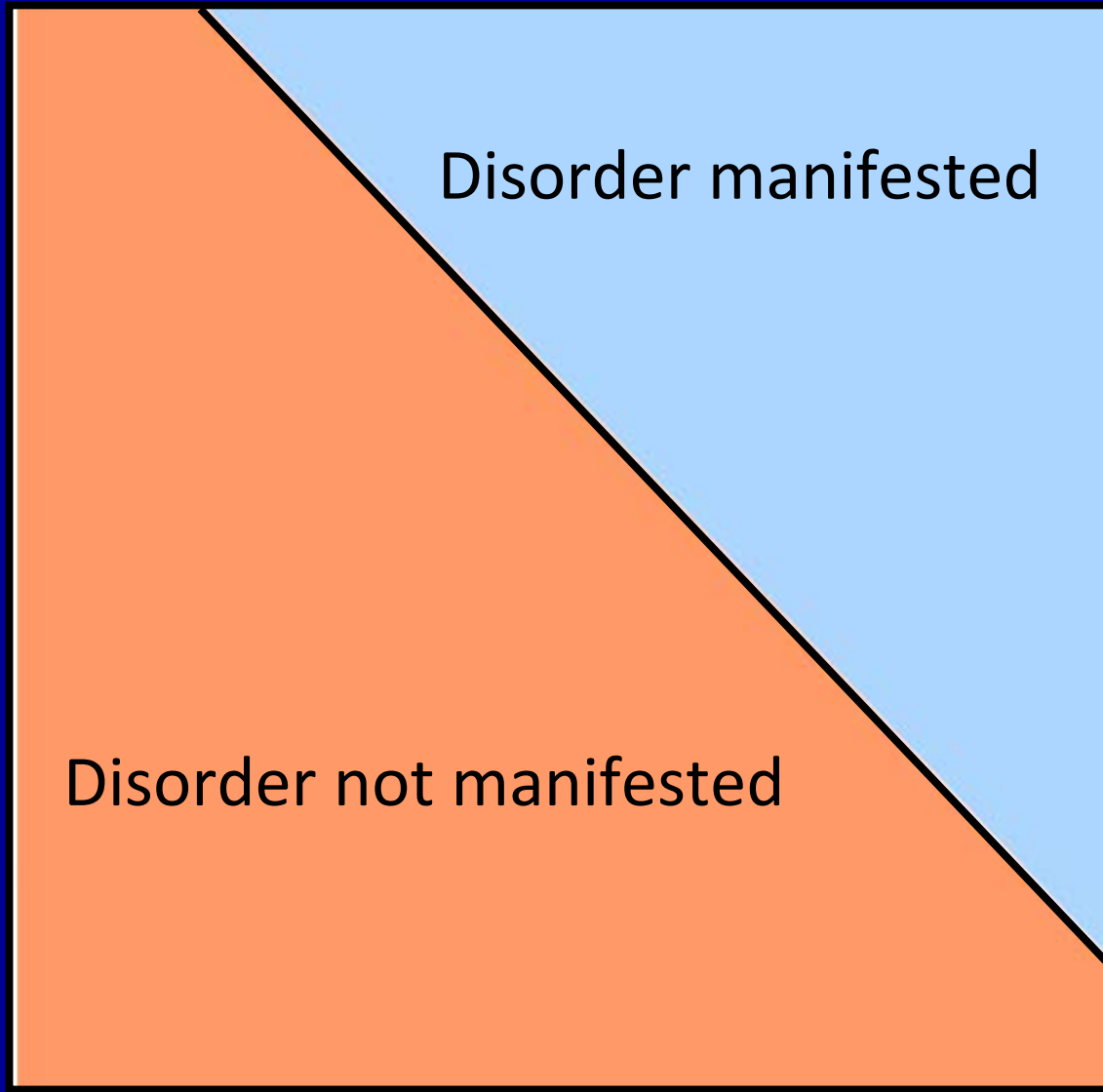
Low

High

**Predisposition for the disorder**

Disorder manifested

Disorder not manifested



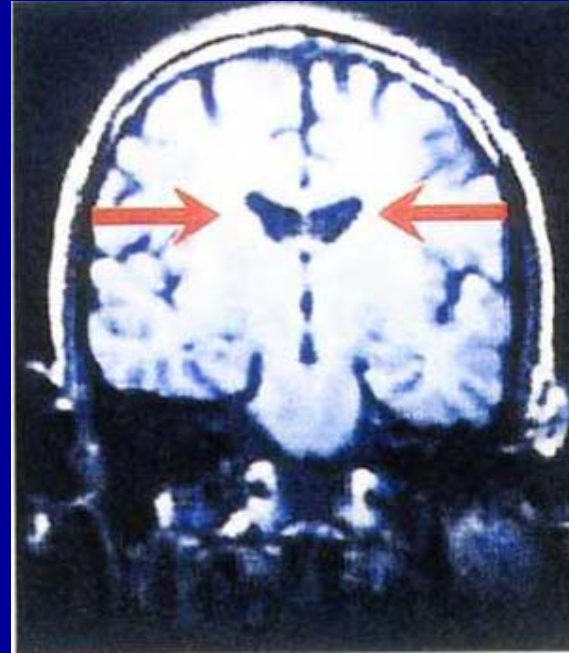
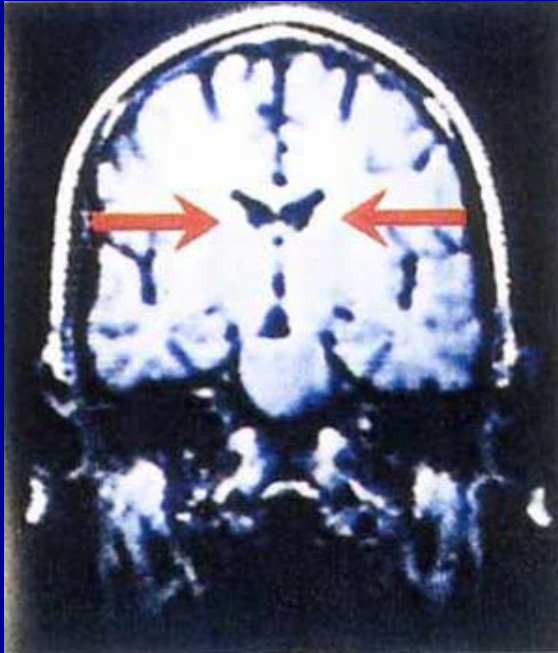


# SCHIZOPHRENIA

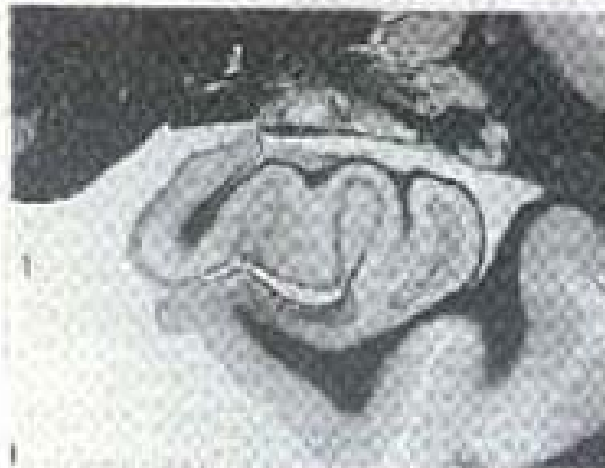
**No definitive biological marker - heterogeneous symptoms**

## Neuropathology

- **enlarged lateral ventricles, 3rd ventricles, widened sulci**
- **hippocampal involvement?**
- **hypofrontality sometimes seen in PET scans**
- **failure to increase frontal activation during Wisconsin card sorting task**
- **atypicality seen in behavior and brain of non-psychotic first-degree relatives**



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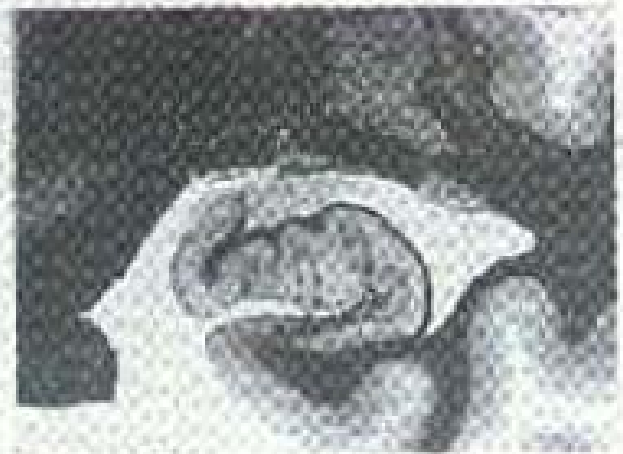
A 58 ♂ 24 yrs.



Bu 52 ♂ 23 yrs.



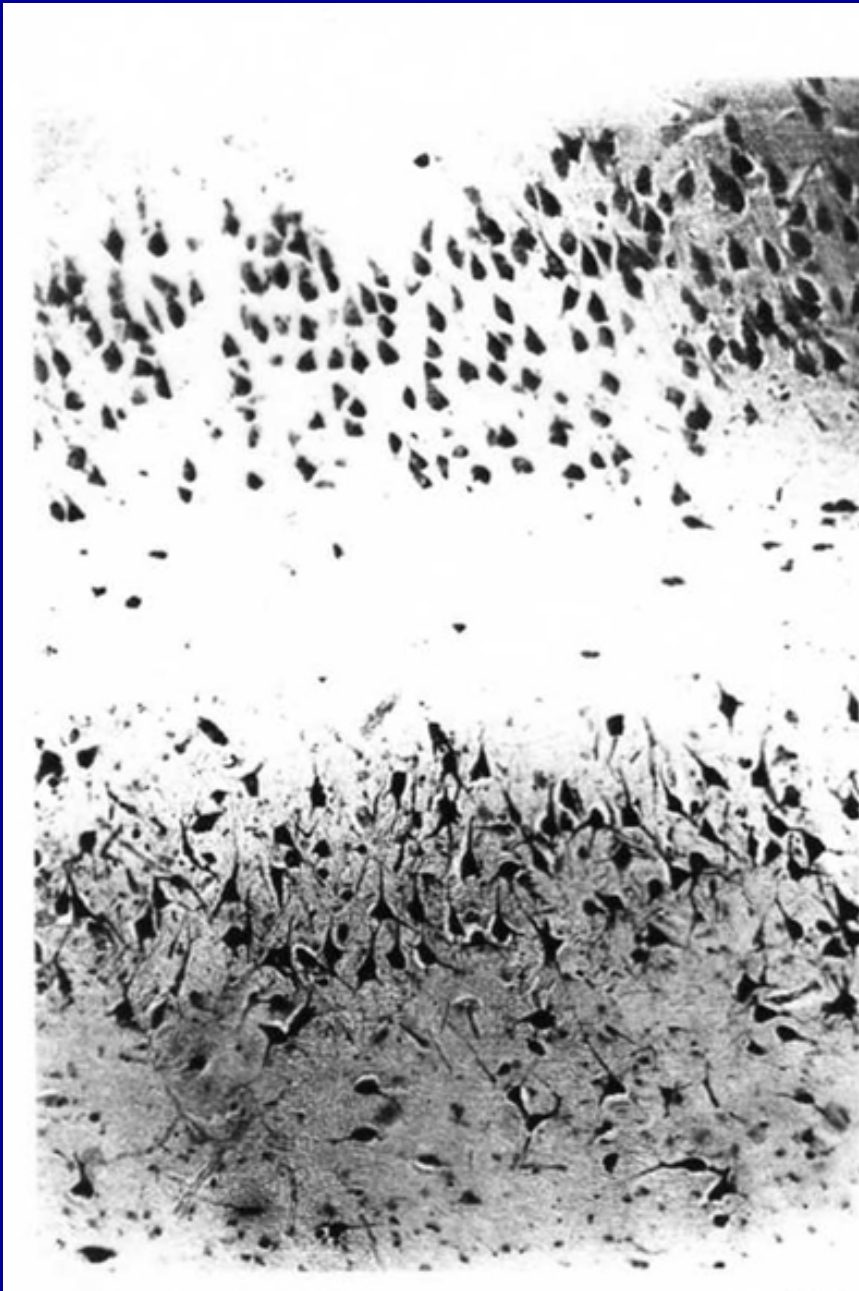
A 85 ♀ 30 yrs.



Bu 24 ♀ 27 yrs.

**Figure 15.16** The hippocampus of normal people (left) and people with schizophrenia (right)

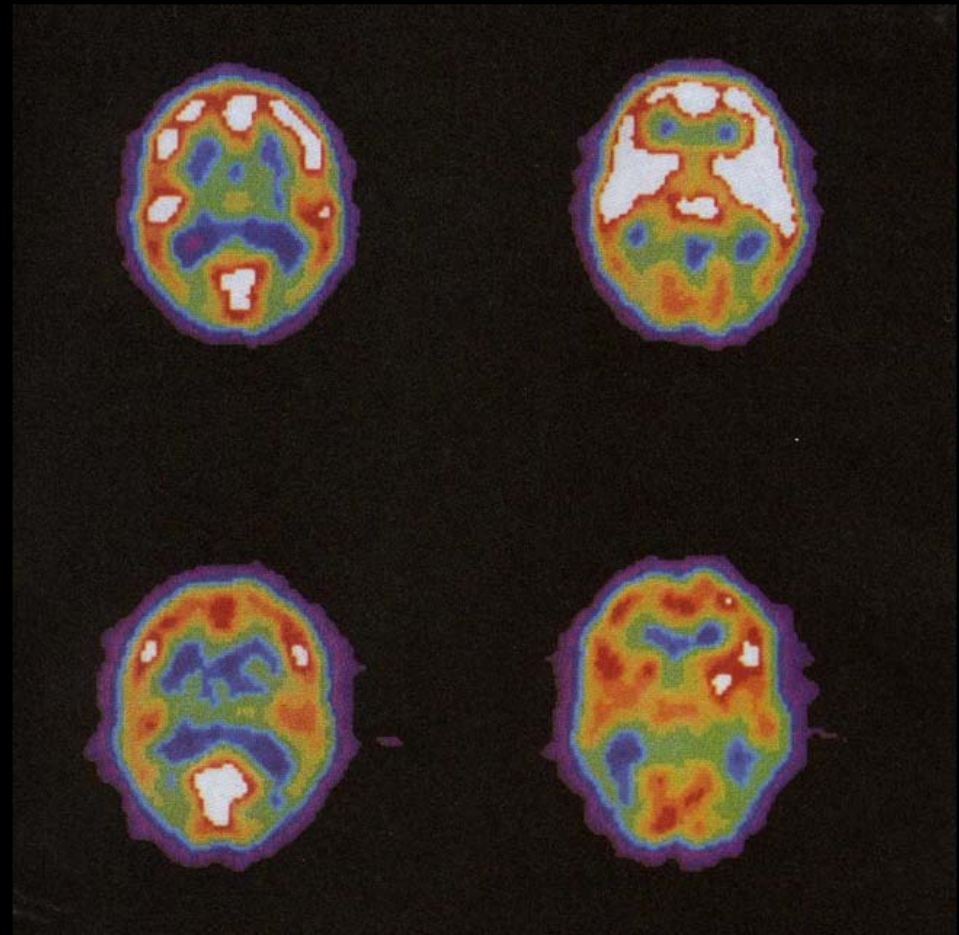
Notice the atrophy of the brains on the right. (Source: Bogerts, Meertz, & Schönfeldt-Bausch, 1985; photos courtesy of B. Bogerts)



**Figure 16.10**  
Cells of the  
hippocampus in a  
normal person (top)  
and a person with  
schizophrenia (bottom)  
*The cells on the bottom are  
arranged in a more haphazard,  
disorganized manner.*  
*(Photos courtesy of Arnold  
Scheibel.)*

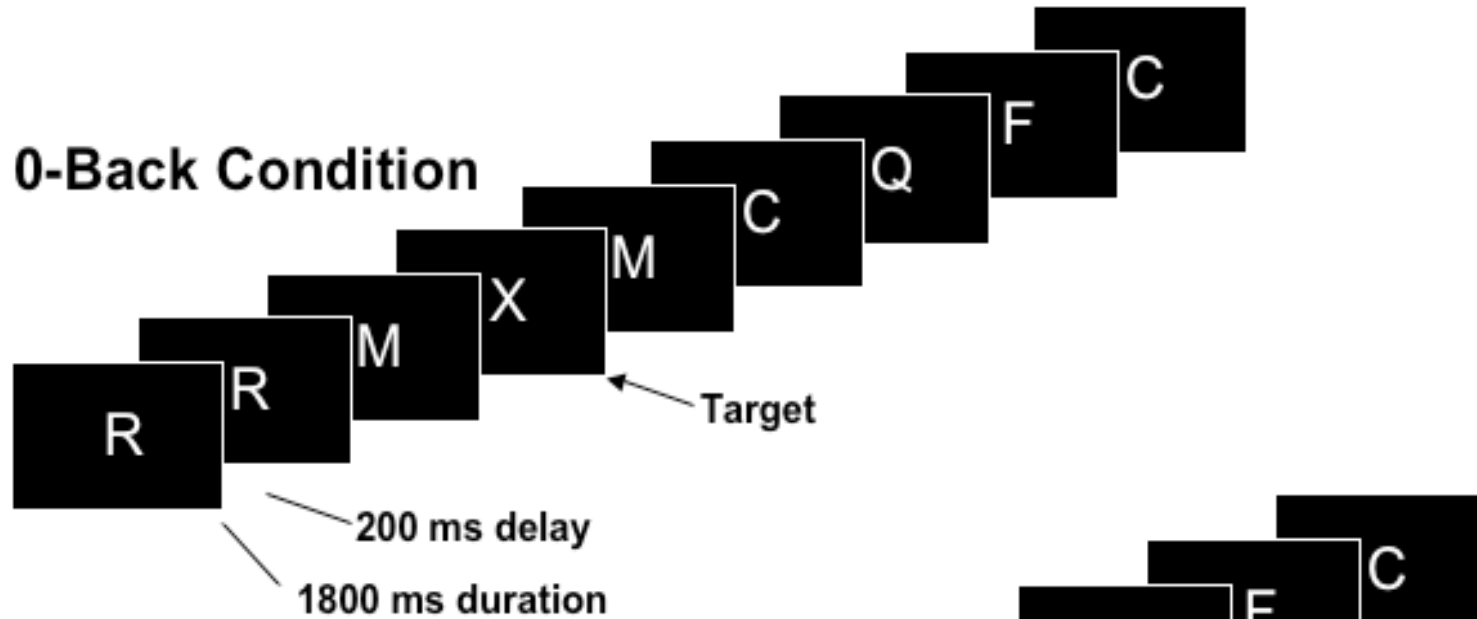
**Controls**

**Patients with  
schizophrenia**

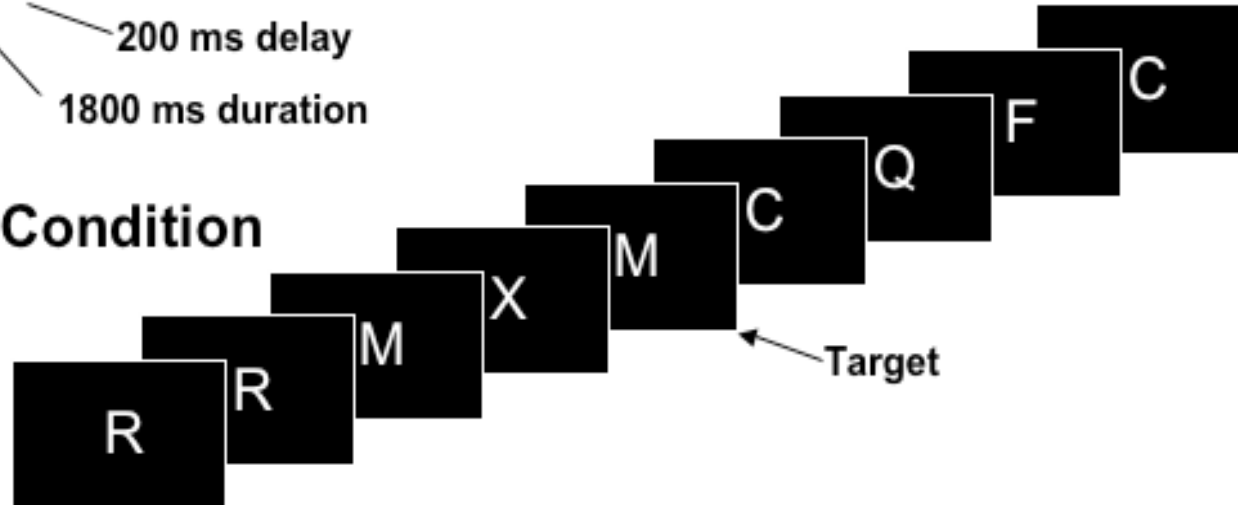


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## 0-Back Condition



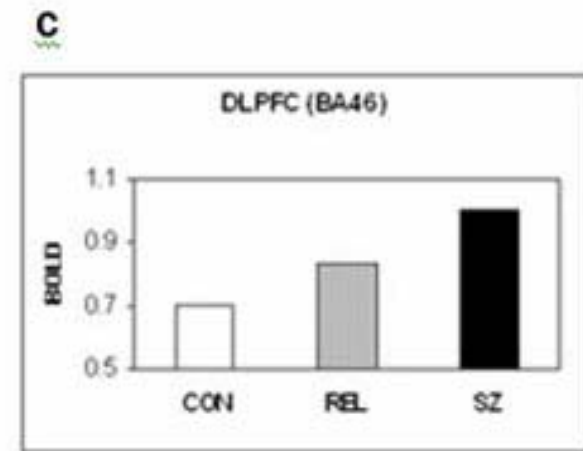
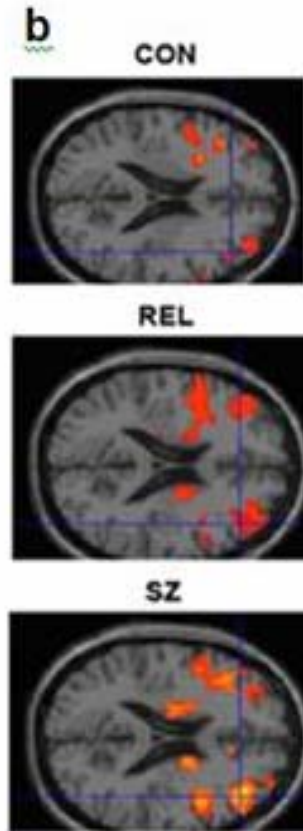
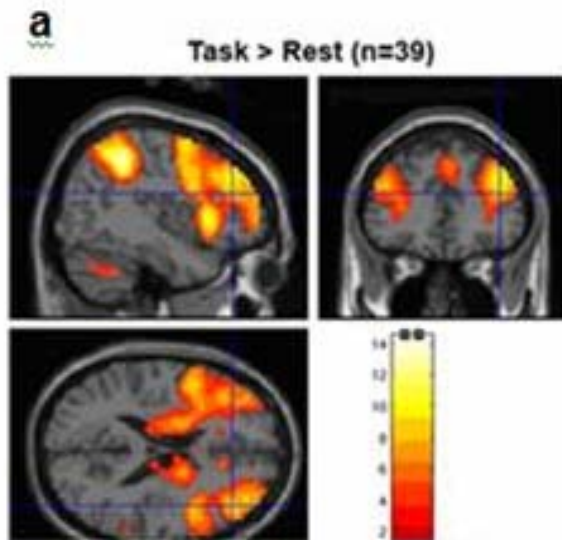
## 2-Back Condition



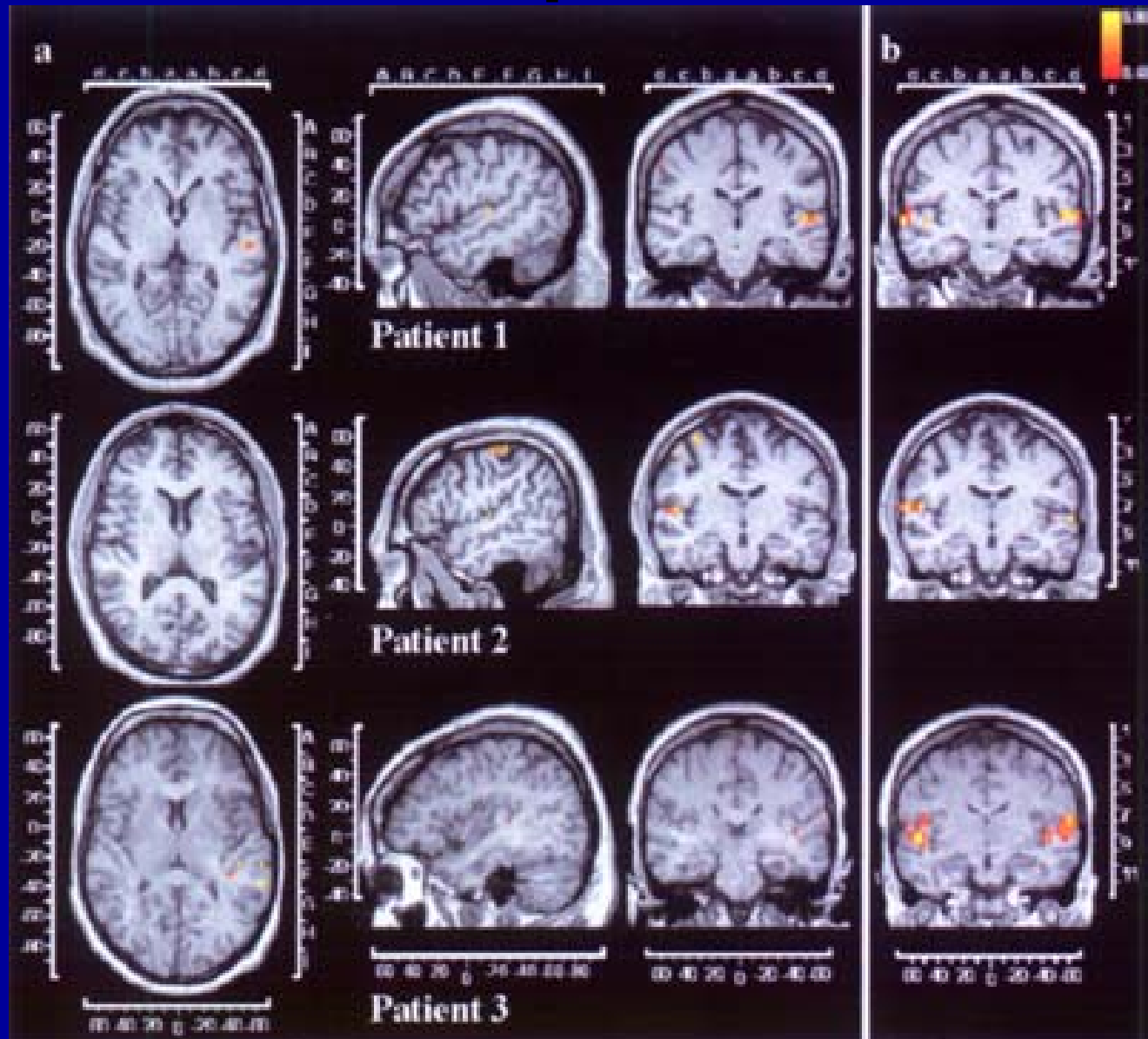
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# Working Memory Task

**CONTROLS > PATIENTS, accuracy;**  
**CONTROLS > RELATIVES, speed**



# Auditory Hallucinations in Patients with Schizophrenia



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# SCHIZOPHRENIA

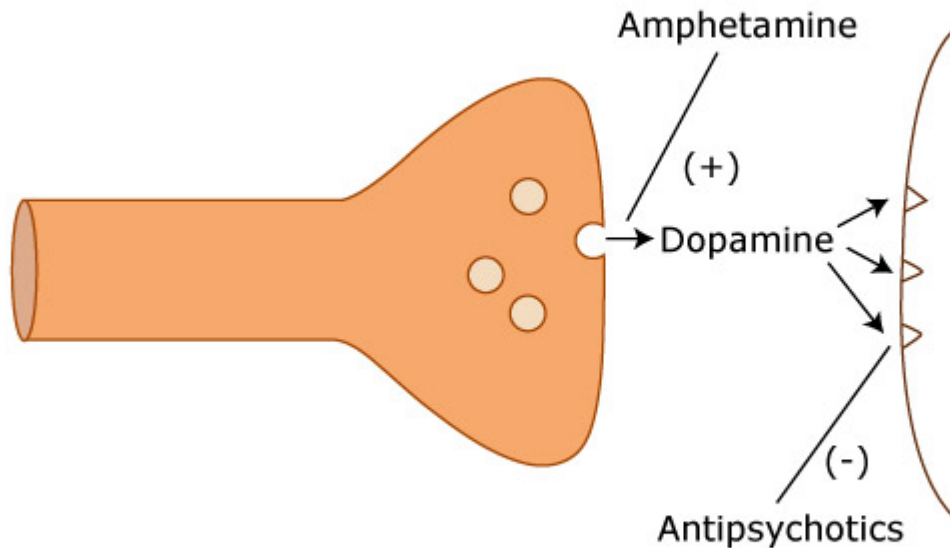
## Treatment

- neuroleptics
  - block post-synaptic dopamine receptors & release of dopamine from presynaptic neurons
- drug is fully effective at receptors within hours but maximal clinical effect takes weeks and remain for weeks after treatment ends
- side effects
  - early on - parkinsonian symptoms (20-40%)
  - later on - tardive dyskinesia (20%)
  - abnormal involuntary movements - smacking lips, chewing, tongue protrusion
  - clozapine (late 1980s) – no tardive dyskinesia, but other risks including liver function, reduction in white cells, must be monitored, expensive
  - behavioral therapy can enhance drug efficacy

## Dopamine theory of schizophrenia

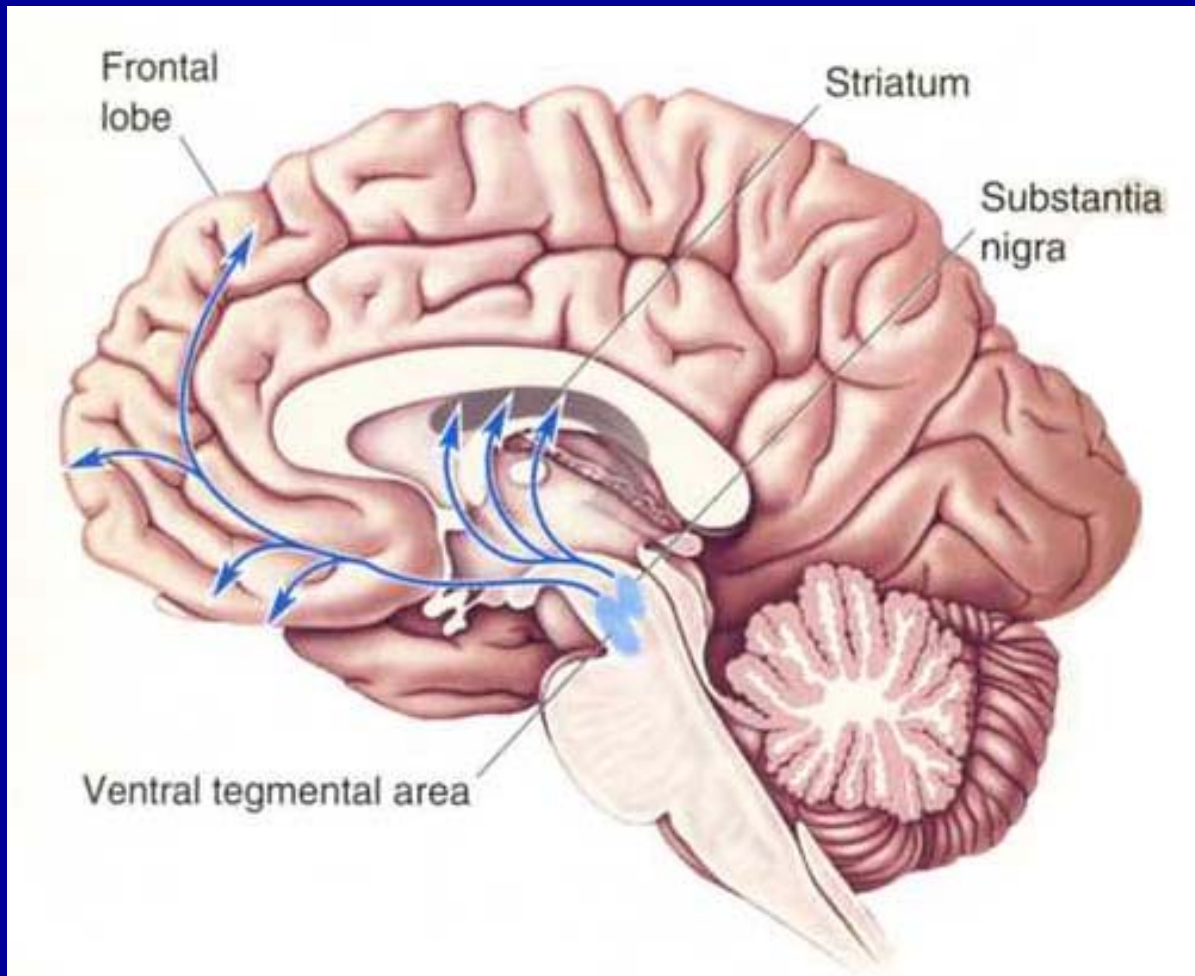
- antipsychotics
- amphetamine can induce something that looks like paranoid schizophrenia & it increases DA function
- weak & mixed results
- drug action vs. disease

## Schizophrenia



Basis of the 'dopamine hypothesis' of schizophrenia. The diagram shows a dopamine synapse and the effects of drugs (amphetamine and antipsychotics) that lead to the proposal of a 'dopamine hypothesis'.

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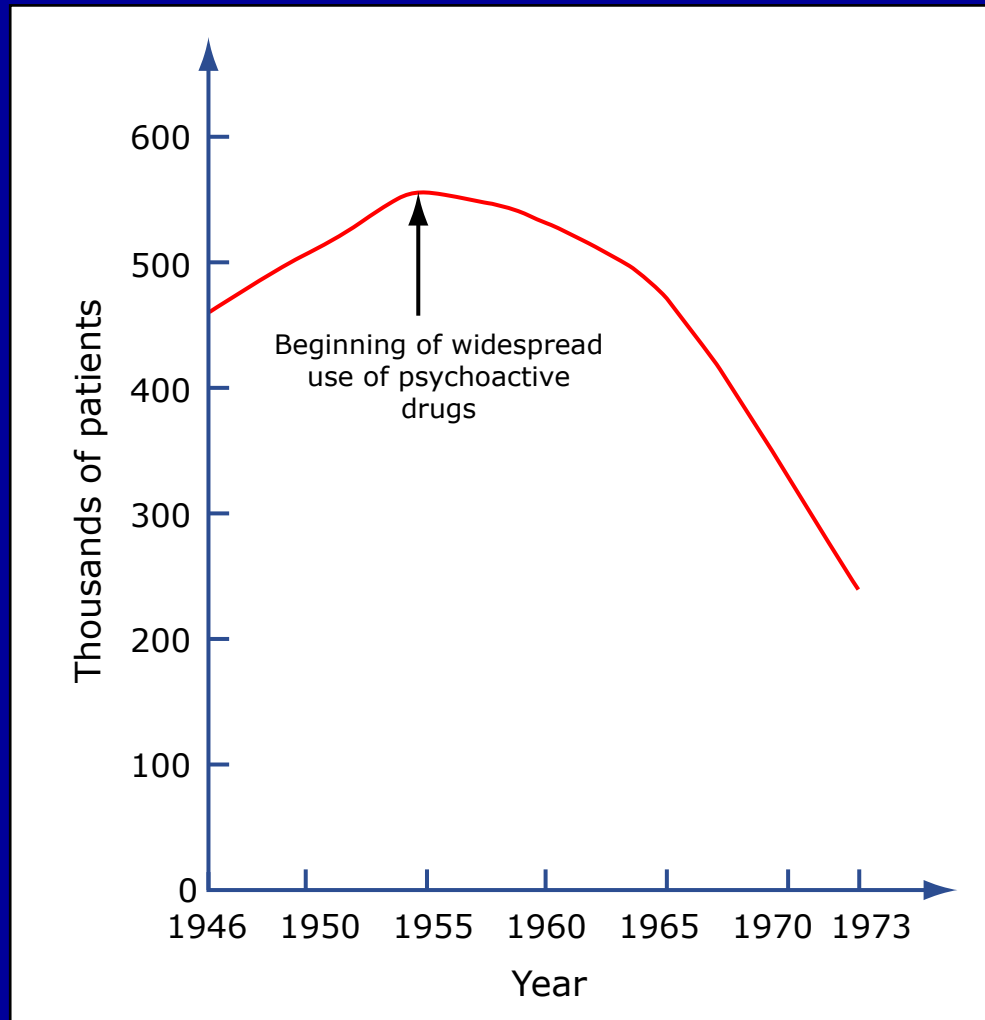


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