**Diathesis-stress model of mental disorders**

- **Diathesis**: Set of risk factors
- **Stress**: Set of trigger factors
- The disorder arises when both are present

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**Depression**

- A mood disorder:
  - Disabling sadness, hopelessness, apathy
  - Loss of pleasure, motivation
  - Disturbances of sleep, diet, other bodily functions
- Lifetime prevalence:
  - 7%-12% in men
  - 20%-25% in women

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**Cognitive factors**

- Example: Negative *explanatory style*
  - Attributing bad experiences to internal, global, and stable causes
  - Internal: It’s my fault, not someone else’s
  - Global: I do everything wrong like this
  - Stable: It’s always been this way and always will be
- One intervention: *cognitive-behavioral therapy*
  - Designed to change patterns of thinking and behavior

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**Biological factors**

- Unknown factors treated through *electroconvulsive therapy (ECT)*
  - Used as a last resort for intractable depression
- Excessive activation in specific brain areas
  - Experimental treatment: Deep-brain stimulation
- Serotonin imbalance
  - Treated with drugs like Prozac
  - But there are questions about efficacy
Deep brain stimulation
(Mayberg, Lozano, et al., 2005)

Area 25

How it might work

• Stimulating white matter can deactivate nearby grey matter
• Area 25 is connected to other brain regions:
  – frontal lobes (cognition), hypothalamus (appetite), brain stem (sleep), insula (emotion, pain)
• Mixed results since the 2005 studies
  – In trials with sham-stimulation controls

Challenges in evaluating depression therapy

• Placebo effects
  – Placebo: An inert or sham treatment that helps anyway because the patient believes it will help
  – Can alleviate negative cognition
• Spontaneous remission
  – Depression is cyclical, and can lift by itself
  – If Bob starts treatment when he is depressed, and gets better, was it the treatment, or remission?

Regression to the mean

• Spontaneous remission is an example of regression to the mean
• Regression to the mean can occur when:
  (1) A group is defined by extreme values on a variable, and
  (2) That group is measured on the same variable again, later

Regression to the mean

• Low-performing students are selected for a remedial education program
  – Their scores improve on a later test
  – Did the program work?
• High-performing students are admitted to a selective college
  – In college, some don’t perform to expectations
  – Did they get less smart?
Regression to the mean

• An instructor notices a pattern: Every person she singles out for praise goes on to screw up
  – Should she stop praising people?

Evaluating anti-depressants

(Kirsch & Sapirstein, 1998)

• Question: What is the role of placebo effects and spontaneous remission?
  – Used meta-analysis: A study of studies
• 19 pharmacological studies, each with:
  – Pre/post, double-blind design
  – Placebo control group
• 19 psychotherapy studies, each with:
  – Pre/post design
  – A wait-list or no-treatment control group

Evaluating anti-depressants

• The active drug accounted for only 25% of total improvement in active drug conditions
  – The rest was spontaneous remission or placebo
• Kirsch attributes the 25% to publication bias
  – Studies that don’t show results don’t get published