Psyc 101, Pomerantz
Section 14: Psychological Disorders

Abnormal Behavior: What is "abnormal," and how does it differ from merely unusual?
- Cognitive symptoms
- Emotional symptoms
- Behavioral symptoms

Background question: how can we understand and treat a system that has broken down if we don't fully understand how it works when it is intact?

Psychological Disorder: Constellation of symptoms that create significant distress or impairment in work/school, family/relationships, and daily living in general

Three key factors:
- Distress (e.g., repeatedly bursting into tears, although sometimes not so easily observed from the outside, as with chronic anxiety)
- Disability (e.g., panic attacks; overall a high rate of occurrence- 48% of Americans report experience one of the top 30 common disorders at some point, and for every 100 workers, 37 work days/month are lost)
- Danger (e.g., suicide)

How abnormal is abnormal?
- It is not sufficient for a behavior simply to be deviant from mainstream culture to qualify as abnormal or as a psychological disorder.
- Definition of "deviant" changes over time and across cultures (e.g., homosexuality was listed in the DSM until 1973).
- Clearest dividing point: psychosis, characterized by a clear impairment in the ability to perceive and comprehend reality, coupled with a gross disorganization of behavior and maladaptive behavior.
  - Hallucinations
  - Delusions

A good, trustworthy source of information about psychological disorders is here.

History underlying psychopathology
- Ancient Greece: imbalances of yellow bile, phlegm, blood, black bile
- 17th century New England: the devil and witches in Salem, Massachusetts 1692
- Bedlam: Bethlem Royal Hospital near London
- 20th century US, Europe: Freudian explanations predominate: psychological disorders are a result of conflict between the id, the ego, and the superego
- 1960s: Thomas Szasz, "myth" of mental illness, simulated patients passing
- Today: biopsychosocial models addressing multiple levels of explanation
- Current model: diathesis-stress model:
  - Biological predisposition to the disorder (diathesis)
  - Specific stress factors in the environment
  - Neither factor alone suffices to cause illness
  - Genetics, biology, environment, learning, and perceived stress combine

DSM: Diagnostic and Statistical Manual of Mental Disorders (official website)

- Predominant system of categorization in the US today
- Began in 1952, based on psychodynamic theory
- Later editions more free of any one theory
- Current version (DSM-IV) published in 1994 and has five axes (dimensions)
    - Axis I: Clinical disorders
    - Axis II: Personality disorders and retardation
    - Axis III: General, acute medical conditions
    - Axis IV: Psychosocial and environmental factors
    - Axis V: Global assessment of functioning, including highest level in past year

    DSM-IV codes: www.psychnet-uk.com/dsm_iv/_misc/complete_tables.htm

    Some criticisms of the DSM-IV
    - General concerns about validity, reliability
    - Too many categories?
    - Category boundaries too blurry, overlapping
    - US-centric?
    - Mixes medical conditions with psychological conditions
    - DSM-V is tentatively scheduled for publication in 2011

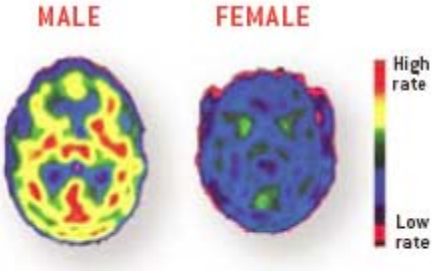
Note on "insanity": it is legal term, not a psychological term, dating back to England in 1843 when Daniel M'Naghten was found not guilty of trying to murder the Prime Minister at God's instructions. Today this defense is rare, and most such people are sentenced to mental institutions, perhaps worse than jail (cf. Andrea Yates).

Similarly, other terms like "nervous breakdown" are not in the DSM.

1. **Mood Disorders**: persistent or episodic disturbances in emotion that interfere with normal functioning in at least one realm of life.

    Depression: Major Depressive Disorder (MDD) – at least two weeks of depressed mood or loss of interest, along with at least four other symptoms:
    1. Depressed mood most of day almost daily
    2. Markedly diminished interest/pleasure in most activities
    3. Significant weight loss w/o dieting
    4. Daily insomnia or hypersomnia
    5. Daily psychomotor agitation or retardation
    6. Fatigue
    7. Sense of worthlessness or excessive guilt
    8. Inattention or indecisiveness
    9. Recurring thoughts of death/suicide w/o specific plans

MDD is the leading cause of absenteeism / presenteeism in the workplace
Wide range of durations across people, from single episode to chronic depression
Depression appears in all cultures
In US, women are diagnosed with depression 2 -3 times more frequently than men
Overall rate of depression appears to be increasing
~30% of Americans with MDD attempt suicide; half succeed
Women are three times more likely to attempt suicide, but men succeed in higher proportions (perhaps because men are more likely to use guns, women pills).
Suicide is 11th leading cause of death in the US, but 3rd for those 15 -24 years.
White Americans commit suicide more often than do African Americans
Depressed people can be successful, creative, productive; e.g., Winston Churchill, who was pursued by his "black dog."



PETSCANS, such as those above made by Mirko Diksic and his colleagues at McGill University, reveal that the brains of males produce serotonin at a faster rate than those of females. Serotonin influences mood, so the finding may help make sense of the observation that more women than men suffer depression.

Source: Scientific American, May 2005

Dysthymia: a milder form of depression

- No episodes of extreme depression
- Experience a depressed mood most of the time for two years
- Experience at least two other symptoms of depression
- Affects ~6% of US population

Bipolar disorder (formerly 'manic depression'): periods of *mania*, alternating in some people with periods of depression
Manic phase: at least one week of abnormally elevated, expansive, or irritable mood

- Grandiosity or unreasonably elevated self-esteem
- Reduced need for sleep
- More talkative, experience pressure to keep talking
- Racing thoughts
- Easily distracted by extraneous information
- Heightened goal-directed activity
- Over-involvement in pleasure-seeking even if risky (e.g., affairs)

~1% of Americans have bipolar disorder

Cycling between mania and depression, when that occurs, usually takes place over years, although for some it is rapid (4 cycles/year)

Hypomania: a milder version with less severe mania
Useful website: www.nimh.nih.gov/publicat/bipolar.cfm

Causes of mood disorders:

- MDD: twin studies show that if one MZ twin has it, the other is four times more likely to develop it than would a DZ twin
  Note: these data come from the National Comorbidity Survey (NCS)
- MDD patients show abnormally low activity in frontal lobes, which connect to the amygdala and to structures producing serotonin, norepinephrine, dopamine.
- MDD associated with smaller hippocampi (affecting memory)

- Bipolar disorder twin studies: if one MZ twin has it, the other has an 80% chance of developing some mood disorder (not necessarily BD)
- First episode of BD usually triggered by a stressful event
- Bipolar disorder: enlarged amygdala
- Bipolar: unusual temporal lobe activity during manic episodes
- Neurotransmitters involved in BD: serotonin, norepinephrine, substance P (new)
- The environment: Incidence of depression peaks in Dec and Jan, when duration of sunlight is shortest (Seasonal Affective Disorder); sunlight may restore serotonin levels.

Behavioral and social features of depression

- Unresponsive
- Negative language, soft voice, short sentences
- Little eye contact
- Negative view of self, world, future (Beck's negative triad)
- Attributional style is to blame self (rather than external factors)
- Decreased contact with others (which reduces social reinforcement)
- Family environment matters: critical families increase chances for relapse
- Depression can be contagious (as is true for anger and anxiety)

2. **Anxiety Disorders**: extreme, unwarranted fear and anxiety, coupled with attempts to avoid these feelings.
   Panic disorder, panic attacks
   - Palpitations, breathing difficulties
   - Chest pain
   - Nausea
   - Sweating
   - Dizziness
   - Fear of "going crazy", of impending doom
   - A sense of unreality

- Lead to changes in behavior, in turn yielding agoraphobia (abnormal fear of open or public places).

Very rapid onset, on the order of minutes; lasts minutes to hours
~3% of population worldwide will experience a PA
Evidence for a biological vulnerability for PD, hypersensitivity of the locus coeruleus in the brainstem (seat of an alarm system, rich in norepinephrine)
Strong right frontal lobe activation in EEG to threatening stimuli: triggering flight mechanism
Role of environment, obvious stressors is complex

Phobias: exaggerated fear of a class of objects/events coupled by extreme avoidance

- Social phobias: fear of public embarrassment or humiliation
  - ~13% of Americans experience these
  - the activity can be as mundane as signing a personal check, drinking a cup of coffee, buttoning a coat, or eating a meal.
  - the most common social phobia is the fear of speaking in public.

- Specific phobias: occur in presence of a particular object/event (or in anticipation of it.
  - They often involve animals, environmental threats, hazards that can penetrate the body (needles, etc.)
  - Specific situations: enclosed spaces – claustrophobia; heights – acrophobia; flying – pterygophobia; . water – hydrophobia)
  - Animals, particularly spiders, snakes or mice; storms; dentists; tunnels; bridges; not being able to get off public transportation quickly.

Useful websites: www.nlm.nih.gov/medlineplus/phobias.html
www.psych.org/public_info/phobias.cfm

Phobias: twin studies show a very large (albeit not 100%) genetic component
Humans seem biologically prepared to develop certain phobias (e.g., heights, snakes) but not others (kittens, flowers?). Cf. Garcia effect.
Possible hyperreactivity of the amygdala
Possible role of classical and operant conditioning in phobias (Little Albert), but evidence is mixed. A clearer role for observational learning, however.

Generalized Anxiety Disorder (GAD): not specific to any particular object/event (free-floating anxiety)

- General, persistent, constant, and often debilitating levels of anxiety
- No specific triggers; cause is hard to identify
- Can last many years
- ~5% of people report experiencing GAD at some point in their lives

Stress Disorder, Post Traumatic Stress Disorder (PTSD)

- The individual experiences or witnesses a major traumatic event: war, physical/sexual abuse, natural disasters
- Individual responds with fear and helplessness
- This is followed by three sets of symptoms:
    - Persistent re-experiencing of the trauma
    - Persistent avoidance of anything associated with it
    - Heightened arousal, hypervigilance, reactivity
- Also, Acute Stress Disorder (acute means brief)
    - A traumatic event leads to mental disturbance lasting less than a month.

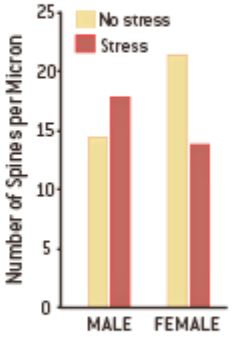
Effect of stress on male and female rat brains: stress increases dendrite density in the hippocampus of male rats

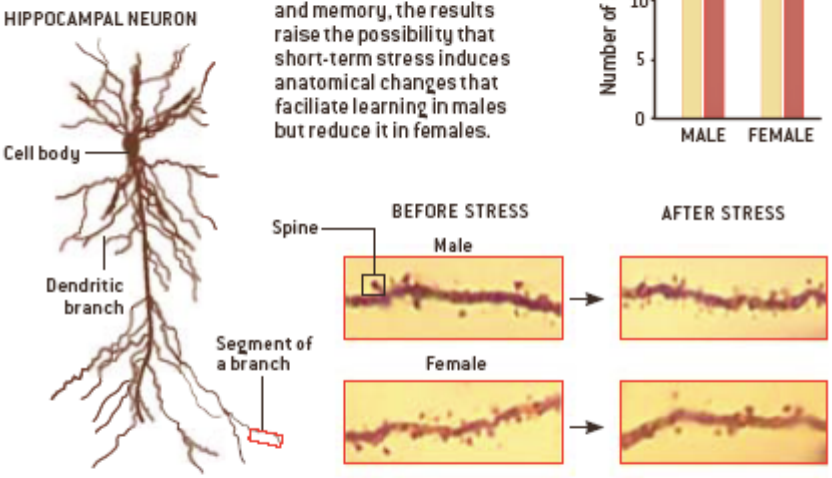
THE STRESSED HIPPOCAMPUS

The hippocampus in male rats reacts differently to both acute and chronic stress than does the same structure in females.

ACUTE STRESS

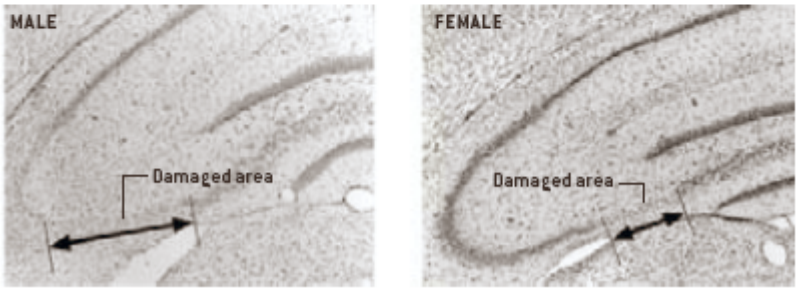
Short-term stress caused the density of dendritic "spines" in hippocampal neurons to increase in males but to decrease in females (*micrographs* and *graph*) studied by Tracey J. Shors of Rutgers University and her colleagues. The spines are the sites where dendrites receive excitatory signals from other neurons. Because the hippocampus is involved in learning and memory, the results raise the possibility that short-term stress induces anatomical changes that faciliate learning in males but reduce it in females.





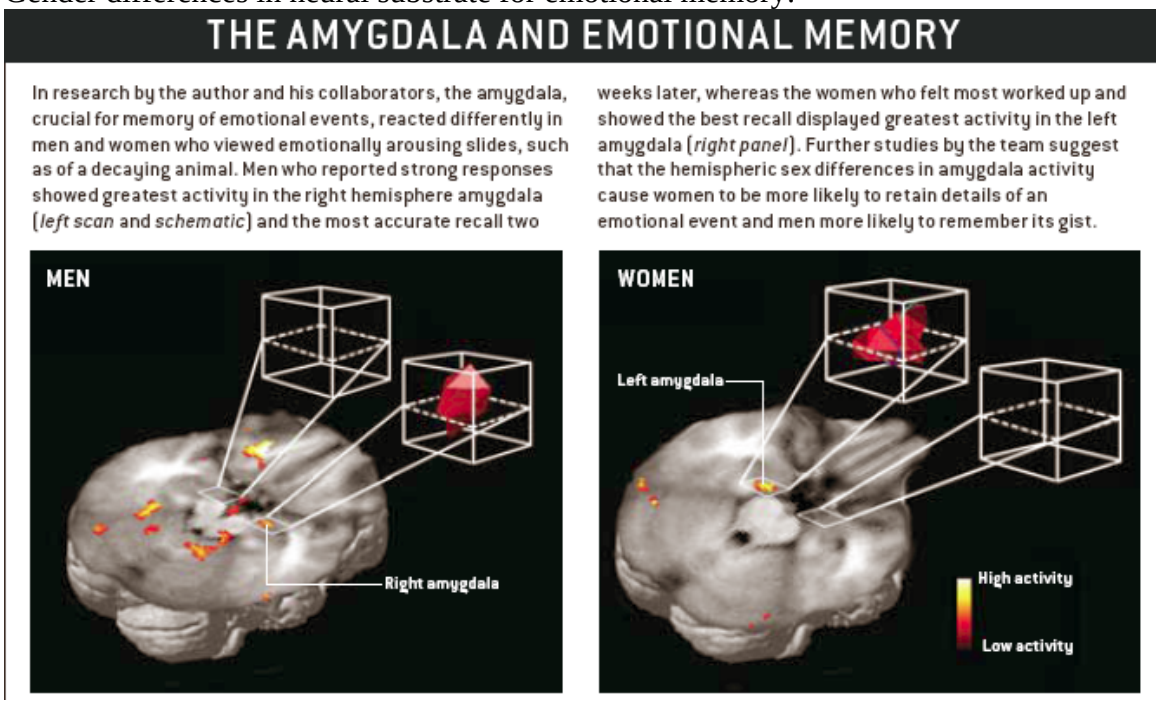
CHRONIC STRESS

Long-lasting stress, in contrast, may leave the male hippocampus more vulnerable to harm. When Cheryl D. Conrad, J. L. Jackson and L. S. Wise of Arizona State University exposed chronically stressed rats to a nerve toxin, males, but not females, suffered more damage than same-sex controls did. The micrographs below are from stressed subjects.



Source: Larry Cahill, Scientific American, May 2005

Gender differences in neural substrate for emotional memory:



Source: Larry Cahill, Scientific American, May 2005

Obsessive-Compulsive Disorder (OCD)

- Marked by the presence of *obsessions*: recurrent, persistent thoughts, impulses, and images that are obtrusive, inappropriate, and not easily ignored.
- *Compulsions* often accompany obsessions but are not required: an irresistible impulse to perform a seemingly meaningless act repeatedly and in a stereotypical fashion; so as to reduce anxiety.
- Moderate examples: avoiding cracks in sidewalks, frequent hand washing (Lady MacBeth)
- ~2.5% of population experiences OCD at some point
- Mild, everyday examples from people w/o OCD:
    - Tune playing in your head that you cannot stop
    - Did I remember to lock the door before I left home?

OCD and caudate nucleus

3. Schizophrenia (see Dr. Burnett's lecture notes)

A psychotic disorder with profound effects on thought, behavior, and emotion
Note: it's not 'split personality'!
Instead, it's characterized by:

- Restricted range of affect
- Odd or disorganized thoughts
- Delusions or hallucinations

Specific behaviors

Positive symptoms: what's present that should not be

- Delusions (of persecution, grandeur, reference, control)
- Hallucinations
- Disordered behavior
- Disorganized speech
    - Samples

Negative symptoms: what's absent

- Flat affect
- Alogica (minimal, sluggish verbal responses)
- Avolition (missing goal-directed behavior)

Four subtypes of Schizophrenia (DSM-IV classification)

- Paranoid: delusions of persecution
- Disorganized: speech and behavior are disorganized, inappropriate
- Catatonic: bizarre, immobile or relentless motor behaviors
- Undifferentiated: none of the above in particular

Causes of Schizophrenia

- Twin studies: clear role of genetic factors, but not 100%
- If one twin is diagnosed, a MZ twin has 47% chance, DZ has 18%. (Note: base rate in population is ~1%)
- Thus, consistent with the diathesis-stress model, it's a combination of genetic predispositions with environment (including prenatal) influences that is associated with schizophrenia
- Neural features: Enlarged ventricles, reduced brain volumes in other areas

4. Dissociative disorders

Dissociative disorders are characterized by disruptions in the usually integrated functions of consciousness, memory, or identity, often caused by a traumatic or stressful event.

- identity confusion: uncertainty about one's identity
- identity alteration: assuming a new identity
- derealization: a sense that familiar objects/environments have somehow changed or seem unreal
- depersonalization: a sense of observing oneself from the outside
- amnesia: loss of memory (especially episodic memory, about personal information surrounding a traumatic experience)
- dissociative fugue state: person cannot remember some/all of the past, and they disappear abruptly from home/work/school. A rare occurrence.
- dissociative identity disorder (DID): multiple personalities surface
    - Each *alter* has a unique personal history, identity, etc.
    - Alters differ even in EEG, visual acuity, pain tolerance, sensitivity to allergens, response to insulin
    - The alters don't all know/know of each other
    - "Split personality", e.g., *Three Faces of Eve*

- Those with DID frequently were victims of physical abuse in childhood
- Controversy: some skepticism about how often DID actually occurs
  - Normals attempting to role-play DID show some of the same symptoms
  - If real, perhaps DID should be considered a variant of PTSD

Prevalence of dissociative disorders is not well established; some claim as high as 10%
Symptoms must be severe enough to cause distress or cause impairments
Useful sites: www.nami.org/Content/ContentGroups/Helpline1/Dissociative_Disorders.htm
www.psychnet-uk.com/dsm_iv/dissociative_identity_disorder.htm

5. Eating Disorders: severe disturbances in eating

- *Anorexia nervosa*: inability/unwillingness to maintain even a low "normal" weight coupled with an intense fear of gaining weight
  - Powerful gender link: 90% female
  - Often leads to hospitalization, 10% of those hospitalized die there
  - Genetic predisposition: MZ twins show 56% concordance rate, link to a family's obsessive personality traits
  - Diagnotic requirements:
    - Distortions in body image
    - Intense fear of becoming overweight
    - Refusal to maintain a normal weight
    - Obsessions with thoughts of food
    - Intellectual knowledge that they are underweight, but they cannot "see" this and deny any problem exists
  - Sometimes accompanied by:
    - Binge eating
    - Purging
    - For classic anorexia sufferers, it's solely dietary restriction

- *Bulimia nervosa*: a disorder characterized by recurrent binge eating followed by some attempts to prevent weight gain
  - Purging vs. non-purging types (fasting, excessive exercise)
  - Note: purging is an ineffective form of weight control!
  - Factors
    - Genetic predisposition: MZ twins show 23% concordance rate
    - Gender
    - Culture
  - Lifetime prevalence 0.5%-4%

Useful site: www.nlm.nih.gov/medlineplus/eatingdisorders.html

6. Personality disorders (Axis II of DSM)

Personality disorders are sets of relatively stable personality traits that are inflexible, maladaptive, and cause distress and difficulty with normal daily functioning.

- Antisocial personality disorder: a pattern of disregard or violation of rights of others
    - The most-studied personality disorder
    - Previously known as *psychopathic* or *sociopathic* personality disorder
    - Symptoms: superficial charm; egocentrism; impulsive, reckless, and deceitful behavior w/o regard for others' safety; blaming others; lack of conscience, empathy, or remorse
    - APD's talk a good line, manipulate others, but seem not to know or care how others feel
    - Three times more common in males
    - Thirty times more common in prisoners than in non-prison populations in U.S. (2% vs. 60%); similar figures elsewhere in world

- Avoidant personality disorder: a pattern of social discomfort, feelings of inadequacy, hypersensitivity to criticism
- Borderline personality disorder: a pattern of instability in relationships, self-image, feelings and pronounced impulsivity. Rapid swings from liking to hating another person; recurrent suicide gestures
- Dependent personality disorder: clings, submissive behavior, strong need to be taken care of
- Histrionic personality disorder: excessive attention-seeking, expression of emotion
- Narcissistic personality disorder: exaggerated sense of self-importance, need for admiration, lack of empathy
- Obsessive-compulsive personality disorder: preoccupation with perfection, orderliness, control (but w/o Os or Cs of OCD)
- Paranoid personality disorder: suspiciousness and distrust of others
- Schizoid personality disorder: detachment for social relationships, a narrow range of displayed emotions
- Schizotypal personality disorder: extreme discomfort in close relationships, odd or quirky behavior, cognitive or perceptual distortions