

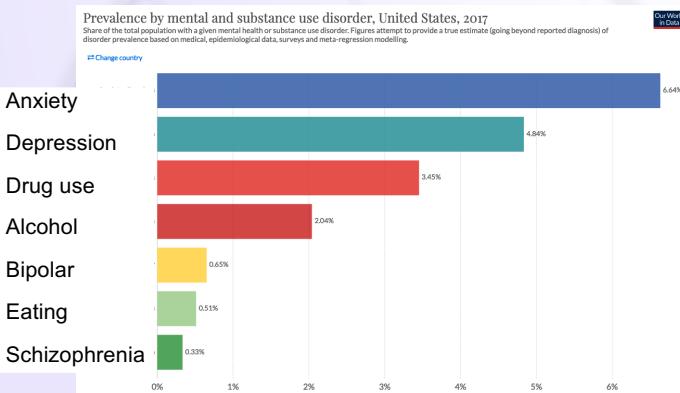
Disorders & Treatment

Randall C. O'Reilly

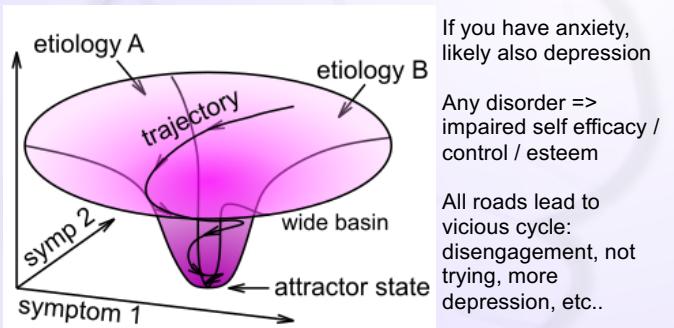
Loss of Control



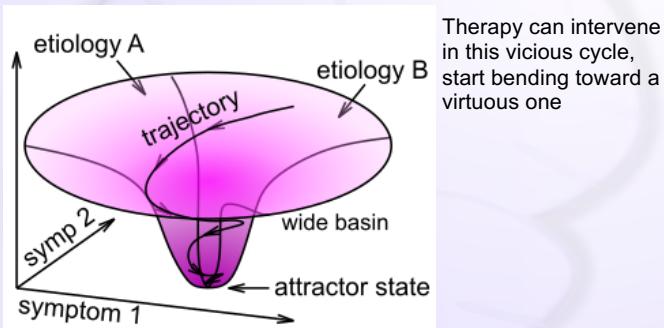
20% suffer at any time
50% lifetime risk



Comorbidity: Network Attractor



Virtuous Cycles Too!



Therapy is Safe Social Bond Rebuilds Self-Efficacy, Control



Therapy (CBT) >= SSRI!



For most anxiety, depression cases.
Has no side effects!
But is expensive!



Clinical Professionals, DSM-5

Psychiatrist: MD, prescribes drugs

Clinical Psychologist: PhD / MA, Certification, does therapy

Social worker: MA, clinical training

Neurologist: MD works on neural diseases
(Parkinson's, epilepsy, Alzheimer's)

DSM-5: *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Assoc)

Disease Model

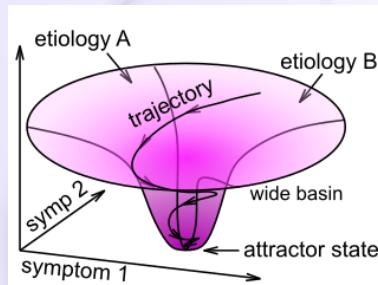
Standard medical paradigm:

- Clear biological cause (**etiology**)
- Direct biological treatment, fixes problem to extent possible
- Parkinson's, epilepsy, Alzheimer's

Does this apply to everything – just a matter of time to find biological treatment –

or are some disorders qualitatively different?

Attractor = “Psychological” not Bio



We are active agents in our own brains!

We are in *control*, and disorders are challenge to control.

Treatment is to restore *control*.

Control is not biological!

Involvement of the self/control increases stigma, harder for insurance to cover, etc – is it their own *fault*?

Many afflicted.. maybe pervasive therapy possible?

Definition of a *Disorder*

Previously:

a disorder must cause **distress** and / or **disability** (impairment in one or more important areas of functioning).

Now (DSM-5):

A mental disorder is a syndrome characterized by clinically significant **disturbance** in an individual's cognition, emotion regulation, or behavior that reflects a **dysfunction** in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant **distress** in social, occupational, or other important activities.

Just a bit more specific..

Definition of a *Disorder*

Obviously, something must be “wrong”

But that is not sufficient – can be a “happy nutter” that people generally regard as strange..

Much harder to be locked up against will (also much harder to get needed treatment..)

personal distress is key!

Definition of a *Disorder*

Exclusions:

An expectable or culturally approved response to a common stressor or loss, such as the death of a loved one, is not a mental disorder. Socially deviant behavior (e.g., political, religious, or sexual) and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above.

DSM-5 Categories, Prevalence Order

- Anxiety disorders (GAD, Panic, Phobia)
- Depressive disorders (MDD)
- Substance Use Disorders (dependence)
- Bipolar Disorder
- Eating disorders (Anorexia, Bulimia)
- Schizophrenia
- Obsessive-Compulsive disorders (OCD)
- Trauma and Stressor-Related disorders (PTSD)

DSM-5 Developmental Disorders

- ADHD (Attention Deficit, Hyperactivity Disorder), 5% prevalence
- Autism Spectrum Disorder

DSM-5 Personality Disorders

- Similar to other disorders in many cases
- But: trait-like, present consistently from earlier age, focused more on social interactions – *extreme* personalities.
- Schizoid, schizotypal: social anxiety, withdrawal
- Antisocial, borderline, histrionic, narcissistic: high neuroticism, low agreeableness personality factors
- Avoidant, dependent, obsessive-compulsive..

Personality Disorders in OCEAN

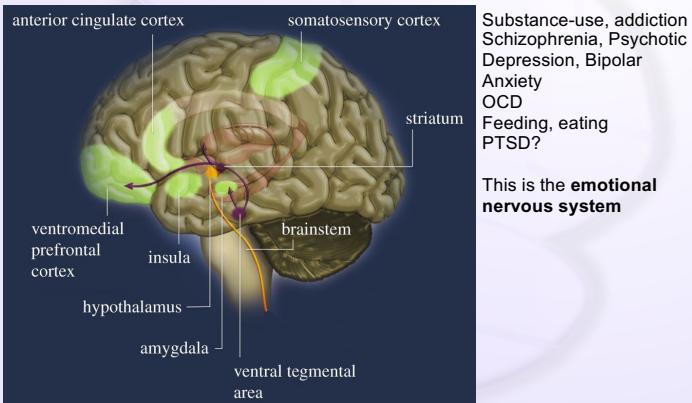
Extreme factors:

- Antisocial: ---agreeableness?
- Avoidant: +++)neuroticism, ---extroversion
- Borderline: +++)neurotic, ---agreeable, ---conscientious
- Paranoid: +++)neuroticism
- Obsessive-compulsive PD: +++)conscientious
- Schizoid: ---extroversion
- Narcissistic: ---agreeable

Are Categories Useful?

- Current trend is away from categories
 - Comorbidity rates are very high
 - Anxiety <-> Depression @ 50%
 - Biological differences are not very specific
 - Continuum of functionality – **dimension** is important, not the specific value..
- But categories simplify, have pragmatic value
 - Many benefits to being definitively “sick” or not (insurance, treatment, acceptance, etc)
 - also drawbacks (one-size-fits-all treatment, stigma)

Same Major Brain Areas Involved in Most Disorders



Anxiety

Generalized anxiety disorder (GAD)

- Excessive, difficult to control anxiety and worry
- One or more of: restlessness, on edge; difficulty concentrating, going blank; irritability; muscle tension

Panic attack: overwhelming terror (~10 min)

Panic disorder: fear of having attacks -> **agoraphobia** (avoid public, confined places)

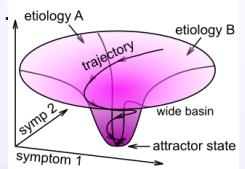
vs. Specific **phobias** (snakes etc)

Depression Symptoms (DSM-5) (5 or more, must include 1st 2)

- Depressed mood
- Loss of interest or pleasure
- Weight, appetite change
- Disturbed sleep
- Lethargy or agitation; fatigue or loss of energy
- Feelings of worthlessness, guilt
- Difficulty concentrating, decision making
- Recurrent thoughts of death, suicide

Depression = Loss of Control

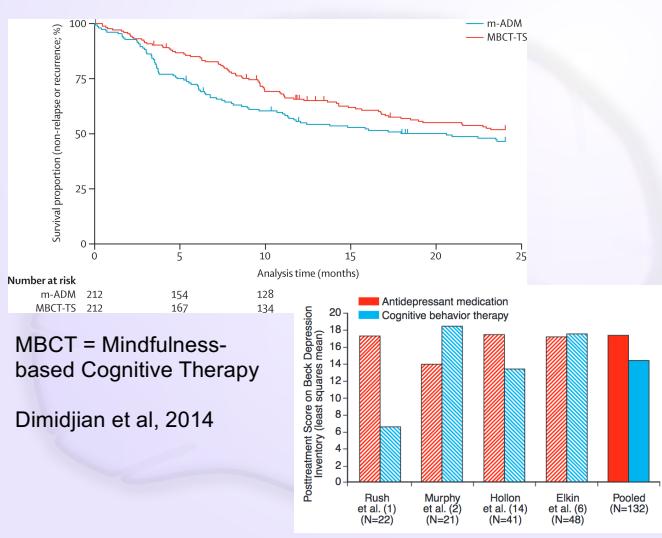
Vicious cycle of: negative affect -> inability to select goals -> negative affect -> (**hopelessness**)



Everything has high cost, low gain

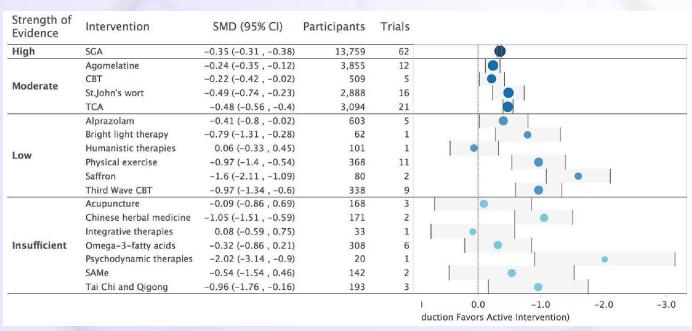
Beck negative cognitive triad: bad thoughts about self, the world, and the future

anhedonia = inability to experience pleasure



Treatment Efficacy

(Gartlehner et al, 2017)



Serotonin is VERY Complex

SSRI are broadly effective, but not a magic pill..

Many different 5HT pathways, receptors, each with different, opposing effects

- "Happy" 5HT pathway: interfascicular raphe (DRI)
- "Sad" 5HT pathway: caudal raphe?
- Many others..!

Chemical imbalance vs. chemical intervention / jumpstart?

Substance Use Disorders

Withdrawal: unpleasant feelings from lack of use

Craving: overpowering feeling of wanting

Tolerance: progressive need for more to get same effect

USA Drug + Alcohol deaths: 100,000

Tobacco: 480,000

Relapse rate: 40-60%

Bipolar

Manic – depressive phases

Hypomania = lower-level of mania that can produce highly creative work

Many famous creative people:

Kanye West, Carrie Fisher, Mel Gibson, Demi Lovato, Kurt Cobain, Frank Sinatra, Vivien Leigh, and Winston Churchill

Eating Disorders: Control

Anorexia nervosa: extreme form of conscientiousness, comorbid with OCD

Bulimia nervosa: binging & purging (loss and restoration of control)

Schizophrenia

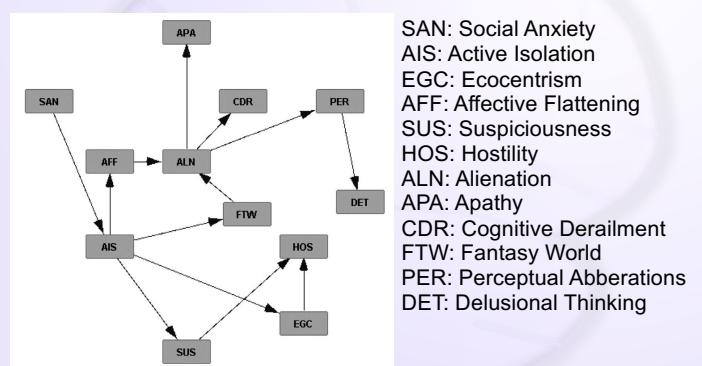
Positive symptoms: not present in normals: hallucinations

Negative symptoms: reduced functionality: depression, social withdrawal

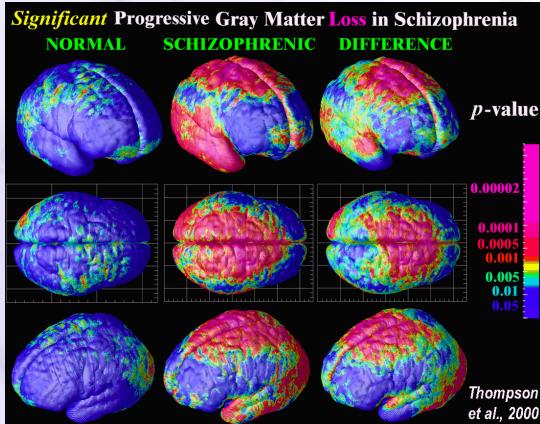
Major "split" is between individual and society: pathway to first episode is through social isolation

Pathways of Development

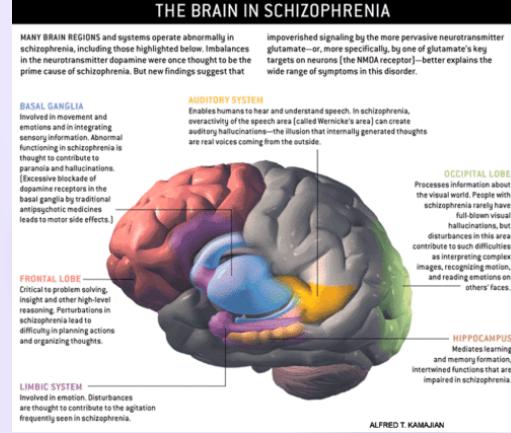
(van Kampen, 2014)



Schizophrenic Brain: Widespread Diffs



Schizophrenic Brain: Widespread Diffs

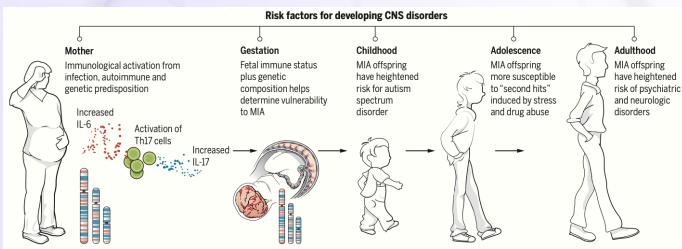


MIA model:
ACC, PFC
effects

Vijay Mittal:
Basal
Ganglia
impairments
before
onset of
Scz

Maternal Immune Activation

(Meyer, 2014; Estes & McAllister, 2016)



PTSD

Re-experiencing traumatic event

Negative changes in mood and cognition:
detachment, loss of interest..

Changes in physiological arousal levels and reactivity: sleep, irritability, reckless, self-destructive..

1.3% develop in any given year. 6% of 9/11 terror attacks suffered from PTSD. **Resilience!**

OCD

Obsessive = repeated thoughts

Compulsive = repeated behaviors

Insatiable goals constantly re-selected, driving habitual motor plans: **incompleteness**

Harm avoidance: when is avoiding over?

Subtypes: symmetry, cleaning, forbidden thoughts, hoarding

Developmental: ADHD

Neurodevelopmental: in a different category from other disorders

Attention Deficit: inability to focus attention over extended time periods

Hyperactivity: constant movement, fidgeting

Impulsivity: hasty decision making, without regard to consequences

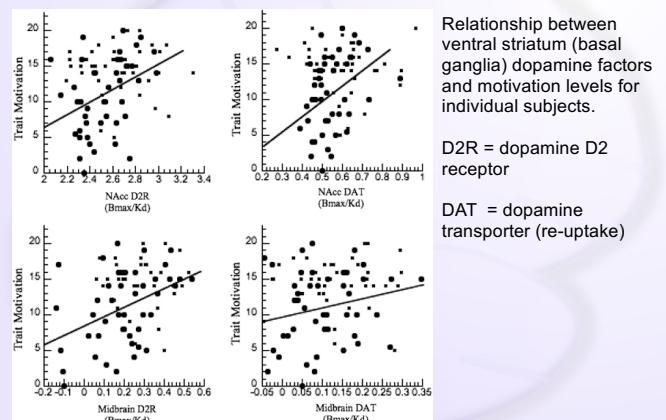
Treated with stimulants including **Ritalin**

ADHD and Motivation

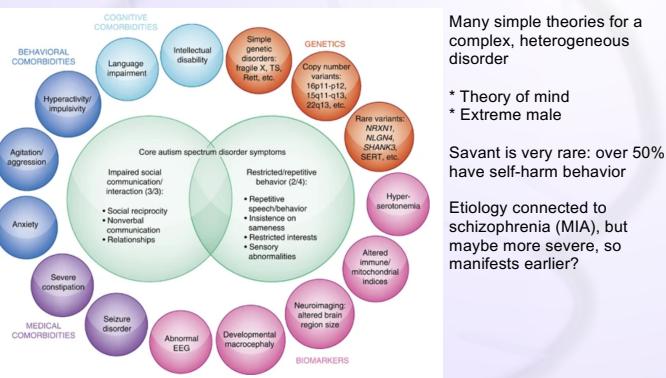
Prevalent hypothesis: executive (PFC) dysfunction – however, not reliable (Willcutt et al)

Volkow et al (2011): "These findings provide evidence that disruption of the dopamine reward pathway is associated with motivation deficits in ADHD adults, which may contribute to attention deficits and supports the use of therapeutic interventions to enhance motivation in ADHD."

Volkow et al, 2011



Autism Spectrum



DSM Definition of PD

Personality disorder must have at least 2 impairments:

- **Identity:** stable self-esteem, boundaries, etc
- **Self-direction:** ability to pursue goals
- **Empathy**
- **Intimacy**

Borderline Personality Disorder

BPD is particularly dangerous (self & other harm): Impulsive, moody, frightened of abandonment, unstable sense of self, emptiness, worthlessness, stormy relationships

Diathesis-Stress Model

Diathesis: genetic vulnerability ~50% heritability

Stress: experience that triggers latent genetic predisposition

Mindfulness-based therapy attempts to reduce stress response to adverse experiences, promote acceptance, understanding.

Triple Vulnerability Theory (Barlow)

Generalized Biological Vulnerability (genetic)

Generalized Psychological Vulnerability

- General beliefs about the world (dangerous, etc)

Specific Psychological Vulnerability

- Specific learned beliefs / situations (embarrassment is very bad)

= **Stress** -> Social Anxiety Disorder

Therapy Definition

Psychotherapy is a unique form of relationship:

- Focus entirely on client's needs and problems
- Therapist is paid
- Therapy takes place in structured setting
- Each meeting is time-limited (e.g., 50min)
- The relationship is expected to terminate

Therapy is Safe Social Bond Rebuilds Self-Efficacy, Control



Forms of Therapy

Current, Empirically Supported Therapy (EST):

- **Cognitive-Behavior Therapy (CBT)**: change thoughts and behaviors (GAD, Panic, Depression)
- **Mindfulness-based CT (MBCT)**: + acceptance
- **Behavior Therapy (BT)**: conditioning (Depression)
- **Exposure Therapy** (OCD, phobias)
- (also Group, Family, Couple Therapy)

Integrative: most common, tailor to client

Old: Psychoanalysis, Psychodynamic Therapy, Client-Centered Therapy, REBT

Science Works!

Behavioral Therapy = Behaviorism Theory

Cognitive Therapy = Cognitive Theory

Mindfulness = Buddhist Theory ☺

Cognitive (Behavior) Therapy

Goal: change negative beliefs, automatic thoughts (negative cognitive triad, Beck) *and behaviors*

Method: get client to question beliefs, confront negative thoughts with positive facts..

Challenges: Many ways of focusing on negative: Overgeneralization; Discounting positives; Catastrophizing; Mind-reading; Magnifying; Filtering

Behaviorism and Exposure

Behavior Therapy: Use operant, classical conditioning to shape positive patterns of behavior (prizes, *token economy*, *contingency mgmt*)

Exposure Therapy: Extinguish negative associations through careful extinction training: **systematic desensitization** (don't activate "US") .. or **flooding** (wear it down!)

Therapy Works!

Average client is better than 80% of non-clients!

Randomized Controlled Trials: gold standard (random assignment -> causal not just correlation)

Clinical Significance: need more than a statistical effect – need an actual “cure” (e.g., couple therapy example: does couple stay together??) – *Not widely achieved!!*

Why All Therapies Work (everyone's a winner! = dodo bird)

Therapeutic alliance; Therapist allegiance and competence.

Why do these factors make people feel better?

- Hope, confidence, positive emotions, willingness to commit effort..
- In other words, therapy *imparts self-efficacy and reboots goal-driven cognitive system!*
- CCC = Control

Bottom line

It takes *serious work* to overcome strength of negative emotional systems:

- Easy to be overcome with defeatist, negative thoughts, worries, anxieties, etc
- Sometimes you need some help! Someone who can talk you through it, get you pointed in a new direction, etc..
- First step is always recognition and acceptance, and understanding that this is just how your brain works, and you just need to work at it to overcome..

Pharmacotherapy

- No more effective than “placebo” for most people
- Massive conspiracy marketing from drug companies, pushing a “miracle cure” for shiny happy people!
- Major side effects and risks, including extreme violence, suicide in some cases..