Top-Down versus Bottom-Up

Fisher, W., Johnson, A., Fisher, L., Sharma, S., & Ceballos, N. (2013)

- Bottom-up Brain Issues: Too much emotion.
  - The temporal-limbic system is the primary source of emotions; abnormal activity in this brain region may cause explosive outbursts.
- Top-down Brain Issues: Too little control.
  - The frontal lobe is a control system that, in a normal brain, will exert top-down modulation of irritability. Low levels of activity in frontal lobe systems have been reported in DMDD, which may cause chronic irritability.

Non-Episodic Irritability

(Berntson & Cacioppo, 2009)

- Severe Mood Dysregulation; in DSM-5 its DMDD (without hyperarousal). (McGough, 2014)
- BD is rare (<1%), but non-episodic irritability is more common 3% to 20% of youth. (Stringaris, 2011)
- Non-episodic irritability does not turn into "classic" BD. (Leibenluft et al., 2006; Stringaris et al., 2010; Althoff et al., 2010)
- Non-episodic irritability shows different neural pathways than BD. (Rich et al., 2011)
- Non-episodic irritability shows different brain abnormalities in youth. (Adleman et al., 2012)

Definition of Irritability

(Leibenluft, 2013)

Irritability is defined as:

- "Being easily annoyed"
- *"Often losing temper,"*
- *"Often angry and resentful"*
- *"Being associated with anxiety, depression, or moody episodes".*

Normal Irritability

(Dickstein & Leibenluft, 2012)

Normal Irritability:

- Is a relatively short-term negative mood.
- representing a lowered threshold for experiencing negative emotions in response to frustration (i.e., blocked goal attainment).
- is generally associated with anger.
- can be due to physiological or psychological distress (e.g., pain, illness).

Abnormal Irritability

(Leibenlubt, 2011)

Abnormal Irritability:

- Is an impairing, and long-lasting mood disorder with temper outbursts:
- *"Temper outbursts that are developmentally inappropriate, frequent, and extreme with anger or sadness between outbursts."*
- may occur in association with mental illness*:*
- *Depression, Anxiety, Post-Traumatic Stress Disorder, Attention Deficit Hyperactivity Disorder, Bipolar Disorder, Autistic Spectrum*

Severe Irritability

(Dickstein & Leibenluft, 2012)

- Severe episodic irritability may be a symptom of the manic phase of a Bipolar Disorder.
- If irritability is chronic and severe, with childhood onset (between ages 6 and 10), and very frequent explosive outbursts, with negative moods between outbursts, then consider DMDD.
    - Frequent explosive outbursts can undermine academic, family, and social functioning and lead to school dropout, substance abuse, depression, multiple psychiatric hospitalizations or incarceration (Copeland et al., 2014).

Criteria for DMDD?

(McGough, 2014)

- Irritability and temper outbursts
- Type of temper outbursts
- Mood between outbursts
- Frequency of outbursts
- Symptom picture (must have, not have)
- Age at onset; duration; course
- Trouble functioning in multiple settings

Exclusionary criteria for DMDD?

- Mania (e.g., euphoria, grandiosity)
- Dysthymia
- Psychosis
- Post-Traumatic Stress Disorder
- Pervasive Developmental Disorder
- Major Depressive Disorder
- Separation anxiety
    - Late in the course of DMDD, child may develop co-morbid depression and or anxiety (but does not develop Bipolar Disorder).

Biological Markers for DMDD?

(Kowatch et al., 2009)

- BD rates do not vary by gender, but non-episodic irritability kids are mostly male (66-77%) (suggesting a distinct gender-based disorder).
- Parents of Bipolar kids are more likely (33%) to have BD themselves than parents of DMDD kids (2.7%), (suggesting a distinct genetic pattern).
- Gene mapping may be a way to find biological markers for DMDD.

Angry Kid

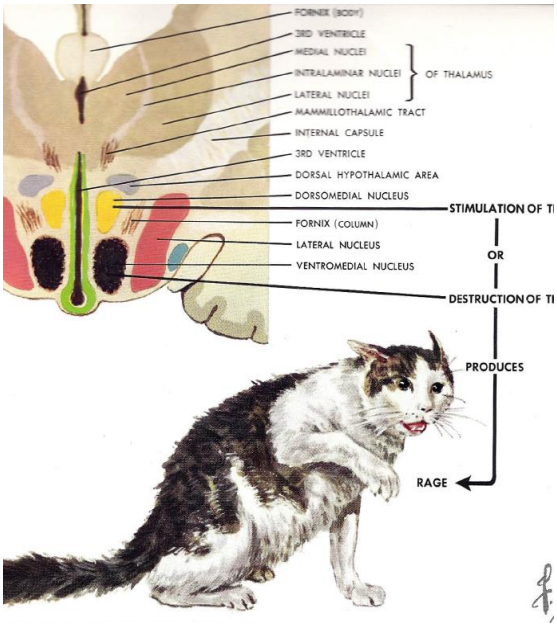
- Cold, quiet, anger. Tight lips, narrow eyes

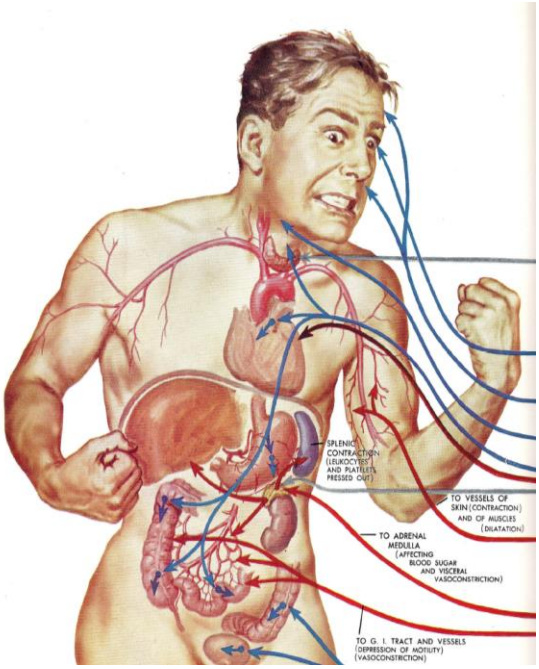
Explosive Kid

- Glassy-eyed, jaw clenched, tight muscles= RAGE

Explosive Outburst:

"Fight or Flight"





Offensive – Cold, Quiet

Defensive –Hot, noisy

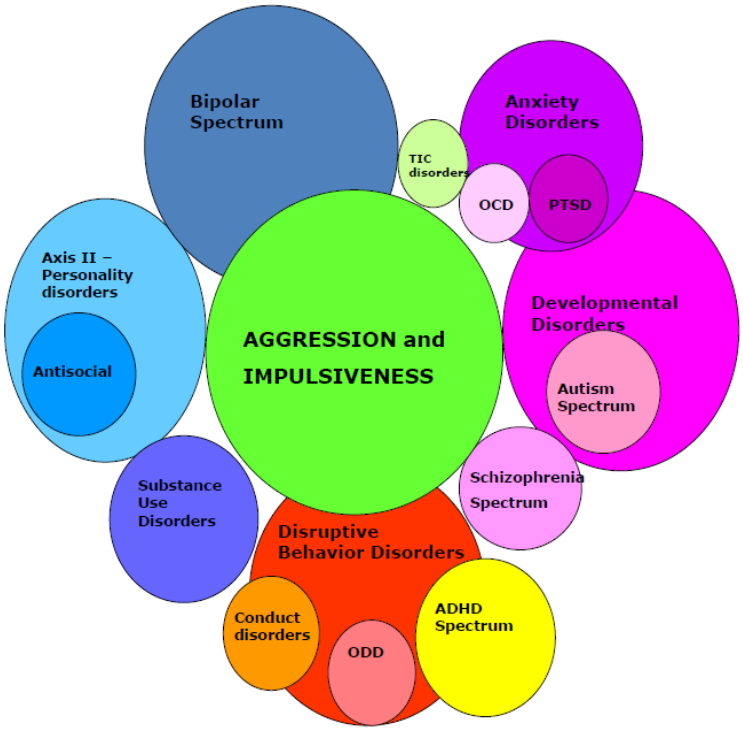
Defensive:- Jaw clenched, crazy eyes

Offensive Anger: Tight lips, narrow eyes

Defensive RAGE: Jaw clenched, crazy eyes

Explosive Kid: Crisis Management

- No show of force by staff (THIS WILL TRIGGER AN ATTACK)
- Back off and watch for safety (HOLDING IS A LAST RESORT)
- Rage will run out of steam on its own (IF NO THREAT)
- Afterwards, expect fatigue, poor recall (remorse?)
- No point to punishment of out-of-control RAGE



Adapted from Connor, D. In: *Aggression and Antisocial Behavior in Children and Adolescents:Research and Treatment.* New York,, NY, Guilford Press, 2002

FACTS ABOUT severe IRRITABILITY

- 10% of population has severe, impairing irritability at some point in their lifetime (Moreno, et al., 2007).

Of that group, 92% have other disorders:

- Mood Disorder (45.8%); Anxiety (62.3%); Poor impulse control (68.2%); Substance use (47.2%)
- Severe (CHRONIC) irritability is 3 times more common than Bipolar (EPISODIC) irritability

What is severe irritability?

(Leibenluft et al., 2011)

Irritability is defined as:

- "Being easily annoyed,"
- *"Often losing temper,"*
- *"Often angry and resentful"*

Two components of severe irritability:

- (1) Consistently grumpy, annoyed, negative
- (2) Outbursts, or flashes of anger or explosiveness

Severe irritability examples

- 10 year-old boy who is "angry all the time", argues with adults constantly, easily frustrated and kicks in doors and punches walls. Police were called three times for explosive outbursts where he assaulted his parents.
- Teen girl who is very bossy with peers, can't keep friends, has physical fights at school, tried to jump from a moving car, hospitalized after homicidal threats.

Irritable Kids: ADHD & Bipolar Disorder

Attention Deficit Hyperactivity Disorder:

- Fidgety Phil who can't sit still
- Psychiatric Disorder of Childhood
- Child is restless, can't stop moving, acts impulsively, hyper

Bipolar Disorder:

- A.K.A: Manic-Depressive Disorder
- Severe Mental Illness
- Mood swings from racing thoughts and euphoria to sad, depressed, suicidal

Bipolar Examples

- Teen boy, not sleeping, moody, depressed for months but suddenly has increased energy, "writing 3 novels at once", writes to college he wants to teach their professors "his advanced math knowledge", then gets depressed again, with "voices telling him he is bad".
- Young female, awake all night painting, feels "so happy it was scary", "talks so fast her mother can't follow", has too many thoughts all mixed up, then has a mood swing to feeling hopeless, worthless, and helpless.

DMDD (3% of children)

(Axelson et al., 2012)

What is Disruptive Mood Dysregulation Disorder (DMDD)?

- New diagnosis for 2013. Severe Mental Illness (separate from Bipolar)

DMDD is a new DSM-5 diagnosis for kids with psychiatric disorders making them:

- CHRONICALLY IRRITABLE, WITH
- EXPLOSIVE OUTBURSTS

Explosive outbursts?

(Greene, 2010)

Two major type of aggression:

a) Impulsive (explosive) aggression (often brain-related)
   - Emotionally charged (hot-tempered)
   - Explosive loss-of-control

b) Premeditated aggression (*not* usually brain-related)
   - Planned, purposeful (cold-blooded)
   - Goal oriented, in-control

Examples: Impulsive & explosive

- A 9 year-old girl who has always had difficulty in school, and tried to jump from a moving car.
- A 7 year-old boy has very poor tolerance for frustration and now has frequent and severe explosive outbursts over little things.
- A 6 year-old adopted from Russia has been diagnosed with Mood Disorder, NOS.
- Child adopted from South America with DMDD

Hemisphere specialization

Left hemisphere
Mostly Auditory - Verbal
Speaking
Comprehension
Reading
Writing
Math

Right hemisphere
Mostly Visual - Spatial and Social
Make\understand gestures, shapes
Make\view pictures
Get social ideas\ solve social conflicts

Brain Disorder or Misbehavior?

Brain Disorder:	**Misbehavior:**
Impulsive aggression	Premeditated
Explosive rages	Antisocial conduct
Unprovoked	Provoked
Unplanned	Planned misbehavior
Not for gain	Revenge, dominance
Too much emotion	Often done “cold”
Reactive	Proactive
Reckless	Cautious
Out-of-Control	In-control

Bipolar versus DMDD

Bipolar Disorder:

- Late adolescent onset (1% of population)
    - Grandiosity, euphoria, rapid speech, racing thoughts, less need for sleep, increased pleasure-seeking to a harmful extent. Episodic irritability, episodic depression. Some outbursts.
    - Periods of near normalcy between mood swings

Disruptive Mood Dysregulation Disorder:

- Onset between ages 6 and 10 (3% of population)
    - Chronic irritability with frequent explosive outbursts
    - Negative moods between outbursts

Psychosocial Interventions

Psychosocial Interventions that is helpful:

- Therapies: Parent Mgt. Training (PMT), Family Focused Therapy (FFT), Multi-Systemic Therapy (MST), Cognitive Behavior Therapy (CBT).
- Behavior Modification: Applied Behavior Analysis (ABA), Token Economy, Level Systems, Behavior Contracts.
- Skill Training: Conflict Resolution, Social Skill, Problem-Solving, Stress Management, Anger Management, Relaxation Training, coping strategies.

Not helpful:

- Boot camp
- Psychoanalysis
- "Getting tough" or punitive discipline.

Interventions: Frontal Lobe

- Patient has poor brakes, can't stop.
    - Don't say "Stop that". Don't say "No". Tell the patient what to do, not what to stop doing. Redirect, give choices rather than a flat "No".
    - Use immediate feedback and rewards, as one might do with a younger child (they are very immature).
    - Use external direction (as on does with a younger child). Don't expect patient to act his/her age.
    - Use positive discipline; punishments rarely effective.

Temporal-Limbic

What you will see:

- Emotions are exaggerated, very poor emotional control, cry easily, angers easily, and has mood swings. Hot-temper and explosive outbursts are common.
- Picture a patient with a magnifying glass over their emotions so that every emotion is way out of proportion to the situation. May be suspicious and have unusual fears. May show magical thinking, hallucinations (vague shadows, voice calling name).

Interventions: Temporal-Limbic

- Patient has unstable emotions:
    - Avoid confrontation (don't get into their face).
    - Treat hallucinations as misperceptions.
    - Don't scold; be supportive, empathetic.
    - Patient may misinterpret motives; be concrete
    - Avoid "hot-buttons" that trigger outbursts.
    - Help them learn to calm themselves (chill-out).
    - Teach them anger management skills

Left Brain

Left brain is dominant in most right-handers
What you will see:

- Delay in expressive or receptive language skills
- Poor verbal intelligence (verbal IQ is poor)
- Can't express emotions very well
- Has poor verbal memory
- Has learning problems in reading, writing
- Resistance to verbal therapy

Interventions: Left Brain

It's as if the juvenile did not speak English

- Avoid multi-step commands
- Don't give writing assignments
- "Feeling faces" chart pinpoints their emotions
- Use gestures, pictures, other non-verbal means
- Post unit rules on walls, with visual icons
- Have them repeat directives for comprehension
- Keep communications simple

Right Brain

This is non-dominant for most people
What you will see:

- A bright but socially "clueless" juvenile
- Who can't recognize facial expressions, gestures
- Poor visual memory, forgetful (losing things)
- Has learning problems in math
- Gets lost easily
- Very disorganized

Interventions: Right Brain

It's as if the juvenile is looking at the world threw cracked glasses (not blind, but impaired)

- Teach recognition of facial expressions, gestures
- Teach them to take turns in conversation
- Teach social skills (even very basic skills)
- Use notepad, checklists to aid poor visual memory
- Teach verbal maps (landmarks) to get around
- Help them recognize body language, voice inflection

Behavior Interventions

Legal and ethical issues

- Never remove meals, beds, calls home, access to religion, etc. (patient rights).
    - Unless Doctor's order for safety
- Never use corporal punishment or humiliation as punishment
- Special Treatment Procedures (STP's) only used for crisis, never used as behavior intervention (e.g.: seclusion is never used as a punishment, only used for safety.

Principles

To increase behavior:

- Provide reinforcing consequence immediately after behavior
  E.G.: praise, touch arm, allow first in line, give snack, extra call home, etc.

To decrease behavior:

- Remove reinforcing consequence
  E.G.: ignore (no attention), lose a privilege, lose a point, time-out

Punishments: Pros & Cons

Pro:

- Punishment can decrease misbehavior. (If not overly harsh)

Cons:

- It can't stop rages (out of control)
- Only useful when it does not trigger an explosive rage attack
- May merely produce escape behaviors (e.g.: tell lies, hide, get sneaky) and not stop misbehavior

Use it, but don't overdo it (not a prison)

Positive Discipline

- Less dependence on strong punishments for bad behavior (Use only token punishments)
- More dependence on incentives and rewards for good behavior (pull, don't push)
- With each punishment, explain what patient is *to do* next time, and reward it when it happens.
- Develop *replacement* behaviors

General Interventions

The therapeutic milieu should be different:

- Lower levels of stimulation (quieter, less confusion)
- Slow down the schedule (breaks for calming down)
- More routine, schedules (more structure)
- Avoid confrontation, avoid "getting tough)
- "Catch them being good" and praise
- Pick your battles (ignore silly stuff)
- Don't dominate (avoid "drill sergeant" approach)

Grandma's Rule

Grandma's Rule is basic for psychiatric behavior mgt.

- *"First you do what I want*
- *Then you get (to do, or have) what you want."*
- Grandma wants child to wash hands before getting cookie.
- Example: Teacher may want patient to take meds before leaving class.

Other Rewards

Consider Premack Principle:

- Watch what kid does a lot when allowed. Is he into video games, drawing, movies, books, puzzles?
- Activities can be used as a potent reward, if they are what the kid really likes to do.
- Allow more of that activity as a reward for good behavior.
- This can be combined with tokens or point system.

Giving Directives to Brain Impaired Juveniles

- Always get eye contact before giving directive
  - "Brain impaired" kids are inattentive
- Use one-step commands
  - "Brain impaired" kids have poor memories
- Have child repeat command for accuracy
- Avoid commands when patient is irritable
- Praise compliance, never take it for granted

Shaping Behavior

For example: Patient is 100% non-response to directives.
Might need to "shape" his behavior

- Call name, if he turns head, gets a token
- Once he is turning head regularly, then
- Require eye-contact to get a token, then
- Require he repeat your directive, then
- Require his response to your directive

BIP and FBA

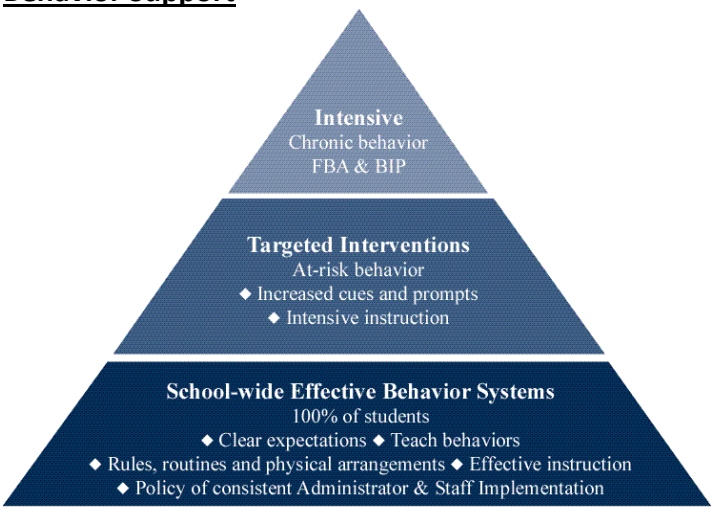
Behavior Intervention Plan (BIP):

- Individual plan for one juvenile, with specific behavior targets, rewards, and consequences.
- Use countable, targets ("being good" too vague)

Functional Behavior Analysis (FBA):

- Misbehaviors are not random; look for patterns
- "What is the function of that behavior?"
- Once function is clear, behavior can be changed.

Behavior Support



Behavior - an observable and measurable act of an individual

Behavior:

- running out into the hallway
- hitting desk with fist
- completing schoolwork early
- yelling expletives
- writing and passing notes

Not:

- bad attitude
- lazy
- low self-esteem
- frustrated
- control, power
- angry
- lack of motivation
- disrespectful

BEHAVIOR	POSSIBLE FUNCTION
yelling	• Escape chores • Gain attention • Escape schoolwork
hitting	• Gain access to desirable item (specific chair) • Gain sensory stimulation • Escape handwriting activity
swearing	• Avoid peer interactions • Gain attention from adults • Escape demands (homework)

Why determine the function?

Short Term Solution:

- To teach the student a new skill (replacement behavior) that achieves the same function
  - while you stop applying the consequences that are maintaining the behavior of concern

Long Term Solution:

- To remediate skill deficits so that the function is less desirable

Classroom Management Traps

Passionate Preaching Trap
Cure-All Trap
Negative Criticism Trap
Too General Trap
Questioning Trap

Changing Behavior Successfully

- Prioritize and work with only one or two behaviors at a time
- Require only gradual improvement in behavior
- Use procedures that are easily implemented and inexpensive
- Use immediate consequences whenever possible
  **Remember long term solutions: skill deficits*
- Teach the behaviors you want the students to exhibit
- Use and then fade prompts to increase the likelihood of appropriate behavior
- Pair social reinforcers with tangible or activity reinforcers
- Thoroughly organize and precisely introduce the program to the students

Informal Behavior Assessment

- Identify antecedents
- Provide a measurable, observable definition of the behavior of concern
- Identify consequences (what is reinforcing the behavior?)
- Identify the "perceived" function of the behavior
- Identify educational (skill) deficits related to the behavior of concern
- Collect and record baseline data