Explosive Youth: Common Brain Disorders

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For More Information

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Murderers without Psychosocial Deficits: Is it a Brain Disorder?

(Raine, A. et al., 1998)

Psychosocial deprivation (childhood abuse, family neglect, harsh discipline) can be a “social push” to violence.

But, what about murderers without social deprivation, do they show more brain disorders?

- 41 murderers without history of social deprivation
  - Showed lower prefrontal glucose metabolism on PET than socially deprived murderers or controls.

When the “social push” to violence is minimal, then brain abnormalities may be the trigger.
Premeditated vs. Explosive Murderers (Pet Scans)

- (Raine, A. et al., 1998)

**PET: Explosive murderers versus normals:**
- Lower prefrontal functioning (poor control systems)
- Abnormal limbic brain (emotion brain defective)

**PET: Premeditated murderers versus normals:**
- Prefrontal - same as normals (good control systems)
- Abnormal limbic brain (emotion brain defective)

**Conclusion:** Frontal lobe needed for planning
- For explosive group, poor prefrontal regulation (no planning, just explosive violence)
- For premeditated group good frontal lobe, planned violence
- Both groups of murderers had abnormal emotion brain function
Aggression Subtype Scale
Vitiello et al., 1990

**Impulsive/Explosive**
- 1. Damages own property
- 2. Completely out-of-control, explosive
- 3. Exposes self to injury when aggressive
- 4. Aggression does not seem to have a purpose
- 5. Unplanned, occurs out of the blue

**Premeditated**
- 1. Hides aggressive acts
- 2. Can control own behavior when aggressive
- 3. Very careful to protect self when aggressive
- 4. Plans aggression
- 5. Steals
# Common Disorders Associated with Aggression

## PSYCHIATRIC
- ADHD (impulsive)
- Substance Abuse
- Conduct Disorder
- Bipolar Disorder
- Schizophrenia
- Borderline Personality
- Antisocial Personality
- Psychopathy
- Teen-onset (gangs)

## NEUROLOGIC
- Intoxication
- Traumatic Brain injury
- Frontal lobe syndrome
- Encephalitis
- Metabolic d/o (thyroid)
- Seizure disorders
- Fetal alcohol effect
- Toxic encephalopathy
- Genetic polymorphism
Brain/Aggression History

1950-1980 – EEG, CT Scans
- Temporal/Limbic System - (emotion control)
  - Damage may cause explosive temper

1980-1990’s – MRI, fMRI, PET Scans
- Frontal lobe – (impulse control)
  - Damage may cause severe impulsivity
  - Impulsive aggression, loss of planning/judgment

Twenty-first Century – Gene maps, MRS
- Detect violence potential at birth, fix brain
Psychopathy
Not brain damage – cold emotions

FACTOR 1 – Antisocial
- Angry when corrected
- Acts without thinking
- Blames others
- Teases, bullies others
- Reckless behavior
- Antisocial misbehavior
- Stimulation seeking
- Grandiose

FACTOR 2 – callous/unemotional
- No guilt
- No remorse
- Shallow relationships
- Shallow emotions
- Neglects schoolwork
- Charming/insincere
- No empathy
- No fear of punishment
Explosive Tempers: Major Juvenile Types

**Brain** (explosive emotions, hot tempered)
- Birth injury, genetic defects, fetal alcohol effect

**Psychiatric** (irritable emotions, bizarre)
- Bipolar Disorder, Major Depressive Disorder
- Schizophrenia, other psychotic disorders

**Disruptive** (normal emotions, impulsive)
- ADHD, ODD, Conduct Disorder (antisocial)

**Psychopath** (cold-emotions, no empathy)
- Premeditated aggression, shallow, antisocial
Brain Problems

- Car accident – 12 year old child
  - Traumatic frontal lobe brain injury
  - Irritable, Impulsive, Explosive Temper

- Birth injury – anoxia, birth trauma
  - Developmental brain damage
  - Irritable, Impulsive, Explosive Temper

- Genetic disorder - brain electrical defect
  - Irritable, Impulsive, Explosive Temper
Compare Brain versus Disruptive Behavior Disorder (DBD)

**Brain Disorder**
- Impulsive aggression
- Explosive rages
- Unprovoked
- Unplanned
- Not for gain
- Too much emotion
- Reactive
- Reckless
- Out-of-Control

**Psychosocial DBD**
- Premeditated
- Chooses aggression
- Provoked
- Planned misbehavior
- Revenge, dominance
- Often done “cold”
- Proactive
- Cautious
- In-control
Explosive Aggression is Usually a Brain Disorder

**If youth goes into a blind rage:**
- No concern for own safety
- Cannot be talked down
- Does not stop with a show of force
- Gets worse if restrained
- Acts like an “emotional seizure”
- Later, has poor recall of outburst events

**Repetitive rages suggest a brain disorder**
- Good candidate for anticonvulsant meds
Research – Juvenile Aggression

Early childhood onset (before age 10)
- Predicts more severe, lifelong aggression
- Biological problems: brain problems likely
- Earlier onset = better response to medications

Adolescent onset (no aggression as child)
- Temporary aggression, not lifelong
- Psychosocial problem, teen adjustment issue
- Prognosis good for psychosocial interventions
- Except for psychosis, medications less useful
Maladaptive Aggression

- **Brain** – Intermittent Explosive D/O
  - Out-of-control, primitive rages – no thinking

- **Psychiatric** – Bipolar, MDD, Schizo.
  - Irritable, moody, suspicious – odd thinking

- **Disruptive** – ADHD, Conduct D/O
  - Impulsive, immediate acts – little thinking

- **Psychopath** – Shallow emotion antisocial
  - Predatory, in-control, cold - hostile thinking
Strategies

**TOO MUCH EMOTION – Brain Disorder**
- Hot tempered, no control of emotion, irritable, explosive, out-of-control, hot-under-collar
  - Strategy: Meds, chill-out room, positive discipline

**NORMAL EMOTION - Unsocialized**
- Hostile, antisocial, in-control, delinquent
  - Strategy: Firm discipline, normalize environment

**TO LITTLE EMOTION - Psychopath**
- Strategy: Positive discipline with “response cost”
Child-Onset Aggression Suggests Possible Brain Disorder

Childhood onset cases often display:
- Neuropsychological deficits (e.g.: memory)
- Attention deficits, poor impulse control
- Academic underachievement
- More severe and persistent aggression

The earlier the onset:
- The more likely it is a brain disorder
- The better response to medications
Under socialized Aggressive

Socialized delinquent cases:
- Belong to deviant social group or gang
- Antisocial acts only as part of social group
- Truancy, group stealing, group drug use

Under socialized Aggressive:
- Poor social bonds, less empathy
- Commit violent or antisocial acts alone
- Very poor moral reasoning, project blame
- Infer greater hostility on part of others
Psychiatric Disorders

Psychiatric Disorder is not Brain “Damage”
- Not usually a neurological problem

Psychiatric Disorder often is chemical imbalance in the brain, not brain damage

Chemical imbalance may also need meds

Examples:
- Attention Deficit Hyperactivity Disorder
- Bipolar Disorder, Schizophrenia
Neurological Disorders

- Genetic or developmental disorders
- Prenatal injuries or toxic exposure
  - e.g.: mother’s use of alcohol or crack
- Birth injury or traumatic brain injury

**MAJOR TYPES:**

- Frontal lobe injuries = impulsive kids
- Temporal limbic = explosive kids
- Combinations = impulsive and explosive
Treatment Options

**Impulsive, explosive, irritable, aggression:**
- Usually a brain disorder, often brain damage
- Rages usually respond to medication
  - Mood stabilizers, anti-depressants, stimulants, anti-psychotics, anticonvulsants, no tranquilizers or sedatives
  - Treat rage like an emotional seizure – anticonvulsant meds
  - Positive discipline, anger management, therapy

**Premeditated, in-control, cold blooded:**
- Almost always a psychosocial problem
- Usually does not respond to medication
- Early intervention is best: parent training, family/wrap around services, structured discipline
- Adolescent onset has better prognosis
Psychopharmacologic Meds

**SSRI’s (for depression)**
- (Zoloft) (Prozac)
- (Paxil) (Zoloft)

**ANTIPSYCHOTICS**
- ATYPICALS (new)
  - (Risperdal) (Abilify)
  - (Clozaril) (Zyprexa)
    - (Seroquel) (Geodon)

**ANTICONVULSANTS**
- (Tegretol) (Depakote)
- (Trileptal) (Keppra)

**STIMULANTS (ADHD)**
- NORADRENERGIC
  - (Strattera)

- AMPHETAMINES
  - (Dexedrine)
  - Mixed amphetamine salts
    - (Adderall)

- METHYLPHYNIDATE
  - (Ritalin)
  - (Concerta)
Summary

- Major subtypes – explosive vs. premeditated
  - E.G: hot tempered vs. cold blooded
- Impulsive, Explosive = hot-tempered
  - Usually brain problem - not learned
    - This juvenile can not act in his own best interest
    - Responds to medication, positive discipline
    - Best to treat rages like an emotional seizure
- Premeditated = cold blooded
  - Psych. Disorder/Psychopathy – learned aggression
    - This Juvenile will generally act in his own best interest
    - Needs early intervention, wraparound services, family support, consistent discipline
    - This type of aggression is learned, but can be unlearned