

Explosive Youth: Common Brain Disorders

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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