

Complications from Combat:

Traumatic Brain Injury Posttraumatic Stress Disorder and Violence Risk



Cynthia Boyd, Ph.D.
Co-Senior Scientific Director
Neuropsychologist
Defense and Veterans Brain Injury Center
Naval Medical Center San Diego

Eileen C. Moore
Associate Justice
California Court of Appeal
2nd Lt., U.S. Army Nurse Corps, combat nurse
in Vietnam-1966

Disclaimer

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Points to be Covered

- Impairment in functioning from TBI
- Aggression & violence associated with TBI & PTSD
- Co-morbid factors that lower the threshold of impulse control
- Case examples
- Combat Exclusion
- Double Whammy
- California Penal Code Section 1170.9
- Mentors in Veteran Court

Veterans in State & Federal Prison 2004

U.S. Department of Justice (May 2007)

- In 2004: male veterans had lower incarceration rates than nonveterans; due in part to age differences
- 65% of male veterans in 2004 were at least 55 years old
- More than half of veterans in state prisons were serving for a violent offense
- More likely to have had recent mental health problems

Military: Severe TBI

- Neuroimaging is abnormal
- Medically evacuated out of theatre
- Require intensive rehabilitation
- Unlikely to return to full duty status
- Persistent impairments in functioning

Military: Moderate TBI

- Neuroimaging is usually abnormal
- Typically evacuated out of theatre
- Less intensive rehabilitation services
- Return to duty rates are variable
- At risk for disciplinary issues, work performance problems, and family distress

Military: Mild TBI

- Neuroimaging is normal
- AKA concussion
- Brief LOC or an alteration of consciousness (AOC)
- Frequently medically managed in theatre and returned to duty
- Expect recovery within days to weeks
- At risk for disciplinary issues, changes in work performance and family discord
 - Changes may not be evident in theatre

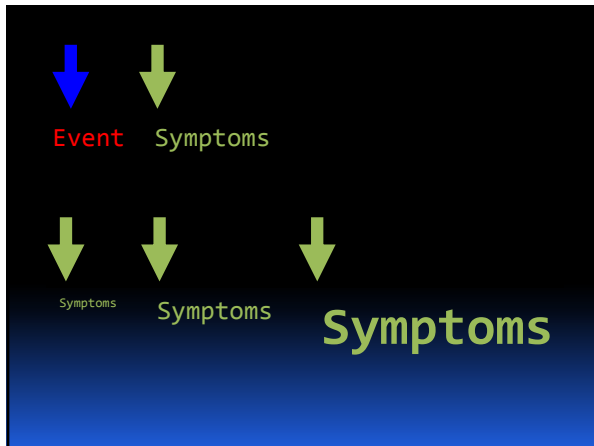
Symptoms in the Acute Recovery Phase (mTBI)

- Physical
- Headache
 - Dizziness/vertigo/balance problems
 - Reduced alcohol tolerance
 - Sensitivity to light & noise
- Cognitive
- Trouble concentrating
 - Impaired memory
 - Slowed processing
 - Problems with multitasking

Temporal Relationship



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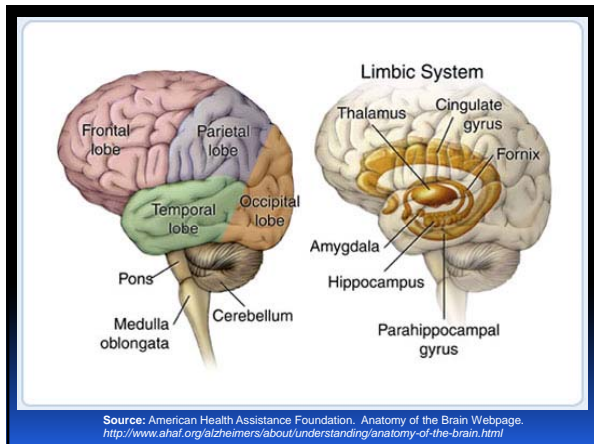


Behavioral symptoms reported following concussion/mTBI

- Difficulty being around people
- Personality changes
- Irritability, frustration, "short-fuse"
- May result in "acting out" behavior

Violence associated with TBI

- TBI related cognitive & behavioral problems can result in aggressive behavior
 - Diminished coping abilities
 - Impulse control problems
 - Increased irritability, even with concussion
 - Lack of insight and judgment

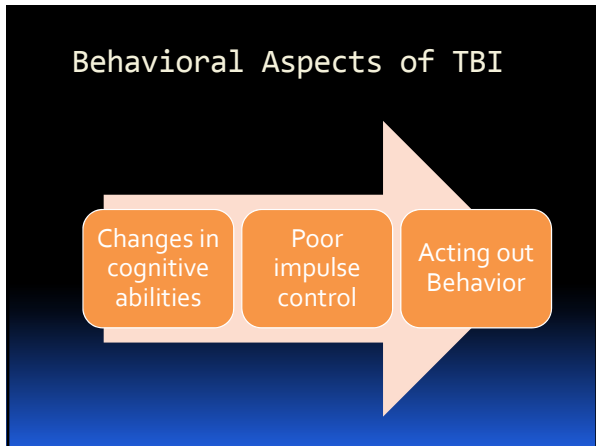


Frontal Lobe Functions

- Abstraction, judgment, planning, sustained motivation, & self-regulation
- Have an inhibitory effect on other areas of the brain
 - Can restrain behavior
- Serves as a filter
- Last area of the brain to fully develop

Frontal Lobe Impairment

- Aggression
 - Brain's loss of ability to maintain emotional control (loss of the "filter")
 - Because of lack of planning ability, unable to anticipate the impact of their behavior and consequences
 - Can lead to exaggerated response and action far exceeding the normal reaction
 - Rarely understand their own role in conflicts



- ### Violence as a Consequence of TBI
- Not all brain-injured individuals are violent or aggressive
 - Age of injury plays a role
 - History of aggression
 - Use of alcohol or drugs increases likelihood of aggressive acts
 - Presence of a mental disorder increase likelihood of aggression

- ### Case Example: Violence following severe TBI
- Male, early 60's
 - History of childhood physical abuse
 - History of alcohol abuse (DUI over 10 yrs ago)
 - No violent criminal history
 - Married 4x
 - Self-inflicted GSW to head
 - Open skull fracture, GCS of 3
 - ER: respiratory failure, postcardiac arrest

Case Example: Violence following severe TBI

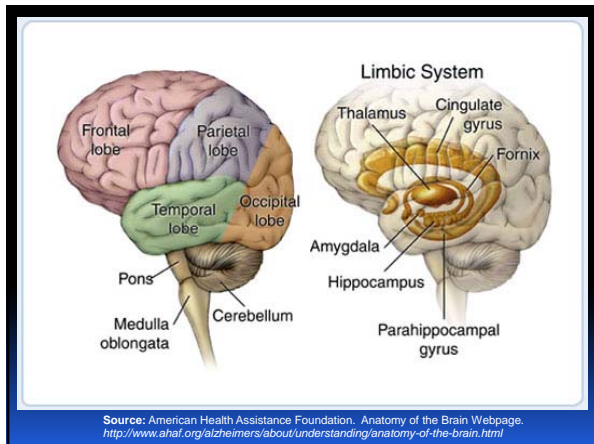
- Required a craniotomy to remove bony fragments in the left frontal lobe
- Conditioned worsened with brain hemorrhage
- Second craniotomy: "previously made craniotomy incision was open and liquefied brains are coming through the wound"
- CT scan revealed: multiple metallic bullet fragments remained in his frontal lobes

Case Example: Violence following severe TBI

- Hospitalized for 6 weeks
- Behavior was described as: "combative, impulsive, angry, disinhibited, confused, disoriented, and argumentative"
- His teeth bled from trying to get out of restraints
- Released from hospital without follow-up care
- Began drinking one month later

Case Example: Violence following severe TBI

- Two months after hospital discharge
- 14 weeks s/p injury
- Killed his estranged wife (mother of his two small children) and her mother



Temporal Lobe Functions

- Interpreting & processing auditory information
- Memory
- Language comprehension
- Limbic System ("emotional brain")
- Plays a role in emotion and learning

Temporal Lobe Impairment

- Makes its appearance as a true learning disorder
 - Problems learning and memory
- Limbic System ("emotional brain")
 - Hippocampus
 - Amygdala (fear memory)
- Auditory or visual hallucinations
- Delusions
- May have episodes of unprovoked or exaggerated anger

Temporal Lobe Impairment

- Aggression following temporal lobe damage involves a loss of behavioral control
 - Unpatterned
 - Not confined to particular situations, times or individuals
 - Occurs with minimal provocation
 - Without premeditation

Golden, et al., 1996

Case Example: Temporal Lobe Rage

- Marine with 7 years AD, excellent service record
- Seizures
- Temporal lobe tumor resection
- Unpatterned rage

Does TBI predispose one to Crime?

- From civilian literature: a number of studies have found a greater history of head injury in a variety of offender populations (Raine, 1993)
- Violent offenders on death row studied by Lewis et al., 1986, had a history of *severe* head injury
- McKinlay, et al., 1981, found aggression and irritability to follow *serious* head injury in 70% of cases

Posttraumatic Stress Disorder Definition and History

Invisible wound

- An Anxiety Disorder
- PTSD is unique among psychiatric disorders in that the symptoms are directly linked to a traumatic event
- 5th most common psychiatric disorder (5% of Americans)
- 20 years after Vietnam, 15% of combat veterans still have PTSD (National Vietnam Veteran Readjustment Study, 1990)

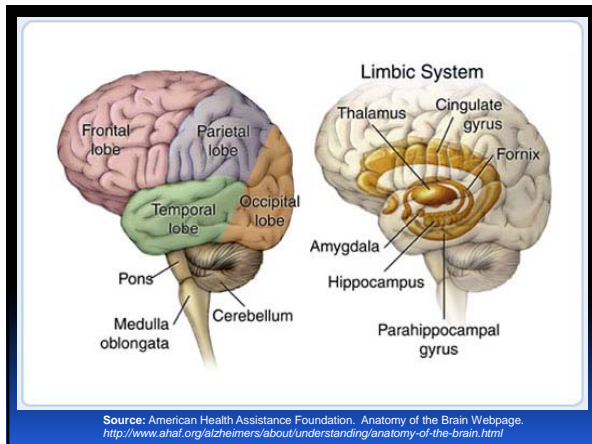
Functional Outcome after PTSD

- Often a chronic disorder with a fluctuating course in which symptoms can wax and wane over a lifespan
- The pattern of symptom expression varies over time
 - May fluctuate in relation to ongoing life stressors
 - Exposure to reminders of the traumatic event may trigger symptoms

Restricted to DVBC use only

Violence Associated with PTSD

- Hyperarousal = "fight or flight"
 - Amped up limbic system
 - Hypervigilance causes paranoia and misperceptions
 - Increased startle response: "ready to respond"
 - Road rage
 - Sleep violence



The Amygdala

- Linked to the frontal lobe
- Primary role is in the acquisition and the physiological expression of conditioned fears
- It processes and stores memories of emotional events
 - Stores feelings and physiologic responses associated with the event (fear with increased HR)
- The stored memory can later be triggered

Phelps, 2004

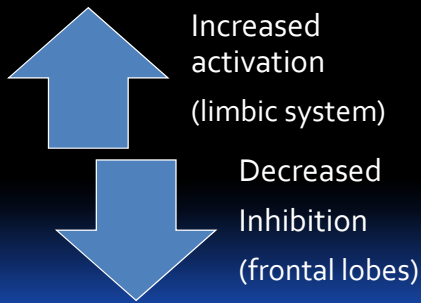
The Amygdala

- Flight and fear responses ("freezing")
- Has a distinct difference from a *conscious* feeling of fear
- Defensive or aggressive reactions
- Has a sensory input system

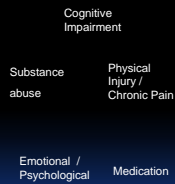
Case Example: PTSD Flashback

- Corpsman returned from 5th deployment
- Isolating behavior
- "A night on the town"

Aggression and Violence Interaction: PTSD & TBI



Co-morbid Factors Influencing Behavior





Schofield soldier admits guilt in slaying of contractor in Iraq

Honolulu Star Advertiser, 4/15/11

- Army medic & three-time Iraq war veteran
- Pled guilty to killing a civilian contractor days before leaving Iraq
- Shooting took place in a SUV on base
- Also found guilty of assaulting 3 other contractors by pointing a loaded weapon at them and of fleeing apprehension
- In a stand-off with authorities for 12 hrs following the shooting

Schofield soldier admits guilt in slaying of contractor in Iraq

Honolulu Star Advertiser, 4/15/11

- FEB 2010: Army mental fitness board found he had likely experienced a "short psychotic episode"
- Army mental health board found him fit to stand trial
- An Army friend described him as "acting strangely several days before the shooting, thinking there were wanted posters with his face and name around the base"

Early Intervention



Returning OIF/OEF Service Member's Risks for Violent Behavior

- Chronic pain effects mood
- Substance abuse
- "Adrenaline let down"
- Majority of TBI's are rated mild in severity and symptoms should match the severity
- Irritability associated with both brain injury & PTSD can lead to aggression
 - Increases the probability of violent behavior

Combat Exclusion

"The current Army policy bars women from being assigned to combat units below brigade level. . ."

United States Army War College Strategy Research Project
"Leveraging the Army Vision to Amend the Combat Exclusion Law" (2007)



"...U.S Department of Defense (DOD) policy [] prohibits the assignment of female soldiers to units whose primary mission is to engage in direct combat operations."

William and Mary Journal of Women and the Law
"A Disparate Impact on Female Veterans" (Fall, 2009)

A Double Whammy

38 CFR § 3.304

(f) . . . The following provisions apply to claims for service connection of posttraumatic stress disorder diagnosed during service based on the specified type of claimed stressor:

A Double Whammy

38 CFR § 3.304

(2) If the evidence establishes that the veteran engaged in combat with the enemy and the claimed stressor is related to that combat, in the absence of clear and convincing evidence to the contrary, and provided that the claimed stressor is consistent with the circumstances, conditions, or hardships of the veteran's service, the veteran's lay testimony alone may establish the occurrence of the claimed in-service stressor.

(5) If a posttraumatic stress disorder claim is based on in-service personal assault, evidence from sources other than the veteran's service records may corroborate the veteran's account of the stressor incident. Examples of such evidence include, but are not limited to: records from law enforcement authorities, rape crisis centers, mental health counseling centers, hospitals, or physicians; pregnancy tests or tests for sexually transmitted diseases; and statements from family members, roommates, fellow service members, or clergy. . . .

California Penal Code Section 1170.9

1982	2006	2011
<p>Only applied to combat veterans who served in Vietnam.</p> <p>Δ had to be convicted of a felony.</p> <p>Had to suffer from substance abuse or psychological problems as a result of service.</p>	<p>Problems had to stem from service in a combat theater in the United States military.</p> <p>Δ had to be convicted of a criminal offense, misdemeanor or felony.</p> <p>Applied to post-traumatic stress disorder, substance abuse or psychological problems.</p>	<p>Applies to problems stemming from service in the United States military.</p> <p>Δ has to be convicted of a criminal offense, misdemeanor or felony.</p> <p>Has to suffer from sexual trauma, traumatic brain injury, post-traumatic stress disorder, substance abuse, or mental health problems as a result of service.</p>

Mentors in Veteran Court



E-mail from mentee to mentor

Eileen, I just wanted to tell you, thank you for going to court with me and being there and believing in me.



Cynthia Boyd, Ph.D.

Co-Senior Scientific Director
Neuropsychologist
Defense and Veterans Brain Injury Center
Naval Medical Center San Diego
619-532-5715

Cynthia.Boyd@med.navy.mil

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Eileen C. Moore, Associate Justice

California Court of Appeal
601 West Santa Ana Blvd.
Santa Ana, CA 92701
(714) 571-2744

eileen.moore@jud.ca.gov

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