Neurobiology of Trauma:
The Gifts and Limits of Training for Professionals

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“Neurobiology of Trauma”

Science-Related Comments on Its History and Future

EVAWI Conference 2019

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Some History

• **2000**: David Lisak coins the phrase, “the neurobiology of trauma”
• **2012**: Rebecca Campbell popularizes in recorded webinar that’s posted on web
• **2017**: Attacked in Atlantic website story and other (repeating) sources
• **Ongoing**: Under attack in courtrooms around US and Canada
What It Means

The neurobiology of...

1. How brains and bodies respond while being attacked.
2. How experiences of extreme stress, fear, etc. are encoded, stored, and potentially retrieved from memory.

Main Function & Benefit

• VALIDATE people’s reactions to and memories of being sexually assaulted.
• CREDIBILITY of science helps people (who haven’t yet) to see the realities of how we respond to being attacked.

Gifts and Good News

Lots of great science, including neurobiology research, on how our brains respond to extreme stress and trauma.
Gifts and Good News

Most of that science is consistent with what many police and prosecutors had already learned from listening to survivors.

We Already Knew...

• People don’t always fight or flee
• Sometimes they don’t move or can’t move
• Often people feel like they “froze”
• Often “space out” other otherwise “dissociate”
• People attend to, encode, and store some parts of the experience but not others – “central” vs. “peripheral” details, and gist

New Insights, Less Obvious, But Important...

• Centrality of habit behaviors, and why
• Different types and phases of freezing
New Insights Into Memory

- Encoding and storage are never “random”
- Time-dependent effects of stress
  - Super-encoding phase
  - Minimal-encoding phase
- Sleep’s effects on storage of central vs. peripheral details...

Storage Depends on Emotional Significance, Interacts with Sleep

Time = Potential Decay, Fading, Not Retrievable


Limits and Problems

Dangers of oversimplification and confusion
- Neurobiology research can’t explain everything, e.g., laughing, numbing
- Stress and trauma don’t simply “impair” hippocampus and memory
Limits and Problems

When oversimplification and confusion lead to getting things wrong...

- Survivors can be misunderstood
- Investigations and prosecutions can have major problems
- Can harm the credibility of anyone relying upon or teaching about “the neurobiology of trauma”

Limits of “Chemicals Framework”

Science isn’t universally strong:

- **Norepinephrine and cortisol**: Definitely released. Impair prefrontal cortex and alter memory processing.
- **Opioids**: Likely released, not necessarily cause of emotional numbing.
- **Oxytocin**: Very little evidence in humans, suggests decreased release. Can be associated with negative emotions.

Challenges

Be careful and have integrity

- To learn this, you must invest significant time and effort
- If you don’t really understand, don’t claim or pretend you do.
- Feel pressure to teach this? If you’re not confident – and rightly so – don’t do it.
- Can seek solid knowledge, supervision
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Sexual Assault & the Brain

Available in English, Spanish and German, with other languages coming.

Why don't people fight or yell when they're being raped?
Why are memories of sexual assault so often fragmentary and confusing?
In the brain, the response to attack essentially the same - controlled by the defense/parasympathetic nervous system - during sexual assault, physical assault, and military combat.
The answers have big implications for people who've been sexually assaulted, for those who investigate and prosecute such cases, and for everyone else who lives or works with someone who's been sexually assaulted.

Psychology Today

Sexual Assault and the Brain
Understanding the brain under attack, and implications for justice and healing

Why Christine Blasey Ford Can't Remember How She Got Home

Why It's Time for Sexual Assault Self-Defense Training

Frozen During Sexual Assault and Harassment

One Perspective: Law Enforcement

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Advisor and Trainer
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Is Your Response Trauma-Informed?

**Trauma-Informed Care:** Strengths-based service delivery grounded in responsiveness to the impact of trauma, emphasizing physical, psychological, and emotional safety for survivors and providers, and promoting survivor empowerment.


94% of women who are raped experience post-traumatic stress disorder (PTSD) symptoms during the two weeks following the rape. 30% report PTSD symptoms 9 months after the rape.

Rothbaum & Fox, 1992; Rothbaum, Fox, Riggs, Murdock & Walsh, 1992
Impacts of Victim Trauma

Rape-related PTSD: 4 major symptoms:
1. Re-experiencing the trauma
2. Social withdrawal
3. Avoidance behavior and actions
4. Increased physiological arousal characteristics

American Psychiatric Association 2013; National Center for PTSD, US Department of Veterans Affairs

Misinterpreting Trauma:
Testimonials from Training

“I believe I may have screwed up some cases”
“I just coded a case as false, how do I make this right?”
“I am a survivor, thanks for helping make sense of this”
“Why didn’t we have this training 10 years ago?”
“Thanks for making me a better cop”
“Every Cop Needs This Training!”

Self-care is not a luxury, it is a priority and a necessity in the work that we do!

Care for Yourself, So You Can Care for Others!

Just for the Fun of It:
Try an online self-care assessment!
One Perspective: Prosecution

Patti Powers, JD
Attorney Advisor, AEquitas

The Prosecution Perspective

INNOVATIVE
Sustaining effective practices and promoting systemic change

INFORMED
Training, resources, and assistance supported by research and experience

PRACTICAL
Customized strategies that are accessible, responsive, and easy to apply
**What We Do**

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<th>Resources</th>
<th>Consultations</th>
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<td>Create, research, and curate publications, statutory and case law compilations, and other resources that strengthen prosecution practices.</td>
<td>Offer on-demand 24/7 consultations with our seasoned prosecutors to answer case-specific inquiries, discuss strategy, conduct research, and recommend data-driven solutions.</td>
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<th>Training Events</th>
<th>Partnerships &amp; Initiatives</th>
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<td>Develop curricula and facilitate a wide range of specialized in-person and web-based trainings designed to empower prosecutors and allied professionals.</td>
<td>Provide long-term support in building frameworks for coordinated responses to gender-based violence including data collection and analysis, task force development, and training.</td>
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**Support**

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**Trauma-Informed Response**

- Fully acknowledge the trauma and its impact on the individual and their disclosure.
- Recognize our tendency to minimize the trauma of crimes involving known offenders, alcohol, crimes committed without the use of traditional weapons, etc.
- Consider the likelihood of past trauma and its impact on the victim’s current response(s).
- Fully support the victim and avoid retraumatization.
Expert Testimony

Testimony by Expert Witnesses
Fed. R. Evid. 702

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

b) the testimony is based on sufficient facts or data;

c) the testimony is the product of reliable principles and methods, and

d) the expert has reliably applied the principles and methods to the facts of the case.

Responses to trauma that may require an explanation at trial

Demeanor
Recollection
Disclosure
Contact with offender
Direct Exam of the Victim  
(or Foundation for Expert Testimony)  

• Demeanor  
  • What was going through your mind during the assault?  
  • What did you do after? Why?  

• Recollection  
  • Do you remember focusing on anything in particular?  
  • Was the passage of time something you considered during the assault?  

Direct Exam of the Victim  
(or Foundation for Expert Testimony), cont’d  

• Disclosure  
  • Who is the first person you told? Why? When?  

• Contact with the offender  
  • Did you make contact with the offender after? How? Why?  

Who can provide additional context at trial?
The Danger Zones
Expert Witness Cannot Testify

- Whether victim is telling truth (applies to both sides)
- That victim's statements are reliable
- To the accused's guilt or innocence
- That perpetrator does / does not fit profile of rapist
- Statistics on truthful / false allegations

Limits of Expertise

- Experts should explain common victim behaviors without going beyond their area of expertise
- Advocates should not testify about:
  - Psychiatry / medicine
  - Anatomy / physiology
  - Neurology
**General Expert**

- Has not met the victim
- Is not diagnosing the victim as a victim of rape
- Knows very little of the facts in the case
- Only educating the judge or jury on victim behavior

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**Have expert describe victim responses**

[Diagram]

Are you familiar with different responses to sexual assault?

Can you please explain these responses to the jury?

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**Going Forward**

- Conduct trauma-informed interviews
- Facilitate direct examinations that provide the necessary context for individual responses to trauma
- Explain victim responses to trauma at trial through expert testimony
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One Perspective: Training

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“Trauma-Informed” Responses

- Training and reforms in:
  - Law enforcement
  - Health care
  - Victim advocacy
  - Prosecution
  - Other services and allied professionals

Resource: Training Bulletin

Understanding the Neurobiology of Trauma and Implications for Interviewing Victims

End Violence Against Women International

“I spent about 10 years of my law enforcement career as a criminal investigator and I want to tell you that I wish your article was available then as I find it a most valuable tool containing knowledge that every law enforcement officer should be trained in.”

“After 27 years of law enforcement, I had my ‘aha moment’ with the SBB [Start by Believing] concept and Neurobiology of Trauma.”
“The stuff they say makes no sense. So no, I don’t always believe them, and yeah, I let them know that. And then they say, ‘Never mind. I don’t want to do this.’ Okay, then. Complainant refused to prosecute; case closed.”

Quote drawn from research conducted by Dr. Rebecca Campbell.
"He wouldn't let up, pounding me with question after question after question. Trying to trick me, trying to get me to mess up. I wanted to say, ‘Hold on, give me a minute to think.’ No he kept coming at me."

“He didn’t believe me and he treated me badly. It didn’t surprise me when he said there wasn’t enough to go on to do anything. It didn’t surprise me, but it still hurt.”

Quote drawn from research conducted by Dr. Rebecca Campbell.

“Were you worried that if you gave her some time, she’d just make something up?”

Q.

“Nah, not really. I mean, some victims lie, but most don’t. Besides, if they’re lying, we’ll catch ‘em at it eventually. I think it’s just hard for victims to talk about and we just need to have a little patience.”

A.
“He made me coffee. He gave me time to just sit, collect my thoughts. We talked it through. And I didn’t feel rattled and freaked out. I’m sure I was incoherent and he just let it roll. He was patient. I felt like I was piecing it together, like a puzzle, we were putting together a puzzle. And drinking coffee.”

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**Some Limits**

**The Science:**
- Getting it wrong – perpetuating errors
- Oversimplifying – missing detail/nuance

**The Application:**
- Misapplying to victim responses/behaviors
- Overreach – training or testifying outside expertise

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Properly Using the Gifts

- Don’t teach or testify outside your expertise
- Don’t diagnose or “explain” victim behaviors
- Don’t include this terminology in your reports
- Don’t think you need neuroscience to understand or empathize with survivors

**Remember:** *We knew what trauma looked like before we had the science to explain it!*

Properly Using the Gifts

- Do the research
- Learn from the experts
- Stay within the bounds of what you know
- Use the science to expand the possibilities of how victims might respond and behave
- Observe and document, don’t “diagnose”
RESOURCES

Photo Credit: Center for Adoption Support and Education

EVAWI Training Bulletin

Understanding the Neurobiology of Trauma and Implications for Interviewing Victims

End Violence Against Women International

Archived EVAWI Webinars

- Neurobiology of Sexual Assault
  - 2-part webinar series by Dr. Jim Hopper

- Forensic Experiential Trauma Interview (FETI): A Trauma Informed Experience
  - Webinar by Russell Strand
Canadian Training Video

https://www.youtube.com/watch?v=HhhzJH-vw7s

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