

Sexual Assault and the Brain: Key Information for Investigators, Attorneys, Judges, and Others

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Common Brain-Based Effects: Defense Circuitry in Control, Prefrontal Cortex Impaired, Reflexes and Habits

- If someone is being sexually assaulted, as long as the person is conscious, even if intoxicated, at some point **the defense/fear circuitry will detect the attack and it will likely immediately dominate brain functioning.**
- Within seconds of the defense circuitry kicking in, the **prefrontal cortex will likely be impaired**, resulting in...
- **Bottom-up attention:** the defense circuitry, not the prefrontal cortex, dominates where attention goes.
- **Impairment of prefrontal cortex capacities** for rational thinking, coming up with effective responses, remembering important information (e.g., there are people nearby who would hear a scream), etc.
- **Reflex responses**, which are hard-wired into human brains – because we evolved as prey, not just predators. These can range from **brief freeze responses** when attack is detected (in which movement ceases, thinking stops, and the brain assesses the attack and possible escape options), to **extreme survival reflexes**, including **dissociation** (awareness is disconnected from emotions and body sensations, and one may go on “autopilot,” including engaging in sex acts), **tonic immobility** (literally can’t move or speak and rigid muscles, *different from freeze*), and **collapsed immobility** (loss of oxygen to brain, ‘dizzy’ or even pass out, limp muscles).
- **Habit responses**, including **passive** ones, such as habits **for dealing with aggressive and dominant people**, habits rooted in social conditioning, e.g., **how girls and women are socialized** to respond to males’ unwanted sexual advances (in nice, polite, face-saving ways), and/or habits **learned to cope with childhood abuse.**

Common Brain-Based Effects: Memories

- **Central details:** What the defense circuitry gave **attention/significance** during the assault. Tend to be well encoded and stored, and **more likely to be accurate, consistent, and corroborated.** They may (at first) not seem central to the case (e.g., detailed description of a table or plant), but may be consistent with states of stress and trauma (e.g., detail perceived while dissociated) and/or corroborate being in a specific location.
- **Peripheral details:** Details given **little or no attention/significance**, likely because defense circuitry didn’t see them as relevant to survival/coping. Usually encoded into memory poorly or not at all, thus **recalled poorly and/or inconsistently over time.** Reason for “fragmentary” remaining memories. May be central focus of case (e.g., perpetrator actions), but “failure” to recall **does not indicate lack of credibility** – only that they weren’t (well) encoded or stored, which is *common, especially* when brain is under attack (e.g., in combat too).
- **Time-sequence information** (e.g., the order in which sexual acts occurred) and **contextual information** (e.g., layout of a room) are often poorly encoded/stored. Again, *common* impacts on a brain under attack.
- Experiences around the time **when attack was detected** are usually well encoded and stored. Attention is still required for encoding, but because the hippocampus *temporarily* goes into **super-encoding mode**, memories of when the attack was detected may include substantial contextual and time-sequence information.

Cautions, Vulnerabilities, and Needs

- Victims’ brains can respond in **many** different ways. **Never** assume that **any** reported behaviors or memories are – or aren’t – “proof” of assault or trauma. Some people retain prefrontal cortex functioning. Some escape. Some fight – deliberately, reflexively, or from habit. Some remember in great detail. Some inaccurately recall details (e.g., due to others’ leading questions and/or their own needs and motivations) that seem “central.”
- Victims may be tormented by the (fragmentary) memories, or emotionally “numbed out” and “shut down.” They may cycle between those extremes. **It’s important not to assess credibility based on emotional state.**
- Symptoms and problems may be **attempts to cope**, including using substances to escape terrible memories, or compulsive or risky sexual behaviors in attempt to gain a sense of control over one’s sexual experiences.
- **Stress impairs recall**, even when people are sincerely trying their best. And having to talk about the assault **can feel like having one’s “defenses” battered down.** Therefore, it’s common for people being questioned or testifying to have difficulty recalling and articulating parts of the assault experience, particularly parts that are very disturbing or associated with shame. Also, while and after disclosing such things, especially under cross-examination (figurative or literal), they may feel as the assault made them feel: traumatized, violated.
- **Most important needs: safety, control, trust, understanding, and compassion.** Find ways to meet these needs within the boundaries of your professional role and appropriate procedures. Even simple options and choices, like whether or when to take breaks, can help a lot – improving cooperation and results.

Common Sexual Assault Behaviors

Reflexes & Habits

Freezing

- Detection
- Shocked
- No-Good-Choices

Extreme Survival Reflexes

- Dissociation
- Tonic Immobility
- Collapsed Immobility

Passive, Polite

- From dating
- From child abuse
- From domination

Dissociative

- Autopilot
- Submission
- Sex acts

How Brain-Based Behaviors Tend to Unfold **Over Time**

Freezing

(scientific def.)

Detection Freezing

- Everything stops
- 1-3 seconds



Shocked Freezing

- Can follow detection
- Blank mind, no behavior options to choose from
- Can last several seconds



No-Good-Choices Freezing

- Can follow detection or shocked
- Only “bad” choices of extremely passive vs. reactive behaviors
- Seconds to minutes

Rational, Deliberate Behaviors

- Less likely with more stress and trauma, due to impaired prefrontal cortex
- If do happen, not necessarily effective – and then it’s back to reflex and habit behaviors

Habit Behaviors

- Usually passive and ineffective (no self-defense training)
- Face-saving and submission habits we’ve all learned
- From gender socialization (e.g., “nice girl” habits)
- From childhood abuse experiences

Extreme Survival Reflexes

Escape (seems) impossible, intense fear and/or horror

Dissociation: Can kick in early, spaced out and/or autopilot habit behaviors

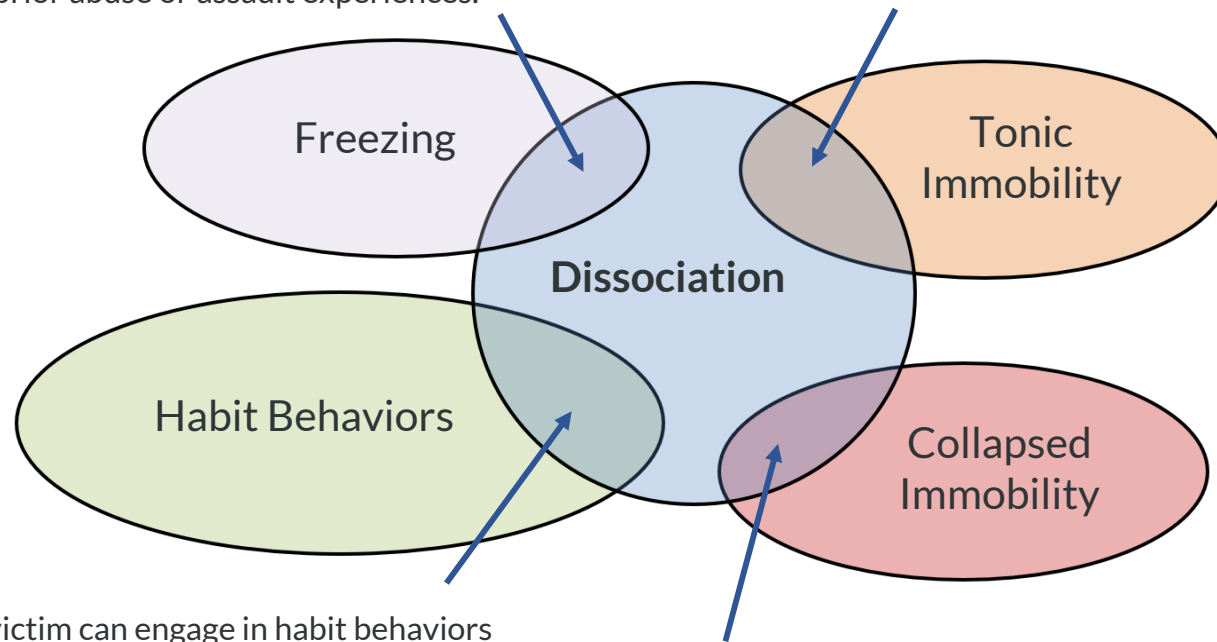
Tonic Immobility: Paralyzed, muscles rigid

Collapsed Immobility: Muscles limp, dizzy/pass out

Potential Overlaps of **Dissociation** with Freezing, Habit Behaviors, and/or Extreme Survival Reflexes

Detection freezing is very brief (<2 seconds) but it's **possible** for dissociation to kick in at the same time. Dissociation can **continue or start** during shocked freezing and no-good-choices freezing (still at the beginning of an assault), especially if the person has dissociated during prior abuse or assault experiences.

Dissociation **may or may not accompany** tonic immobility. Someone may be unable to move, yell, or even speak – yet be fully aware of the horrible sensations of being assaulted and intense emotions of fear, disgust, etc. However, dissociation is **common** in tonic immobility states, when physical escape is impossible and mental escape is the only option.



A sexual assault victim can engage in habit behaviors **with or without being disconnected from sensations and emotions**. If dissociation does kick in and the person continues with habit behaviors, that's dissociative **autopilot** – which involves **no sense of choosing** the habit behaviors in which one is engaging, which can include sex acts.

Collapsed immobility involves oxygen deprivation, and the resulting faintness or dizziness **can be hard to distinguish** from dissociative "spacing out." Also, dissociation can happen before and/or overlap with collapsed immobility. However, the passing out of collapsed immobility is very different from dissociation.