Sexual Assault and the Brain: Key Info for Investigators, Advocates, and Other Professionals

Jim Hopper, Ph.D., January 2018

Brain-based Effects: Vulnerability and Needs

- Whether people are reporting a recent sexual assault, or one from long ago, they are very vulnerable.
- They may be tormented by memories and reminders, emotionally 'shut down' and 'numbed out', or cycling between these extremes. **Be careful not to judge credibility based on emotional state.**
- Many symptoms and problems are **attempts to cope**. These include using substances – which may be attempts to escape terrible memories, anxiety, etc. – and compulsive or risky sexual behaviors, which may be attempts to gain a sense of mastery and control over one's sexual experiences.
- Having to talk about the assault can **feel like having one's 'defenses' battered down**. That stress can cause difficulties in recalling parts of the assault experience – even when sincerely trying – particularly parts that are disturbing, or about which one feels ashamed. Or, after disclosing such things, they may feel like they did during the assault: violated, overwhelmed, and re-traumatized.
- **Most important needs: safety, control, trust, understanding, and compassion.** Find ways to meet these needs within the boundaries of your role, including allowing them to recount what they remember first as an *uninterrupted* narrative, then asking (non-leading) follow-up questions. Even simple options and choices, like whether they want a drink, or when to take breaks, can help a lot – improving cooperation and results.

Brain-based Effects: Defense Circuitry in Control, Prefrontal Cortex Impaired, Running on Habits and Reflexes

- 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, planning effective responses, remembering important information (e.g., there are people nearby who would hear a scream), etc.
- **Reflex responses** that are hard-wired into human brains – because we evolved as prey, not just predators. These range from a **brief freeze response** when attack is detected (in which movement ceases 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,' even pass out, limp muscles).
- **Habit responses** that are 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), in **habits for dealing with aggressive and dominant people**, and/or **habits learned to cope with childhood abuse**.

Brain-based Effects: Memories

- **Central details**: What attention was focused on during assault (by defense circuitry). Tend to be very well encoded and stored, and more **likely to be accurate, consistent and corroborated** (even by perpetrator). They may (at first) not seem central to the investigation (e.g., detailed description of a table or plant), but may be consistent with states of fear, stress and trauma, evidence of being in the described location, etc.
- **Peripheral details**: Details that *did not get (much) attention*, likely because defense circuitry didn't see them as relevant to survival. Usually encoded into memory poorly or not at all, thus **recalled poorly and/or inconsistently over time**. Reason for "fragmentary" memories. May be a central focus of investigation (e.g., things perpetrator did), but 'failure' to recall such things ***does not indicate lack of credibility*** – only that they weren't (well) encoded in the first place, as should be *expected* of a brain under attack (in combat too).
- **Contextual information** (e.g., the layout of a room) and **time-sequence information** (e.g., the order in which sexual acts occurred) are often poorly encoded. Again, an *expected* impact on a brain that's under attack.
- Experiences around the time **when attack was detected** are usually well encoded. Attention is still required for encoding into memory, but because the hippocampus *temporarily* goes into a **super-encoding mode**, memories of when attack was detected may include substantial contextual and time-sequence information.