Memory for Trauma: A Primer

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This talk is a little different from our usual OSL talks that focus on response to illness; this instead is more about prevention of negative outcomes. Understanding memory, in general. and memory for trauma, in particular, can help us develop empathy for others—and for ourselves. Empathy, in turn, increases forbearance and forgiveness. In contrast, misunderstandings about memory can cause conflict and pain. So having a sound understanding of memory is like having a psychological vitamin: something that helps promote well-being and healing before problems develop.

Trauma "Basics"

By "trauma" I refer to events that push us beyond what our ordinary coping strategies can manage. This varies from person to person. What is traumatic for me is not the same as what is traumatic for you. Therefore, we must be careful to not judge another's reaction. If we had lived their life, we too would undoubtedly experience a traumatic reaction.

That said, certain events are more likely to be experienced as traumatic:

- Betrayal
- Events that threaten our life or the life of someone dear to us
- Events that shatter foundational assumptions about the world and about God—assumptions we may not have even realized we held until they were shattered, such as the belief that people get what they deserve in life and therefore truly bad things don't happen to good people. While it is possible to "cherry-pick" verses from the Bible that support this belief, a fuller reading of the Bible makes clear that such justice is a future outcome. Most of the psalms are an antidote to this belief in a just world (BJW as psychologists call it) as is Jesus' response to his disciples' question about whose sin led to a man being born blind (John 9:1-3)

Traumatic reactions are not all or none, but on a sliding scale. For our purposes, when I use the word trauma or traumatic, unless I specify otherwise, I am using those words in the broad sense of "very stressful".

Much of what is true about memory for trauma is also true of memory for pleasant or neutral experiences.

Memory is complex

Memory continues to be a mystery for scientists. It's mechanisms are extraordinarily complex. We are truly "fearfully and wonderfully made" (PS 139:14).

First, the word memory refers to many related experiences that interact, but which are processed differently through the brain. We have memory for facts, for events, for our life story, but also for skills, and for physical and emotional reactions. Memory undergirds our

personality—both our identity, our sense of who we are, as well as the consistency in actions and reactions that others observe in us.

Memory researchers divide memory into different categories. Of particular importance for understanding how trauma affects us is the distinction between explicit (also called declarative) and implicit (also called non-declarative).

- Explicit memory is what we experience as memory when we can say, "I remember..."
    - This includes memory for facts, for experiences, for our life story (which is a combination of facts and experiences).
- Implicit memory refers to remembering without having the experience of remembering. If someone asks me about what I remember about learning to ride a bike, any "stories" that emerge are explicit memory. But when I hop on a bike and successfully pedal off, I am able to do that through the exercise of memory without being actively aware that I am using memory to accomplish that skill.
    - Implicit memory includes memory for skills, actions, physical reactions, emotions.
    - Without implicit memory we wouldn't be able to stand without falling over, walk, talk, drive a car, understand language, know what foods are healthy and tasty, know how to use the gadgets in our house, know whether winter is a season we love or dread, or even have a personality.

Explicit memory looms large for us because it is what we *experience* as memory. But it is the tip of the iceberg. The greater part of memory is implicit, and implicit memory is much more important to our functioning. So there's the paradox—the forms of memory that seem big to us, that seem to be memory itself, are in some ways the least important.

Trauma and Implicit Memory

One of the predominant ways that trauma is remembered is through the body—through such things as enhanced startle reactions, other physical reactions and emotional reactions, including our typical posture. Bessel van der Kolk, a preeminent trauma researcher, wrote an article, and then later a book with the apt title, *The Body Keeps the Score.*

Implicit memory for trauma also shows itself in how we view and interact with others, including God. Depending on our experience we might be too distrustful, too aggressive, excessively accommodating, always feeling a need to placate others, always looking for a reason to be angry or always avoiding anger, etc.

Implicit memory for trauma can manifest in seemingly mysterious emotional reactions (as, in fact, can implicit memory for neutral or positive events).

Emotions have important characteristics:

- It is our God-given way of evaluating the meaning of events and communicating that to others.
- Emotional processing is a fast reaction in the brain. Reflection is a slower process, so emotion can bypass and even shut off reflection.
- Emotions *feel* true, because they usually are, but the truth may be in the past and reflect a highly specific circumstance that we may not explicitly remember. When the memory is implicit, we may "attach" the emotion inappropriately to some current circumstance.

Trauma teaches us very important lessons and so it stays with us. For example, if our fingers brush a red hot burner, we will never need to be taught that again. So these implicit memories are both very enduring and can have a potent impact on our behaviour.

If we really grasp the significance of implicit memory for stressful events, we'll have much more empathy for others. We will recognize that the behaviours and reactions we find frustrating, annoying, even horrifying in others—and in ourselves—occur for a reason. We are seeing wounds and scars, people haunted by memories—memories they mostly don't even recognize as memory.

This is not to say such wounds are an excuse. We still have responsibility to learn how to manage our own reactions and to seek healing as necessary.

When people appear to forget trauma, partially or in its entirety, they are not truly forgetting, because implicit memory is *not* lost. They instead lose access to that smaller part of memory—explicit memory.

Trauma and Explicit Memory

Trauma can affect both memory for facts and for events, but for this short primer we will focus on memories for events.

Trauma can affect such memory in apparently contradictory ways: We can remember too much and/or remember too little.

- One common response following trauma is to have intrusive, uncontrollable memories, reliving events over and over again. There's a timeless quality so that years after it can be as vivid as if it just happened.
    - In one sense the vividness and timelessness are adaptive. It is our brains' way of signaling that we need to make sense of and process this event(s). To do this, we have to gradually overcome our natural avoidance of painful memory (and of pain generally). As we do, gradually the memory may find its place in the past, and like other memories become something we can freely recall and set aside, as circumstances require. But that process takes a loooong time, which is why you never want to ask a trauma survivor, "Why aren't you over it yet?" Research has

shown that intrusive, vivid memories can persist decades after a traumatic event.

- Quite commonly, it can go in the other direction: There can be partial or even full amnesia for the event(s).
- Amnesia has been documented across all traumas including war, the holocaust, natural disasters, sexual assault and abuse.
- There can be a curious type of partial amnesia, in which the person remembers the events, but not the emotions they experienced. They may even conclude "It wasn't that bad." But their implicit memory tells a different story because they will show outbursts of emotion they do not recognize as linked to the trauma—anger being particularly common.

Explicit memory is more vulnerable to manipulation by others and to deterioration as a result of aging, injury, and disease such as dementia. Implicit is much less vulnerable and more reliable.

The whole topic of amnesia became the subject of a vicious political battle in the 1990's called the Memory Wars.

Prior to the 90's the helping professions—psychiatry and psychology—believed that child abuse was so rare that only one in a million or two million experienced it. Then a groundswell brought attention to sexual abuse, first in girls and then eventually in boys. Along with that came a greater awareness of the prevalence of physical abuse and domestic violence. These revelations resulted in a huge societal upheaval, and initially widespread disbelief. No one wanted to believe there was so much evil in the world and it was more comfortable to believe that people's memories were false, particularly when those memories involved an apparent recovery after a period of amnesia. And of course, some of the people who committed these offenses and could previously count on them staying secret, were now having their wrongdoings brought into the light—and were fighting back.

What is the state of our knowledge now?

- Amnesia has been well documented for over a century, as has delayed recall
- People are as likely to have corroboration for delayed recall as for traumas they have always remembered
- Delayed memory (and "amnesia") can happen with positive events, too
- False memories—or confabulation being the better word—is most common in dementia. But under strong social influence, a minority of people can develop something like a memory—though often they can differentiate it from a real memory—for things that are similar to experiences they have already had. Under situations of extraordinary influence—such as with "brainwashing"—you can get more substantial distortions of attitudes, beliefs, explicit memory.
- Some false memories occur spontaneously and build on actual prior experience.

To sum, delayed or recovered memories are usually memory, *but* memory of any sort is imperfect.

Which brings us to the accuracy of memory

Barbara Kingsolver once wrote: "Memory is a complicated thing. A relative to truth but not its twin."

Two errors we can fall into:

1. Thinking memory is truth.
2. Thinking memory is mostly untrustworthy.

1. ***Memory starts with attention, and attention is limited.*** We can only take in so much, and we are selective about what we notice. This reality encourages us to come together as communities to share our perceptions when we want to know the fuller truth, whether it be what is noteworthy in a scripture passage or whether it is what happened at a crime scene. Our inevitable differences in perception can be an occasion for division and conflict, or an opportunity, with God's help, to enlarge our understanding.

Trauma affects what we attend to, and how it does that depends on the nature of the event.

- If the situation is experienced as dangerous—our brain kicks into survival mode. Hormones and blood flow will shift—for example, blood flow will increase to our arms and legs to prepare us for flight or fight. The release of cortisol helps us tightly focus on the source of danger to the exclusion of peripheral details. Our memory, which is poor for details in general, will be particularly poor for details in a traumatic situation—much to the dismay of investigators who need such detail.
- If it is a repetitive situation—such as domestic violence, ongoing abuse, or torture in a prison—some of us *may* learn to split our attention so that we consciously "leave" the situation. In that case implicit memory will be intact—the emotions, the physical responses—but we may not have much explicit memory.

2. Memory is not a videotape stored in the brain in a specific spot.

- Memory is reconstructed each time. The brain stitches together the components of the initial experience—sensations, thought, emotions. Further, what elements get stressed will change over time as the memory is interpreted in the light of subsequent experience.
- In describing this process of reconstruction, memory researchers sometimes (unwisely) will use such terms as "purely creative" that can give the mistaken impression that there is no truth in memory. However, while explicit memory is vulnerable to influence and revision, and while its mechanisms are extraordinarily complex, it still works rather well.
- Trauma can interfere with that stitching together—and reseachers don't fully know why yet. There's lots of theories and fights about those theories! But for our practical purposes we just need to remember that it happens. As a result, explicit memories for trauma can be fragmentary: a remembered touch, a smell, a flash of an image, disconnected from a full narrative.
    - As noted already, another way the "stitching" can be incomplete is that emotion can get left out.

- Often people need to be reassured about how normal all this is, because otherwise they can think they are mentally ill.

3. ***Memories are social creatures.*** Ordinarily one memory leads to another. Under non-traumatic circumstances, our brain establishes links between new experiences and old. But sometimes memories get orphaned, because those connections don't readily exist: for example, a profound spiritual experience I had as a teenager was forgotten for decades because I could not connect it to my ordinary experience. Trauma in particular is at risk to be "orphaned".

- It can be just too different from ordinary experience to connect to it
- It can contradict other experience: e.g., sexual abuse by a person who is beloved and well-respected
- We often don't talk about trauma, but one way we make connections is by talking about memories. This has been called "the conspiracy of silence": the traumatized person doesn't want to think or talk about it, and those around them find it too painful or uncomfortable to discuss. In contrast, children whose abuse goes before the courts tend to have pretty good recall as adults. Why? Usually they have supportive parents or others who drew them out, which is why the abuse was drawn to the attention of the authorities in the first place. But also the legal process means the child will tell their story many, many times.
- And again, to reiterate, it is "just" explicit memory that gets orphaned. Implicit memory continues. But now those very reactions that are in fact memory become a mystery because they are not connected to an explicit memory. That can make the person (and others around them) think they are mentally sick, whereas their reaction is really quite appropriate to what happened to them.

4. Common Errors in memory

- Simple forgetting
- Errors that arise from limitations in original perception
- Memory for timing and sequence
- Memory for details
- Memory for the source of information/experience
- Memory leaning to what's "normative" or expected, e.g., family norms

Less frequent:

- outright confabulation or false memory
    - but there's also truth to be found in confabulation

In general, when one person says something happened, and another says it didn't, we should listen with respect, albeit with caution as appropriate, to the person who said it did happen. Does it mean it happened exactly as they described? No. But typically something like it, or something that felt similar to it, did occur.