Massage Today
September, 2003, Vol. 03, Issue 09

What Memories Can Bring

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> The charm, one might say the genius of memory, is that it is choosy, chancy, and temperamental: it rejects the edifying cathedral and indelibly photographs the small boy outside, chewing a hunk of melon in the dust.
>
> *- Elizabeth Bowen (Anglo-Irish novelist, 1899-1973)*

Teaching massage has many rewards.
One of these comes from simply enjoying the interplay of individual personalities working together closely, as we do in massage classes. An even deeper satisfaction comes in watching how students' skills develop and their confidence increases over periods as small as several weeks. These developments imply that our teaching is making it into our students' sensory input through the filters of awareness and practice, and into their multiple types of long-term memory. Without memory, we would begin anew each week and never get far. Understanding more about the structure of memory gives us a hint of how learning occurs.

Neurologists have broken the structure of memory into sensory working and long-term memory.[6] The first stage, sensory memory, receives the river of input from our senses. It has a large capacity, but only holds information for about one second. The next stage, working memory, has a more limited capacity (seven items, plus or minus two) and holds information for 20 to 30 seconds. Neurologists believe working memory can be divided into a central executive controlling attention, an auditory (phonological) input loop, and a visual input sketchpad.[1] The final memory stage is long-term memory, which handles anything we remember longer than working memory can hold. Long-term memory has a near-infinite capacity and seems to be broken up neurologically to process different types of input and content. Long-term memory is thought to divide into declarative memory (conscious memory for events and facts) and implicit memory (unconscious memory for skills; habits; repeated recognition; emotional responses; skeletal musculature;

and reflex pathways).[9]

What neurologists and psychologists have learned about the structure of long-term memory functioning has often come from examining the effects of brain injuries. More recently, functional magnetic resonance imaging (fMRI), which measures oxygen flow to different areas of the brain, has been used to display activity in different structures of the brain while doing specific mental tasks. Foster and Jelicic discuss research with amnesia from brain injury in introducing a recent compendium of articles on the structure of memory:[5]

The term ’memory’ can refer to numerous different kinds of remembering and types of knowledge. We will be dealing with information, which is retained in long-term or secondary memory, also referred to by some authors as the permanent memory store. This memory store spans a period from a few minutes to a lifetime. Within this system, evidence from amnesic subjects has proven particularly informative in determining the organization and operating principles of memory. Thus, amnesic individuals have profound memory loss for events which occurred after their brain damage (i.e. they manifest a severe anterograde amnesia), but relatively better preserved memory for events which took place before the occurrence of the brain damage (i.e. their retrograde amnesia is typically less severe). Amnesiacs also typically have preserved functions in other psychological domains; for example intelligence, perception, language and motor functions. Importantly for the theoretical view of long-term memory organization, amnesiacs continue to be able to learn specific types of new information, such as perceptual and motor skills.

It’s striking that motor skills can be learned by amnesiacs when they no longer have the ability to memorize facts or remember events for more than a few seconds. This "dissociation" between brain functions indicates to neurologists that conscious (declarative) memory and (procedural) memory for motor skills are physically separated in our brains. Even more intriguing, amnesiacs presented with a word, such as "reason," tend to complete the word fragment "rea" as "reason," rather than other alternatives, such as "reader " or "reality."[3] Although conscious memory was lost, some previous experiences remained at an unconscious level.

There is a profound implication in this research that the touch we provide in massage will interact with both conscious and unconscious memories. This provides a pathway for working with life experiences our clients may have consciously forgotten but still recall in their body usage. Such research also adds direct neurological support for pediatrician Mel Levine’s observation that neurologically based memory deficits can be very specific, compromising performance; for example, in the massive detail recall used on tests

while allowing near normal processing in the less memory-intensive activities of everyday life.[7]

The physical separation of different facets of memory helps explain the observation that the activity in which facts are presented is an integral part of what is learned. Situations co-produce knowledge through activity. Learning, and the ability to use what is learned, is fundamentally linked to the situation in which it occurred. There is a strong indication that competence can only be measured in situations approximating actual usage. Even the medical profession is becoming aware that objective knowledge and competence are not equivalent, leading to a proposal that "**professional competence is the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served**."[4]

Working with the memory we each have been given, there remain ways in which we can prompt our memories. Elizabeth Phelps describes ways that emotional content may improve recall, perhaps explaining Elizabeth Bowen's observation in my opening quote:[8]

For instance, although we know that there are several different types of memory in humans, the predominant one is the ability to recollect information at will. These memories for emotional events seem to have a persistence and vividness that other memories lack. There are several possible ways emotion may alter this explicit, hippocampal-dependent form of memory. Emotion may alter the rate of forgetting for emotional stimuli. Emotion may also provide an organizing theme to aid in later recall. Emotion may influence attention or perceptual encoding, which may effect later recollection. Emotion could also add a component of distinctiveness. All these variables may act independently to influence our ability to recollect emotional information.

Before the printing press was invented, techniques for memorization held greater importance for maintaining and passing on knowledge in an oral tradition.[10] People used mnemonic strategies that grouped information using acronyms for easier recollection. We still do this today, using the acronym SITS, to help remember the muscles of the rotator cuff, the Supraspinatus, Infraspinatus, Teres minor and Subscapularis. We still use acrostics, in which the first letter of each word in a sentence is the first letter of a bone or muscle. Thus, the phrase, "Some Lovers Try Positions That They Can't Handle" helps us to remember the eight carpal bones: Scaphoid, Lunate, Triquetrium, Pisiform, Trapezium, Trapezoid, Capitate, and Hamate.

A more involved visual format of mnemonic, the Method of Loci or "Memory Palace", dates back to the Greek orator Simonides in the 5th century BC. Supposedly, Simonides was at a banquet, but had left the room just before the roof collapsed. He helped identify the bodies by visualizing a walk through the room, as it was when he left it, noting where different people were in the room. Later, remembering would be visually associated with specific settings in visualized buildings, or so-called "memory palaces." To remember the material, one simply walked mentally through the buildings, often to recalling sequences of items that numbered in the thousands.

Memory brings us much in our senses of self and embodiment. Living within our bodies, sensory input - touch; texture; odors; and light - acts as a direct pathway into accessing memories held below our conscious recollection. In touching our clients' skin, we touch their entire lives - history, present, and future. It's something to remember.

We both know what memories can bring. They bring diamonds and rust.

- *Joan Baez*

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