



WHAT YOUR CHILD REMEMBERS

New discoveries about early memory - and how it affects us

Most of us have been told at one time or another that children aren't supposed to remember anything that happens to them before – roughly – the age of two. Emotionally painful experiences during infancy will therefore have no lasting impact. These words might have been reassuring, if they didn't also imply that our infants don't remember the love we have given them, and so our love at this time has no lasting impact either. As science continues to throw open the mysteries of the brain, and the nature of memory, this kind of advice will gradually vanish. Every emotionally meaningful experience - whether joyous or painful - is stored in memory and has a lasting impact on a baby's developing nervous system. The way our world feels to us as babies influences our unfolding personality, emotionality and relating styles profoundly, for the long term. There are different kinds of 'memory', beyond the stories we can recount. And we 'remember' a lot more than we realise.

Within the limbic system of the brain - an area concerned with processing emotions - are the amygdala and hippocampus. The amygdala processes highly-charged emotional memories, such as terror and horror. The hippocampus processes narrative, chronological memory. The amygdala is mature at birth, so babies are able to feel a range of intense emotion, even though they cannot understand the content of the emotion and its relation to what is going on around them. The hippocampus on the other hand, does not mature until sometime between the second and fourth years. Until then, babies are relatively unable to organise memory meaningfully in terms of sequences of events. Only rarely does anybody consciously recall the events of infancy. However, the storage of the *emotional* content of memory is facilitated by the amygdala. We therefore remember every emotion and physical sensation from our earliest days, and even if we have no clarity about the events that took place, these memories imbue the way we relate to each other as adults.

Just as memory can be divided up into the dual categories of 'Short Term' and 'Long Term', there are also two qualities of memory: 'Explicit' and 'Implicit'. The capacity for 'explicit' memory reaches full maturity at around three years of age. This is the kind of memory that is conscious and enables us to tell a story that makes sense of what happened. 'Implicit' memory is available from birth or earlier, it is unconscious, and is encoded in emotional, sensory and visceral recall. In other words, what we don't remember with our minds, we remember with our bodies, with our hearts and our 'guts' – with lasting implications for our thinking, feeling, and behaviour.

The process of 'forgetting' is more superficial than we once thought: it only rubs out conscious recall. Even as adults we are mercifully capable of deleting any record of traumatic events. If we are unlucky enough to face a situations of panic or terror which we feel helpless to escape, the brain secretes endogenous opioids in order to numb us to overwhelming emotional or physical pain. These brain chemicals also interfere with the



storage of explicit memory, though implicit memory of the trauma remains available. Experiences that are emotionally too overwhelming to deal with are stored somatically, as a body memory. Thereafter they are expressed as an unconscious response to stress. When we over-react to mildly stressful or even innocuous situations without knowing why, this might be the result of implicit, traumatic memories dating back to childhood or infancy.

The memory centres that govern narrative recall, emotional memory and body memory can operate independently of each other. Despite being in a coma, one man went into physiological anxiety states when exposed to a smell that was associated with a personal trauma. It is possible to have strong emotional reactions without conscious recall, even without consciousness! Another man whose damaged brain had lost all capacity for short term memory, still reacted aversively to specific doctors who had conducted unpleasant tests on him, without any recollection of having met them. A brain-damaged woman who had also totally lost her short term memory refused to shake the hand of a doctor who had earlier hidden a sharp pin in his hand. She was bewildered by her own refusal, since as far as she was aware, each time she met him was the first. So, much of what we think, feel and do is induced by implicit memories 'written' into muscle, sinew, fascia and viscera. Not one of our experiences is lost to us. Each experience, particularly those that are charged with emotion, adds to the complex mosaic of our personality.

Our brain has an amazing capacity to make associations. Something or someone that 'reminds' our brains of a traumatic situation - a smell, a song, a person that looks like someone from our past - triggers our automatic, self-protective 'fight, flight or freeze' responses. This reflexive reaction occurs too quickly; before the information reaches the cortex where it can be evaluated rationally. That is why we sometimes over-react to things, people or situations reminiscent of a traumatic event, without any conscious recollection of the event in question.

There are occasions when implicit memory can be made explicit. Since implicit memory is 'stored' in the body, repeating certain movements, gestures, breathing patterns, or assuming certain postures associated with highly-charged emotional memories can bounce these memories into explicit, conscious awareness. It is as if the body releases its secrets to the mind. Many individuals have been able to retrieve traumatic memories, both from adult and infant experiences, when induced by strong emotions associated with the original experience. In certain states of consciousness, in psychotherapy or meditation, people have spontaneously recalled things that happened to them as babies. Many have remembered how it felt to be a baby, howling for a mother who would not come. In reconstructing a particular body posture, or talking about a similar emotionally charged event, the contextual memories of unbearable longing, rage or terror come back into focus. It is equally possible for sweet, joyous memories of a parents' loving face to resurface. This phenomenon is called 'state-dependent memory retrieval', and while it is not essential, it can bring healing under certain conditions.



But even if not consciously remembered, early memories show themselves indirectly through behaviour. It is intrinsically human to re-enact defensive reactions to forgotten traumas, though our reactions are no longer relevant. Often early memories become evident through persistent feelings that don't seem to relate to a present situation, or through bodily sensations that don't seem to make any sense. More commonly, these early memories of emotional pain or hurt are indirectly evident through persistent difficulties in relationships, particularly in intimate relations.

Implicit memory - or body memory - explains why, for instance, a woman who was molested as a child remains fearful of intimacy - at least with men that 'remind' her of the perpetrator - even without a trace of conscious memory of the traumatic episodes. A man fears being alone because it triggers an emotional memory of terror as he cried in the crib, and no-one came to comfort him. He has no recollection of the event, and all around him find him likeable and congenial. He has no understanding about his compulsive avoidance of solitude. Though successful and functional, many people can be avoidant, clingy, or perhaps insensitive in relationships. These are just some of the problems of relationship that have their roots in hurts we felt at the advent of life. To some extent, most of us suffer from some behavioural manifestations of painful implicit memories.

Unbeknownst to our 'rational' minds, we sometimes respond mistakenly to current challenges as if they were the hurts we suffered originally. This dynamic holds true in our relationships with our children. There are many reasons why, for instance, we might find our children's expressions of need aversive and overwhelming. Here is a common scenario: when a baby screams, our bodies react the same way as when our parents screamed at us as children, we are neurologically conditioned to escape or push away, rather than to respond with spontaneous compassion. Alternatively, our baby's cry might trigger in our bodies an implicit memory of a time when our own cries, as infants, were not met with a loving response. Either way, our baby's cries evoke our own painful memory, and so we seek refuge. We are all biologically capable of a wellspring of spontaneously loving responses toward our children, and toward each other. Sometimes this love is blocked by automatic defensive reactions to unresolved, implicitly remembered hurts. We are not insensitive nor neglectful; we are wounded.

When a child is reprimanded, an image of the scolder's looks of disapproval gets stored in the lateral tegmental limbic area of the brain. The growing child and adult judge their own behaviour through the lens of these stored inner representations, which are imprinted as images charged with feelings of shame. These inner visual and auditory records of the shamer usually - but not always - operate beneath conscious awareness. The experience of parents setting healthy boundaries literally grows the child's orbitofrontal brain, whose purpose it is to contain and regulate raw emotion. But when the parent imposes limits, for some time following the symbiotic time of infancy, the toddler feels a degree of hurt and betrayal. This developmentally necessary change in the parent-child relationship is emotionally stressful. It is important that the parent soothe the toddler after imposing restrictions on him, to help him cope with his 'shame-stress'. Reassurance of the parent's love repairs the child's wounded 'self' and restores his self-confidence. If parents



diligently assist with their child's shame-repair, he soon learns to take over, and based on his parents' role modelling, repair his own shame when needed. Inner representations - stored as emotional and narrative memory in the brain - of a soothing and reassuring parent are used later in life as a template for shame-repair. This internal portrait of a reassuring adult is essential so that as an adult the individual won't be disabled or overly inhibited by experiences of shame. Though this process is usually unconscious, it secures our ability to self-soothe, and to recover from shame when needed.

Psychological and social problems arise when a child grows up with too many images of a disapproving face stored in the brain centres that store implicit memory, without the subsequent images of a soothing and reassuring adult. A child that lacks these positive images, stored in his emotional memory centres, is at risk of slipping into depression, becoming overly inhibited, or defensively hostile.

From the earliest moments of life, parental nurturance shapes the child's emotional make-up, literally altering the course of brain-growth. One of the key elements of secure parent-child attachment is affectionate eye-contact. A parent's sustained, loving gaze and smile suffuses infants with indescribable joy. What ensues is a cascade of dopamine, endogenous opioids, enkephalins and endorphins in the baby's brain - all feel-good chemicals associated with loving relations. This joy-precipitated surge of brain chemicals promotes the maturation of precise regions of the cortex, which are concerned with healthy regulation of emotion later in life. Every baby requires this kind of nourishing experience regularly and frequently, for healthy brain development.

By the end of the first year, the infant has stored an internal representation of her mother's loving face in the area connecting the anterior temporal and the orbitofrontal cortices. These images, though rarely consciously remembered, form the basis for an internal working model of relationships. It is as if the child has filed a video-clip of her mother in her brain's 'hard-disk'. Henceforth, these inner representations will animate her core emotional responses, forming the basis of her fundamental relationship style. When she feels her emotional needs are consistently attended to, this engenders in the child an enduring expectation of a supportive world. This attitude is pervasive and unconscious, and it inclines the child toward friendly and considerate behaviour.

Just as we might not remember learning to walk, yet our legs and feet seem to play their parts perfectly, some of our most pivotal lessons in human relations were learnt at a time that our bodies, but not our minds, can remember. The greatest gift in these discoveries is the knowledge that every loving moment we share with our children, from the very beginning, will stay with them for life.

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