Solving Clinical Puzzles: Memory as Relational Process

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This paper offers our view of memory as relational, a view derived both from Emmanuel Gheen's systems understanding of relational and from Gerald Edelman's biological understanding of process. Memory in our view is understood as relational rather than self-referenced and self-bound; as ongoing process rather than as static representation; as creation rather than as replication; as idiosyncratic in the moment rather than as faithful to the past; and as fluid rather than as fixed, although, as we stress, at times it in fact may feel so different, so fixed, and so faithful to the past. The defining attributes that we conceptualize offer a biological understanding of memory as it actually forms in the brain, emerging from dynamic neuronal patterns and the protein codes by which these variable patterns are set into motion. Generalizations derived from Edelman's global brain theory provide the clinician with both nomothetic and idiographic understanding of memory and its emergence in human experience. Specifically, three such nomothetic generalizations are described and then applied to case material, illustrating the importance of this biological brain-based conceptualization of memory to a more complex understanding of our patients.

In this paper we consider memory from our evolving, brain-based psychoanalytic perspective framed by Gerald Edelman's theory of global brain formation and function, a highly complex theory premised in biological-evolutionary science. We don't detail Edelman's theory here, nor do we fully develop our own psychoanalytic approach. Due to space limitations, these efforts must

1Edelman's (1990, 1992, 2004, 2006) theory of global brain function may be contrasted with the prevailing theory of brain postulated as specialized, segregated modules. This is the theory favored by the field of Neuro-Psychanalysis, as represented in the mission statement of the inaugural issue of the Neuro-Psychanalysis Journal (Vol. 1, 1999, pp. 3-4). Edelman's theory is an intricately developed conceptualization that in the form we present here is deceptively simple. It is important not to lose sight of the scientific grounding on which Edelman's global brain theory is premised. The theory requires for full understanding mastery of several foundational scientific premises, each of which must be articulated before his theory of consciousness as a property of brain function can be understood. It is beyond the scope of this paper to provide a full explication of these premises, but nevertheless it seems important to note them, as follows: (a) The properties of Consciousness; (b) The relevant Neuroanatomy of the brain; (c) The Darwinian principles of Evolution and Selectionism: Population Thinking; and (d) Edelman's Theory of Neuronal Group Selection, including the mechanisms of selection particular to neural networks (Edelman, 2004).

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necessarily be reserved for our book in process. Here we formulate a concept of memory applied to psychoanalysis, selecting pertinent concepts from both Edelman’s neurobiological approach and our own psychoanalytic approach. We challenge some accepted ideas about memory, offering in their place an expanded relational understanding of this foundational faculty. Our relational approach to memory is formulated at a level of abstraction higher than the level of abstraction of our more familiar psychoanalytic theories, a level consistent with Edelman’s global brain model. This contrasts also with the level of abstraction found in other neurobiological approaches, where memory may be thought of as recall of a specific event or as a designated neurobiological correlate. Again, following Edelman, our relational view of memory as process assumes the grandeur of a comprehensive life process.

To serve as referents for our ideas, we begin by introducing some puzzling events that arose within three different treatment situations. Such clinical puzzles are not ordinarily recognized in our field as disturbances of memory. However, when memory is conceptualized, not as replication or as recall of past events, but rather is reconceptualized more abstractly as biological relational process, our view of what constitutes memory changes and expands concomitantly. We argue that seeing the puzzling events we present as memories permits us to make a different kind of sense of them, opening up their meanings to clinical investigation. It is this conception of memory, then, that becomes the subject of our paper.

First, Richard. Already deep into treatment, Richard shamefully told his analyst for the first time of an often-repeated experience that was highly disturbing to him. What would happen was that he would be driving at night and would suddenly become convinced that he had just run over a pedestrian. In some confusion he would continue driving for a while, telling himself that this had happened to him before and it had always proven untrue, but he could never quite shake his sense that he was having a memory of something that actually had occurred. For no discernable reason this anxious conviction would invade Richard’s consciousness, and he would be compelled to turn his car around and return to the place where he thought the impact had occurred, and despite, once again, there being no evidence of a crime committed, he would nevertheless remain anxiously convinced that he had just done something terrible. So why does Richard experience this memory as a crime committed with guilty intent rather than as an accident, and why doesn’t the absence of evidence convince him that there really was no crime, or accident, either? How do we understand this as a form of memory, as a particular pattern of experience that continues with such pervasive power to shape and influence Richard’s sense of the real? And how does envisioning memory in this way inform and influence our clinical activity?

Second, Valerie. Six months into psychoanalytic treatment, having achieved some measure of comfort with her analyst, Valerie, midsession, suddenly and inexplicably leaps from her chair and begins to scream. Darting behind her chair and hiding there, she pleads to some unseen other to “stop, please stop!” What had just happened to Valerie in that moment to trigger such a state of panic in her, in the apparent safety of her analyst’s office? What form of memory, what historical pattern, influenced Valerie’s lived experience in that moment, shifting her from the security of connection with her analyst in the present to the panic of confrontation with another from the past? And how does envisioning memory in this way inform and influence our clinical activity?

Finally, Celia. In a recent session, Celia lay on the couch telling her analyst once more about her inexplicable nighttime suffering. She was describing her feelings, thoughts, and fantasies from the previous night, the familiar ones that she had recounted to her analyst so often over
her years of treatment. Celia would awaken in the night to a sense of being alone, creating for her a loneliness that merged into nonbeing, a feeling that she was disappearing. However, in this particular session Celia’s familiar recounting of nocturnal terror suddenly altered in quality, moving from a recounting to an actual reliving. Concerned by her patient’s shift in intensity, the analyst leaned in and lightly touched Celia’s arm as if to say, “You’re not alone.” Initially, upon her analyst’s touch, Celia protested angrily, “You have taken me away from my feelings, away from reliving this helpless emptiness with you!” Celia’s own curative fantasy (Ornstein, 1992) had required such uninterrupted telling in her analyst’s presence.

But surprisingly, in subsequent days, Celia began to describe a difference in her sleeping. The frequency of her nighttime sense of dissolving and disappearing was reduced. When the terror states did threaten, and bodily annihilation felt imminent, she discovered that she had a new capacity to find her analyst, to feel her as present. Comforted, she began to have a longer, more restful sleep. Does the analyst’s touch in this context transform Celia’s memory? What form of memory, what historical pattern, is evoked in the night and then reexperienced with her analyst in the clinical moment described? And how does envisioning memory in this way inform and influence our clinical activity?

Before we can approach the clinical questions we pose in regard to each of these patients, we must explicate our view of memory as dynamic, as fluctuating patterns arising from past experience that continuously, but variably, influence emergent patterns that organize present experience. Memory here is conceptualized as process. Ordinarily, when the concept of memory is considered in psychoanalysis, we tend to think in terms of our conscious, meaningful recollections of the past, people, places, and events that were particular to our lives, as well as those memories of people, places, and events, and their elaborations in fantasy that have been repressed and held deeply in the unconscious. Thus, in psychoanalysis, memory is conceptualized more concretely, as a product. The process from which the product may be seen to emerge is not usually our focus of attention.

We conceptualize memory differently here as far-reaching, dynamic, contextual process. The varied and various products of this process, so familiar to psychoanalysis as isolated memories per se, are seen from this perspective as manifestations of a contextually influenced dynamic process, necessarily inexact and changing by virtue of the fluctuations in neuronal connections as they interact and respond to the circumstances and conditions of their recall. It is critical to note that the word memory has been used imprecisely to refer to many distinctly different phenomena operating at distinctly different levels of abstraction. On one level, memory is understood as product, the outcome of a given process. So, on this level, memory may refer to specific episodic recollections (I remember my fourth birthday party); or to specific motor memory patterns (I remember how to ride my bike); or to aspects of semantic learning (I remember the capitals of all 50 states). On yet another level, memory may refer to a specific type of brain capacity, such as semantic memory as a capacity (I learn factual information easily and retain what I learn well); or motor memory as a capacity (it’s easy for me to learn and recall the steps of a given movement, whether it be executing the backhand in tennis or a dance sequence); or episodic memory as a capacity (I can remember the intricate plots of movies).

But in this paper, memory is conceptualized not as product, not as capacity, but as process. We speak of it as a generalized process, generalized so as to encompass the many more specific products and capacities commonly referred to as memory. Here memory is an associative, continual, and inexact process, yet one that is capable of a remarkable degree of generalization. It is
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relational, creative, idiosyncratic, emerging in the moment, and fluid. This is a systems-based conceptualization of memory, then, offering an explanatory perspective, a perspective that is distinct from the phenomenological experience of memory. Memory may feel quite different; it may feel like it just appears from the past rather than being relationally formed in the present; it may seem to be a static image rather than a fluid formation; and it may seem to be a more or less accurate, faithful-to-the-past replication, rather than an in-the-moment idiosyncratic creation.

In contrast to the way most of us actually experience memory, then, a systems perspective offers a biological understanding of memory as it actually forms in the brain, emerging from dynamic neuronal patterns and the protein codes by which these variable patterns are set into motion. We suggest that by reconceptualizing memory from concrete recall of the past to a wider biological process, our understanding of what may be seen to constitute memory is expanded, and, concomitantly, we enlarge our clinical grasp on the puzzling feelings and behaviors encountered with our patients, such as those puzzles posed by Richard, Valerie, and Celia. Memory in this abstract definition is broadened, with its clinical utility broadened concomitantly.

To continue, we conceptualize memory as an emergent property of relational process, so that the meaning of both relational and process is augmented. In speaking of memory as relational process, we are using the term as Emmanuel Ghent (2002) had defined it. Ghent, too, had been influenced by the neurobiological theories of Edelman. It was under that influence that Ghent concluded that the “relational” in relational psychoanalysis is best understood as the totality of relationships among mind, brain, body, and environmental surround. “It is this meaning of relational,” Ghent wrote, “rather than its more superficial usage as the relations between people, that gives power and significance to the term ’relational psychoanalysis’” (p. 771). By the same token, we believe that to conceive of memory as relational process endows the concept of memory with that same power and significance.

We use the term process when considering memory as relational process in the way that Edelman conceptualizes process, a fundamental process that distinguishes all life from all nonlife (Edelman, 1992). He defined memory simply and broadly for all biological systems as past patterns influencing present patterns. It is essential to understand that while in all biological life past patterns influence present patterns, they do not repeat past patterns in any exact sense, or there would be no evolution. That is, the patterns that form in the present, though significantly influenced by patterns formed in the past, are nevertheless sensitive to and responsive to the current context, to the present surround, and the relatedness and relationships entailed among between and among these constituents. It is this biological systems understanding that establishes and supports Ghent’s view of what is meant by relational, as well as what we ourselves mean by memory as relational process. Moreover, this general process that we call memory assumes various manifestations (Edelman, 1992) and, importantly from our perspective, these manifestations appear clinically in forms that have not always been recognized as memory per se, as we contend in our opening case examples.

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2For Edelman, memory is one of two forces inherent in all biological life, including human life, or, as he says, in brains, snails, and grass alike. The other force is potential. He proposes that all life is created through an evolutionary process consisting of potential, constraint; and the interactions between potential and constraint. Memory operates in this system as constraint, the past, then, tethering and organizing the forms that present and future life may assume. Potential, the other force, incorporates the enormity of genetic possibilities that exist as an inevitable part of the evolutionary selective system.
Further, to conceive of memory in this more expansive way, as biological process, offers us guiding generalities (Edelman, 2004) that are applicable to all individuals; at the same time it provides a foundation for appreciation of the unique form and content of any particular memory as it emerges in the individual. The clinician is thus offered a nomothetic understanding of memory, together with an idiographic understanding. These nomothetic-generalities of memory contrast with the idiographic-specificities of memory more familiar to us in contemporary clinical work. Qualities defined as nomothetic do not describe the form or content of any particular memory of any particular patient, but, rather, they describe general processes and characteristics of all memories of all patients. Our point is that while the puzzling events in our patients’ lives are instances of subjective, context-determined, idiographic experiences, our patients can be apprehended with more complexity and with greater empathy through understanding the nomothetic processes that gave rise to their idiographic experiences, as we demonstrate next.

To approach the puzzling clinical events experienced by our patients from a nomothetic perspective, we describe three universal qualities of memory, drawing once again from Edelman’s global brain theory (Edelman, 2004). These qualities not only pertain to memory in all of its biological forms but are generalizable to everyone. The first universal quality of memory is that it is a creative event, not an exact recall of a real event, although, of course, at the time, memory feels otherwise; it seems for all the world so exact, so perfectly right. Our memories as they are originally formed and as they are later recalled are created in ways particular to ourselves. That is, memories are not simple recordings of the world “out there,” somehow separable from and independent of the operations of our own individual brain. Every brain of every person, even the brains of identical twins, is unique and uniquely related to the way the world is perceived by that person and then remembered. The philosophical linguist Steven Pinker (2007) explained that people assume that the world has a causal texture, that things can be explained by the world’s very nature. More, they assume that things in the world are laid out in space and time. But, Pinker argued, our knowledge, experience, and memories of those experiences are not abstracted from data arising directly from that world; it is the brain that organizes that sensory data into discrete categories we come to know and experience and then believe are “out there”; it is the brain that, in the first instance, creates any and all experiences we may have or that we may recall about it. There is a world of sensations and human relations that impinge on our sense organs, but we grasp that world only through the brain, which itself functions to organize and limit what we can know and experience. We can’t truly know the world in itself. This is a nomothetic generalization that may be safely applied to our understanding of all of us alike.

That memory is relational, created through the relations between mindbrainbody, and the totality of mindbrainbody’s relations to its past and to its present context, is a significant clinical finding, premised as it is on this first nomothetic, brain-based postulate. In particular, Richard in

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3While generally we speak of the system mindbrainbody in this article, here we are framing for heuristic purposes one element in that system, brain, to emphasize the contribution of brain to the emergent larger system, mindbrainbody-embedded. Historically, brain has been consciously set aside as irrelevant in psychoanalytical psychology. We focus on brain now in order to emphasize its hierarchical importance in the larger system to which it belongs. Mind emerges from brain, or, as Edelman says, mind/consciousness is entailed by the operations of brain. While most often mindbrainbody-embedded is most useful to our conceptualization, in this instance, we deliberately isolate brain to make a separate point that there are instances in which operations of brain are primordial.
our opening vignette illustrates this general quality of memory, memory as creation rather than memory as replication, as we elaborate shortly.

A second nomothetic generalization is that the quality of memory depends upon the level of consciousness that pertains in the moment. Edelman (2004) told us that memory operates differently and encompasses different characteristics at these different levels. The first level of consciousness to evolve in the human being is Primary Consciousness. This form of consciousness is the state of being mentally aware of things in the world, of having mental images limited to present perception and their associated, remembered connections from the past. In a state of Primary Consciousness, memory of the past completely depends upon perceptual cues in the present. This means that in Primary Conscious states all that can be remembered from the past is only that which is evoked by what is actually there in the present moment. Further, once the past is evoked in the present, the past becomes the present. Past and present are linked in experience and cannot be unraveled.

All mammals have this level of consciousness, Primary Consciousness, along with the characteristics of memory that Primary Consciousness entails. So, a deer that in the past has escaped an attacking bear at dusk now experiences danger when the same environmental cues are present, the particular sound and feel of the wind, the quality of the light, and the sound of the crushing underbrush. On this occasion, even though no bear is present, the deer nevertheless leaps in fear to escape a danger he can neither name nor comprehend but that he knows from the past as that past is called up to his consciousness by perceptual cues in the present, past patterns influencing present patterns: What the deer knows is that to save himself he must flee, that his very survival depends upon it.

The capacity to contextualize that experience, to reflect on it, to place it in time past, or to distinguish it as memory, is not ever available to the deer. These latter capacities are relegated to a second level of consciousness that, in its most fully developed form, is the unique property of the human being. This level of consciousness is termed by Edelman Higher-Order Consciousness, a consciousness of being conscious, which includes characteristics of a nameable social self; a capacity to deliberately remember and to self-reflect; an ability for explicit awareness of a distinct past, an identifiable present, and an imaginable future; and, finally, a sense of continuity of self and self in time, and of one's place in time. Such disruptive phenomena as dissociation, de-realization, depersonalization, and flashback states all reflect a diminished Higher-Order Consciousness, that is, a diminished capacity for reflective appraisal, each disruptive phenomena involving a rupture either in continuity of mindbody or in continuity of time/space, the latter entailing the quality of a reliving of the past as if it were the present. To repeat, we posit that the experience of these disturbing manifestations, dissociation, derealization, depersonalization, and flashback states, derive from a more or less temporary constriction in the person's access to Higher-Order Consciousness as it affects memory; it is just this constriction in Higher-Order Consciousness that is behind the puzzling aspects of memory illustrated in particular with Valerie in our second vignette.

We quote here Edelman's (2004) admonition: "It must never be forgotten . . . that Primary Consciousness is the fundamental state, for without it, there could be no Higher-Order

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4 We refer you to footnote 1, page 1, and note in particular the four foundational principles listed there. These principles undergird these two levels of consciousness.
Consciousness” (p. 59). Higher-Order Consciousness presupposes the coexistence of Primary Consciousness. Thus, when we humans are conscious, Primary Conscious processes are integral; we are never without them, nor are we ever without the associational capacities that primary consciousness entails, the essential means by which the world is first known and continues to be known. It is only when Higher-Order Consciousness is constricted that Primary Consciousness manifests as a disruptive state. We want to emphasize our own idea that it is in the context of emotional trauma that such a disruptive state can be said to emerge, and, further, that flashback experiences, as well as the less suddenly emergent, more extreme dissociative ones, can be explained in these terms. While Valerie most clearly illustrates our meaning here, Richard and Celia are also illustrative of the effects of trauma on levels of consciousness and their entailed characteristics of memory, as we elucidate in expanding our clinical material.

Our third nomothetic generalization is that while past patterns of organization continue to influence present patterns, these past patterns become unstable, vulnerable to change, in their recall. All memory is influenced and altered by present context, a defining aspect of memory as relational process. In the instance of disturbances of memory entailed in traumatically triggered flashback states, past patterns of organization continue to overwhelm and transfigure present patterns of experience unless and until the traumatic memory is interrupted during the distressing process of its recall, unless and until, that is, the context and/or conditions during recall are significantly altered.

This third general quality of memory we have identified derives from the research findings of Nader, LeDoux, and Shafe in their 2004 series of experiments on memory using rodents as their subjects (2004, 2005 in Lehrer, 2007). Their first experiment demonstrated that the act of remembering itself changes you physiologically (Lehrer, 2007). Rats were conditioned to strongly associate a loud noise with a mild electric shock. The rats cowered in fear of any loud noise once they were so exposed, and remained fearful, presumably for life. As an aside, it’s of interest to note a finding of this research team that successful conditioning is dependent upon an alteration in the protein in the hippocampus, the site of long-term memory; thus actual physiological alteration of the brain occurs when memory is created. Memory literally changes you.

To continue with our third nomothetic generalization, Nader and his colleagues conducted a second experiment, which contradicted long-standing beliefs about the stability and the unchanging nature of long-term memory, a new finding that is consistent with the general qualities we are offering here, that memory is creative, open to change, and context dependent. One group of these previously exposed rats was allowed to consolidate the fear-filled memory for 45 days before they were reexposed to the loud-noise stimulus that had previously predicted the shock. Again the rats showed fear. Next the researchers interrupted the process of pairing a loud noise with shock by injecting a chemical at the exact moment the rats were exposed to the noise that had predicted shock. The loud noise came, but no shock was administered. Loud noise in these traumatized rats’ brains should continue to predict impending shock, and it should predict this for a very long time, if not “forever.” Scientists have long believed that long-term memory persists, remaining intact, despite any single interruption in its recall. However, when the experimenters injected a drug that stopped protein synthesis in the amygdala of the rat’s brain, sound and the prediction of danger were no longer linked, and the original memory was not consolidated, and the remembered link disappearing completely. So this team, on the basis of its research, concluded, and the larger scientific community then concurred, that if danger has been paired with an otherwise benign event, and the prediction of danger is disrupted (in this instance, by the injection of a
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drug that affected the amygdala), then the fearful expectation of danger that had accompanied the otherwise benign event disappears; that is, in the case of the rats, a loud noise alone is no longer aversive, and without reexposure to the shock, a loud noise will never again be aversive. This research has been replicated (Pitman, Nader, and Brunet, as cited in Kalb, 2009) with humans who had suffered from posttraumatic stress disorder. The humans, too, were administered a drug at the moment of reexposure to the traumatic stimuli. Eighty percent of the subjects no longer experienced fear with exposure to this same stimuli, the cure holding firm when the subjects were retested 1 year later. Other methods of disruption had achieved only a 50% success rate and, on retesting, showed less stability over time. Subsequent researchers are currently seeking the most efficacious drug to utilize for this purpose.

In any case, this finding has profound implications for working with traumatized patients, perhaps challenging, or at the least amending, the prevalent formulation of remembering, repeating, and working through (Freud, 1914) as constituting the most effective antidote to traumatic memory. We wonder, is it possible that remembering, repeating, and working through, without effective interruption of the nonconscious, automatic pairing of prediction of danger with an otherwise benign event, can actually rekindle and perhaps intensify the power of that prediction? What constitutes “effective interruption” must inevitably vary from patient to patient. It may be more advantageous to think in terms of, what are the possible forms of interruption, and what form would be most effective for a particular patient? Or, to state the therapeutic inquiry more succinctly, what response on the part of the clinician will serve to interrupt, rather than to rekindle, the effect of traumatic experience? What will facilitate the sought-for transformation of dangerous past experience to benign present experience? Perhaps remembering, repeating, and working through is sufficient for that purpose with some patients at some times, but clearly this is not always the case, as we illustrate in our discussion of Celia.

We have identified three nomothetic generalities regarding memory: first, memory as individual creation; second, memory as function of level of consciousness; and third, long-term, seemingly fixed memory, most notably painful, traumatic memory, as changeable through disruption at the point of its reconsolidation after recall. We are now in a better position to address the questions posed by our work with three patients who each reflect one or more of these three nomothetic generalities. We begin with Richard, the patient who compulsively retraced his route as he drove, convinced that he had run over a pedestrian. Richard’s sense of guilt had been life-long, beginning with his guilt for living at all, his sense that his being born had ruined the lives of his parents, something they actually told him often. With his birth, his mother’s career was stillborn and his father felt buried alive, hating both mother and son. So, what crime does Richard unconsciously recall and accuse himself of committing, if he hasn’t run over some unknown man? And how are we to understand the unconscious aggression that fuels him, engendering an experience so powerful that he loses touch with more ordinary reality? Was the fantasy a reference in metaphor to a murder committed on the road to Thebes? In other words, does it reflect an earlier, buried, Oedipal guilt about remembered, forbidden sexual desire toward his mother and murderous hatred toward his father? Or is it better understood as Richard’s undeniable unconscious reactive aggression expressed in his damaging an unknown individual on the road, a reaction to frustration or deprivation, to a sense born of his parents’ maltreatment and lack of regard for him as a deserving and desirable life form? Or is Richard best understood as suffering from a neurochemical disorder, not a psychodynamic disorder at all, then, best addressed with Celexa, and not with psychodynamic treatment?
All of these models might have some clinical value in helping us understand and deal with this man’s guilt and/or obsessive thoughts, unconscious memories, and compulsive actions, but what does a brain-based understanding of memory add to, though not necessarily replace, the other clinical formulations? The idea that the brain, or the brain in its inevitable context of mind-body-soul, constructs both its reality and its memory sheds some light on the troubling experience Richard has when he remembers he has run over, destroyed another. We believe that such an understanding goes beyond the more separatist idea of mind and brain as divisible, that illness is either functional or chemical. And more to the point here, the idea that memory is a creation, an act of imagination always contextually determined, provides a different, additional perspective. What was discovered in his analysis is that what had triggered Richard’s memory when he fears that he has done damage to another while speeding in his car, influencing current patterns. The experience of having power combines with an old experience of inflicting damage by just being, and emerges into his conscious awareness in the context of the analytic relationship. In short, for Richard, being in control of a car, driving fast and furiously on a roadway, means doing damage, and is a reminder that by being born, he has done damage, and that by living an active, agentic life, he continues to do damage. The memory he suffers from is the destruction of others, and paradoxically he suffers from the very memory he has created. He thus carries an unshakeable conviction that he has run over someone on the road, his own reality. To ask the question, “Did it really happen?” becomes moot for him, and in any case is of very little help in comprehending the inventive mind. Thus, Richard exemplifies Edelman’s nomothetic generality that memory is an act of creation, with the form and content of his memory exemplifying the idiographic individuality of that creation.

Recently, Richard told his analyst that his experience of running someone over had all but disappeared. He no longer has to retrace his steps, and he no longer fears that he has murdered, but he still can experience an emergence of more mild anxiety and guilt while driving, which he can easily mitigate by remembering, instead of the evil deed, the emotional sharing of experience with his analyst. The amelioration of this connection between an agentic self and doing damage to others is disrupted by his relationship with his analyst, reflecting an instance of the third nomothetic generality. Richard commented, “It seems that I keep you with me in my car.” The old, remembered connection between agency of the self and destruction of the other disappears for Richard, and a new freedom to be, to experience a self without self-hatred, has emerged.

Now Valerie, the patient who suddenly, seemingly out of nowhere, sprang from her chair and began screaming, and then, almost inaudibly, pleading, “stop, please stop!” This picture illustrates to our mind the emergence of a flashback in which Higher-Order Conscious memory recedes as Primary Conscious memory prevails. Ultimately, Valerie and her analyst were able to unpack the trigger for this flashback form of memory. She had been telling her analyst for the first time about the persistent rectal blockage she had suffered following giving birth. Her surgeon husband, after some delay, determined that he could do the necessary surgical procedure at home to relieve the blockage, against the advice of her doctor because no anesthesia would be available at home. It was when Valerie was describing with only a trace of anger this frightening, painful experience inflicted on her thoughtlessly, even with cruelty, that the flashback emerged, although the earlier traumatic memory that lay behind the flashback took much longer to surface. What came first, taking the form of a series of flashbacks, were visual and aural perceptions that had also been dissociated, arising piecemeal in her analytic sessions created for her in the moment from
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her sudden disturbing associations to similar trauma states; these included perceptions of isolated objects such as a pink lampshade she recognized from her grandfather’s bedroom, the red pajamas she had worn in childhood that floated alone in one image, which later she saw, or, more, felt, being removed from her while she seemed to struggle out of sleep, and single body parts, an arm, a hand, a fist. Each of these images seemed to emerge out of nowhere, during apparently normal interactions with her analyst, and once triggered, induced in Valerie states of terror. In the interests of time we do not describe the means by which the unwanted but unavoidable conclusion was drawn of earlier vaginal molestation, together with anal rape; instead we move directly to how Edelman’s concept of two levels of consciousness influences our understanding of the emergence of traumatic memory in a Primary Conscious state. Valerie was, and still is at times, abruptly, and without warning, triggered by some unrecognized association to traumatic past experience. She is catapulted into states of Primary Consciousness, frozen, fixed in time within a scene from her past retrievable only with cues emerging in the present, such as those embodied for her in telling her analyst about the anal pain inflicted by her husband’s surgical intervention. Such cues served to revivify the heightened moments of horrifying past experience, which had been disconnected from her available memory since the moment of trauma, but still preserved in that disconnected form. Her perception, whether visual, aural, or olfactory, was remembered and connected with previous experience only as it figured in the moment. Her present experience was tied to her real, lived traumatic experience, then, and limited to that chunk of time and its associated connections in which she was traumatized. In a flashback, the present in the here and now didn’t exist for Valerie; only the “there and then” existed, with its expectation of being caught within a particular relationship, the relationship of her traumatized self with a traumatizing other from her past.

This, then, was the traumatized self-state that emerged when Valerie was triggered by particular images and memories that assailed her, thrusting her into states of Primary Consciousness and challenging those capacities ordinarily available to her that would have allowed her access to the abilities attendant to Higher-Order Consciousness.

These two levels of consciousness as revealed in Valerie’s story help us to comprehend as a nomothetic generalization, the origins and properties of pathogenic traumatic states and their attendant memories, as well as the means by which recovery from trauma is made possible. We cannot address here the long clinical process of cure, by which we mean Valerie’s new and increasing capacity to integrate her traumatic dissociated states into an experience of a cohesive, coherent, vital sense of self, a sense of self entailed in Higher Order Consciousness and not available, not even possible, in Primary Consciousness. Suffice to say that Valerie’s cure depended on multiple experiences within the clinical setting of remembering, repeating, and working through, but with these processes being understood more complexly through a brain-based perspective than had been understood through a classical perspective. The remembering is done through a shared enactment between patient and analyst of procedural experience at a Primary Conscious level. The relationship with the analyst facilitates the movement from Primary Conscious activity to Higher Order Conscious activity. In repeating the experience, Valerie moves from one state to the other in connection with her attuned analyst, and through this vacillation, she integrates the static, isolated images of Primary Consciousness with the fluid and expansive, personally endowed meanings of these images entailed in Higher Order Consciousness. What is also curative is the safety Valerie experiences in remembering and repeating past terror with her analyst. Rather than reexperiencing the psychic aloneness of the earlier trauma as recalled in the
analytic situation, a psychic aloneness that, in itself, can be retraumatizing, she instead shares the enactment with her analyst. The fixity of the concrete melds into the fluidity of the symbolic as these images are worked through in Higher Order Consciousness.

Finally, we turn to Celia, the patient who would awaken in the night with a pervasive sense of loneliness that merged into non-being, a feeling that she was disappearing. As you may recall, her analyst touched her arm during a session when Celia seemed to be actually reliving her experience, instead of merely describing it, the analyst’s touch producing an unexpected change in Celia’s subsequent nighttime experience.

Before this surprising incident with her analyst, however, Celia had continually described her nocturnal self in this way: “My whole being is in pain,” she would say, “The pain is not in my body. It is not located anywhere in my body. My body does not have a boundary. All is pain, like I’m being shredded.” She would ask, “How can your words reach such painful dissolution, a lived insubstantiality?” In talking about herself somatically, Celia had described her body as being reduced to mouth and anus, the rest entirely absent. She was tears, mucus, a heap of soil, and unheard screaming. Antidepressant and antianxiety pills did not affect these excruciating states, and while Ambien did bring on sleep for a few hours, the quality of that sleep was not restful; and even with sleep, these states of annihilation did not recede.

What had always been known to Celia and her analyst, but for a time had not really been tied to these annihilation experiences, was that from birth on, Celia had been put away in her room for sleep, a room deliberately located at such a distance from her parents that her cries, cries of hunger, discomfort, sadness, fear, or terror, would simply be unheard. In this way the parents could know nothing of her abject states of misery. Celia knows all about this room configuration, as she had the same bedroom from infancy on, and continued to inhabit this room throughout her childhood, her mother acknowledging that neither she nor her father had wished to be disturbed at night by Celia, and hence, they were not. They needed their sleep.

The connection between her current nighttime experience and her infant- and childhood experience was ultimately understood, together with the bodily manifestations that seemed to reflect her emptiness and hunger, and, more importantly, the lack of a coherent experience of her body self at nighttime that still persists. No sleep medication alleviates these mind-brain-body memories. We can understand Celia as being the victim at night of old, repeated triggers; her Higher Order Consciousness would recede, and a Primary Conscious state would emerge, giving rise to her continual reexperience of trauma. In her analyst’s office, explicitly remembering and deliberately rehearsing the experience in the hope that she could master the trauma had not worked; it did not succeed in mitigating her nighttime misery. But then, her routine of morning time analytic sessions changed to early evening. Serendipitously, with this change in time, the milieu of her analyst’s office came to replicate the familiar conditions of her childhood room. As darkness fell over the office in that session, Celia changed her position to lie differently on her analyst’s couch, facing the window and viewing the leaf-covered tree outside, just exactly repeating the placement of her childhood crib, which similarly faced a tree-lined window. It was that view in the dark, matching as it did her early childhood vantage point, that triggered the reliving of being shut away in the dark, and it was then in her analyst’s office that Higher-Order Conscious memory faded, and that Primary Conscious memory was evoked by the sight and feel of familiar traumatic bedtime cues. Rather than remembering and repeating, then, she was actually reliving her trauma, the familiar procedural memory from childhood of aloneness with the disembodied shreds of nonbeing.
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So it was in this context, the analyst being sensitive to and then alarmed by Celia’s change from telling about to reliving, that the analyst changed, too, responding uncharacteristically with a touch, as if to say, “I am here with you; you are not alone.” In other words, as the patient shifted to a procedural state of distress, the analyst matched her, using other sense modalities to reach out to her, using more than her words because, as Celia had said, words could not “reach such painful dissolution.”

All of this seems clear enough; but how did the analyst’s touch actually work to change an old, seemingly impervious, procedural Primary Conscious memory? For this we return again to the research of Nader, LeDoux, and Shafe and their experiments previously cited, demonstrating that a single interruption during the process of remembering can eradicate the traumatizing affective component of that memory. And in Celia’s case, after the analyst’s touch during her familiar reliving of an old traumatic experience, the childhood memory of being left distraught remained available, but was experienced in Higher Order Consciousness, with Higher Order Conscious capacities. Thus, Celia, even in the context of these memories of an old and familiar traumatizing experience, was able nevertheless to retain a sense of herself in time, to reflect on herself, and to separate past experience from present reality. As a result, bedtime darkness less frequently triggers an unbearable, shredded loss of self; that is, the past no longer invades the present so completely, and when it does, it no longer takes over Celia’s experience of herself quite so completely. The analyst’s touch, fortuitously occurring at the moment of reliving, entered into her experience, altering that memory and diminishing the power of the past.

CONCLUSION

Our view of memory as relational process is derived from both Ghen’s systems understanding of relational, and Edelman’s biological understanding of process. We suggest that a more complex view of our patients and the ways in which memory contributes to their suffering is advanced though this more abstract understanding of memory as relational process. To summarize succinctly, we understand memory as relational, rather than autotelic, that is, self-referenced and self-bound; as ongoing process rather than as static representation; as creation rather than as replication; as idiosyncratic in the moment, rather than as faithful to the past; and as fluid rather than as fixed. These defining descriptors offer a biological understanding of memory as it actually forms in the brain, emerging from dynamic neuronal patterns and the protein codes by which these variable patterns are set into motion.

Ours is not a metaphorical understanding of memory, then, memory as, for example, an introject, or an internalized object, or a fixed encoded representation, or memory as a separable thing sitting in the brain, the proverbial grandmother cell, though all of these understandings may more accurately reflect our experience of what it is like to remember.

We choose the empirically established, biologically based referent here, rather than the metaphorical referent that is more common to psychoanalytic discourse, because we have found that conceptualizing memory in its own terms, as a property of dynamic patterns of brain function, seems to facilitate a more sensitive, nuanced understanding of the person as he struggles to make

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\[5\] We again are using brain as a primordial constituent of the mindbodyembedded. See cf. footnote 2.
sense of the world he knows and remembers. Conceptualizing memory in its own terms, as inter-subjective process rather than as separate thing, even as thing in metaphor, removes fixity and concreteness, and keeps the particular memory alive and changing, open to further investigation. It is this idea, memory as ongoing relational process, which we hope we have illustrated with clinical material.

REFERENCES


CONTRIBUTORS

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