

SELF-NARRATIVES AND DYSREGULATED AFFECTIVE STATES

The Neuropsychological Links Between Self-Narratives, Attachment, Affect, and Cognition

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Recent dovetailing developments in psychoanalysis and neuroscience are increasingly providing clinicians with the ability to understand emotional difficulties and therapeutic processes in new and integrated ways. In particular, one's level of affect regulation has emerged as an important aspect of emotional wellbeing (Fonagy, 2008; Jurist, 2008; Schore, 2009; Siegel, 2007; Tronick, 2007). Not surprisingly, the emphasis on regulating debilitating emotions has come from diverse clinical approaches, ranging from Cognitive-Behavioral Therapy (Beck et al., 1990) to nonconscious affect regulation between analyst and patient (Schore & Schore, 2008; Stern et al., 1998). It is important, then, to further understand the somatic, emotional, and cognitive aspects of dysregulated states. Indeed, neuropsychological research in areas such as early development and attachment, affect and cognition, implicit memories, and intersubjectivity has opened new windows into some important parameters of dysregulation.

Keywords: self-narratives, attachment, dysregulation, neuropsychology, mentalization

This paper explores one of the more salient aspects of dysregulated affective states; namely the automatic, repetitive beliefs and ruminations about the self that often are part and parcel of unregulated emotion. As often witnessed within and outside the analytic setting, such self-narratives can acquire an intrusive, autonomous life. Strongly associated with a specific set of overwhelming or numbing emotions, they surface unbidden, flare up as familiar thoughts, fantasies, and images, and end up dominating one's intrapsychic and interpersonal experiences. These self-narratives (or ruminations) include irrational, negative convictions about the self, low expectations about one's efficacy and value, and an exaggerated preoccupation with the projected negative judgment of others. At times,

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although verbally expressing intense negative aspects about the self, these repetitive narratives are dissociated from their underlying emotions, strengthening their feel as mechanical, automatic, and inevitable. As we will see, by representing intersubjective emotional memories, what these self-narratives convey is the embodiment of both the conscious and the implicit, collapsed into an unshakable story line that becomes an inseparable part of a dysregulated self-state.

More specifically, self-narratives can be seen as part of neuropsychological schemas that originate from the child's efforts to give meaning to his or her interactional experiences. In attempting to make sense of and interpret sensory-emotional stimuli, the child's nonconscious "conclusions" regarding the self will largely echo the emotional experiences generated within an interaction. As such, the very personal words and sentences that construe self-narratives become the cognitive representations of the implicit intersubjective world. Because the development of language itself is a process that is largely embedded in the world of experience (McGilchrist, 2009), understanding what verbal self-narratives convey will lead us back to the world of experience.

During heightened emotional stress, or conversely, dissociative detachment, this set of distorted ruminations can be experienced both as an internal monologue or as urgent verbal expressions. (To narrow the scope of the discussion, this paper will focus on narratives that automatically express negative feelings and thoughts about the self. Other narratives are also prevalent, such as those that externalize or blame others). As part of a largely implicit intersubjective past, self-narratives are often triggered within the psychoanalytic dyad. Like enactments, they can become an inescapable part of the therapeutic encounter, their self-referential beliefs giving voice to encoded emotional memories and interpersonal patterns. The expressed convictions represent not just "thoughts" about the self but an entire schema or self-state with its unique emotional tones, physical sensations, cognitions, as well as implicit and explicit attachment memories (Bromberg, 2006; Bucci, 2007a, 2007b; Ginot, 2007, 2009; Lewis & Todd, 2004).

Negative self-narratives can be seen as the point of contact between affect and cognition, forming a bridge between these inseparable modes of neuropsychological functions. While a recurrent negative narrative is expressed through words and is at times entirely removed from affect, its very essence is embedded in neurally encoded emotional memories of early attachment experiences (Gergely & Unoka, 2008a, 2008b; Grawe, 2007; Lewis & Todd, 2007; Mancina, 2006). Thus, narratives become the cognitive expression of affective dysregulation, containing within them past interactions, emotional memories, defenses, and distorted conclusions, all triggered by emotional stresses activating implicit schemas. As Panksepp (2009, p.1) writes, "In humans, emotional dysregulations are invariably accompanied by cognitive "stuff"—entangled in attributions, ruminations, and all sort of hopes, plans, and worry." Especially among more dissociative patients, self-narratives may be the only manifestation of their hidden emotional and relational core.

When considering the clinical implications of self-narratives, understanding their roots can enhance our ability to help patients internalize more effective ways of regulating intense and often debilitating emotional states. Here, the importance of reflectiveness (Fonagy, 2008; Siegel, 2007), and specifically the notion of mentalized affectivity or emotional awareness, will be considered (Jurist, 2008; Lane, 2008, respectively). By widening the concept of reflectiveness to include the affective aspect of the therapeutic experiences, Jurist and Lane have recognized the inextricable connection between the verbal and the emotional, emphasizing their inherent link and the importance of this link to the process of reflection (Damasio, 2000; LeDoux, 2002; Lewis & Todd, 2007).

As automatic verbal narratives are experienced, identified, and reflected on within repeated therapeutic interactions, there is a chance for integrative and regulating processes to develop. As will be noted later, the act of reflecting on and adaptively recontextualizing one's feelings while in the midst of an overwhelming emotional state is not always smoothly negotiated. At the same time, the intersubjective processes embedded in the psychoanalytic process will enable narratives to surface and repeatedly become an object of reflectiveness within a safe environment.

The presence of entrenched, familiar narratives during dysregulated states is commonly reported by patients, affording us each time with the opportunity to dig deeper and expand out understanding of their emotional and biographical meanings. At this point I will briefly discuss a familiar presenting problem in our clinical practice—a problem illustrating the centrality of a negative narrative. John, a professional man in his thirties, sought therapy upon starting a new job, for which he underwent weeks of stressful interviews. In spite of fervent wishes for a smooth transition John experienced strong feelings of discomfort and anxiety from the first day in his new position, accompanied by debilitating physical symptoms of light-headedness, palpitations, and shortness of breath. These feelings were then followed by a state of inertia and tiredness. He was afraid he might not be able to adapt to the demands of the new job. As John said, this was not the first time he successfully held a great deal of responsibility in very visible positions, and he was quite familiar with the new job's environment, if not its details. In spite of this, John's discomfort did not lessen; on the contrary, it grew to a painful and distracting level. Thoughts of inevitable failure were constantly on his mind. He was certain he was already failing because he was not proving himself fast enough, thus disappointing those who placed trust in him. He told himself that he should perform at his utmost from the first day, and immediately impress the people who had hired him. He felt enormously flawed when he was not yet able to contribute in meetings. Unless he could do all this, he was clearly not good enough. Attempting to fight his anxious feelings and the defensive lethargy only made him feel worse.

John felt tortured by both his feelings and thoughts, and he desperately wished he felt better about himself and the new job. Glumly he said that because he felt so exhausted, he had a difficult time actually achieving what he wanted most, to become engaged again in his competent performance. What quickly became apparent was John's repeated pattern of "falling apart" each time he started a new project, always sinking for a while into what he experienced as a confusing disconnect from reality. He knew he was capable and yet had no access to his feelings of competency. Since his school days, each new grade and later each new work situation began with the same self-doubts and intense fears of being judged. The question that perplexed him most concerned his "inability to learn from reality." After all, he had gone through these experiences in the past and had always ended up performing well, enjoying both school and work.

John's predicament is a familiar one and underscores the debilitating effects of a compromised ability for affect regulation. His puzzlement about the repetitious nature of his repeated dysregulated states captured, in effect, the neurally encoded tenacity of implicit cognitive/affective states associated with particular situations. It also highlighted the difficult, if not impossible, task of differentiating between the dysregulated affect triggered by perceived threat and the automatic way of thinking that was part of it.

The following sections will present an integrative model for understanding the developmental and neuropsychological roots of self-narratives such as John's. By emphasizing their intersubjective nature and their inevitable reactivation within the psychoanalytic dyad, the suggested neuropsychological model and the following clinical vignette

will demonstrate the centrality of narratives as an inextricable part of dysregulated affect. It will also review the role of mentalized affectivity in strengthening integration and emotional regulation.

Attunement, Intersubjectivity, and Dysregulation

Although narratives are expressed through words, their first emotional roots can be found in the quality of attunement characterizing the earliest intersubjective experiences. Prolonged states of affective dysregulation will influence and shape much of the child's rapidly evolving self/other representations. Thus, attunement and intersubjectivity seem to be the two intertwined developmental forces that eventually determine the emotional foundations of well-being. As research has demonstrated, the infant's developing regulation is dependent on the caregiver's psychobiological sensitivity to the infant's shifting physiological and emotional arousal states (Beebe & Lachman, 2002; Cozolino, 2006; Fonagy, 2008; Hesse & Main, 2000; Siegel, 2007; Schore, 1994; Stern, 1985; Tronick, 2007; Wallin, 2007).

Because myelination of the central nervous system is already extensive during the first 18 months, the infant is particularly vulnerable to hyper or hypo aroused physio-affective states. Most often (not always, however, because of temperamental variations that can express themselves quite differently) an attuned parent can successfully modulate them. By helping the baby and then the child tolerate and deal with exceedingly high or low arousal states, the parent provides the initial adaptive capacities central to both self and interactive regulation. Failures at attunement can result in heightened physiological discomfort and frightening emotions that in turn cause chronic hyper arousal or, conversely, a defensive dissociative detachment (Kagan, 1998; Schore, 1994, 2003, 2009).

The role of attunement in tempering excessive arousal states is intertwined with the functions of two early developing brain regions—the right hemisphere and the amygdala. From the beginning these areas are actively involved in the perception and mediation of emotions, thus rendering the infant highly susceptible to early sensory-emotional experiences. The right brain is responsible for regulating the hypothalamic-pituitary axis, which construes the interface between the body and emotions and is the center for perceiving and processing both internally generated as well as interpersonally induced emotions. In this way it is essential to the mediation of the visceral aspects as well as the subjective experience of feelings. It is very adept at recognizing and appreciating the meaning of facial expressions, vocal intonations, and gestures, all primary communication venues from early on. In addition to being essential to the visceral awareness of the body's state of arousal, its orbitofrontal cortex is involved in regulating these sensations and their accompanying affects (Joseph, 1992; McGilchrist, 2009; Schore, 2003, 2005).

For its part, with reciprocal connections to the arousal centers in the brain stem and its neuromodulators, the amygdala contributes to a range of physiological and emotional states. On the other hand, through its extensive influence on cortical attentional/perceptual processes, it assigns heightened emotional meaning such as fear, anxiety, and rage to specific situations, events, and relational dynamics (Lewis & Todd, 2007). These emotional memories form associative learning schemas that affect and reinforce perceptions, actions, and defensive responses.

In situations of potential danger, for example, feedback from the amygdala enhanced the perceptions of threatening stimuli (Surguladze et al., 2003). And it is the right

amygdala that reacts to masked threatening stimuli and is involved in establishing implicit learning schemas (Morris, Ohman, & Dolan, 1999). Thus from the very beginning of life the amygdala mediates and encodes psychobiological emotions of danger, fear, and rage (most likely evolutionally determined as a survival mechanism), appraises and directs attention toward any perceived or real potential danger, and gives rise to automatic defensive reactions such as avoidance (Gainotti, 2006; Grawe, 2007; LeDoux, 2002; Lewis & Todd, 2004, 2007).

The interwoven processes of the right brain and the amygdalae (especially the right one) are significant in light of the relatively late development of the left hemisphere and the prefrontal cortices. Without the capacity to provide contextual understanding of internal states, and with only a varied and limited ability (greatly driven by temperament) to self-soothe, the child is vulnerable to right brain-mediated psychobiological sensations, especially those influenced by the amygdala's automatic vigilance for what it perceives as fearful and dangerous. In light of the potential for such emotional flooding, the infant and then the child is highly dependent on others for regulation (Lyons-Ruth, 2003; Schore, 2003).

As development proceeds, many layers of intrinsically linked bodily, emotional, and cognitive representations coalesce and create schemas that are highly associated with specific dysregulated states (Bromberg, 2006; Bucci, 2007a, 2007b; Lewis & Todd, 2007; Panksepp, 2009). Recalling that much of our implicit emotional memories are stored in the right hemisphere (McGilchrist, 2009; Schore, 2009), these lay the foundations for the developing linguistic skills, infusing and anchoring them, mostly out of awareness, with visceral and emotional meanings. The next section will further illustrate the central role of early intersubjective processes in the development of schemas and their inherently integrated visceral, emotional, and cognitive aspects.

Self-Narrative as a Marker of Intersubjectivity

Increasingly, intersubjectivity seems to be viewed as the ongoing interpersonal experiences driven by the need for communication and emotional resonance. Consequently, at all times, alongside the child's separateness and inherent temperament, there are always self-states that are utterly attuned to and entangled with the caregiver's physical presence, emotions, and vocal communication (Beebe & Lachmann, 2002; Bromberg, 2006; Lyons-Ruth, 2003; Schore, 2003; Siegel, 2007; Stern, 1985; Tronick, 2007). This lack of differentiation is no longer understood as simply a result of the child's supposed nonexistent subjectivity but as an active, evolutionarily determined psychobiological need (Braten, 2007; Braten & Trevarthen, 2007; Panksepp, 1998; Schore, 1994, 2003).

In their model of intersubjectivity, Braten & Trevarthen (2007; Braten, 2007) describe an interactional model that changes over time but still has one enduring characteristic: the child's other-centered focus. From primary intersubjective dialogue and mutual mirroring, the child and the caregiver's progress to secondary intersubjective attunement where the child seeks shared intentions and interests and is animated by feelings of pride, autonomy, and shame. Similarly to Schore (1994, 2003), Braten and Trevarthen consider the age of around 18 months as central to these feelings. At that time, with developing verbal skills, new forms of intersubjectivity develop. These progressing intersubjective modes are underpinned by the prevalence of mutual mental states and the ongoing involvement in others' emotions, language, and behaviors.

Tertiary intersubjective participation occurs around three to six years and is defined by the developing understanding of and the absorption in the minds and emotions of others.

Verbal exchanges, self-dialogues anchored in narrative imagination, and repeated simulation of conversations with significant adults (some already predetermined by previously encoded experiences), all lead to the development of representational schemas. Some of these implicitly become fixed verbal narratives associated with aspects of the self in times of affective dysregulation.

As higher order developments continue, children increasingly see themselves as responsible coauthors of anything they feel or think, even though the experiences they are immersed in emanate from a parent (Braten, 2007; Hermans, 2004; Lewis & Todd, 2004). When we remember that these developments are underpinned by intersubjective emotional and cognitive experiences, all rooted in the body and in its various needs, sensations, and emotions, the idea that self-narratives give voice to the world of experience is even more compelling.

Language as a Bridge Between Affect and Cognition: Self-Narratives and Their Neuropsychological Determinants

Language as well develops within “a (m)other-centered” dyadic participation (Braten, 2007, p. 123), where by the child will nonconsciously but actively coarticulate the speaker’s intensions and actual words as if he himself were a cooriginator of what is being said. This other-centered speech resonance is at play in all levels of conversation and response to parental voices and emotional states (Braten, 2007; Conboy & Kuhl, 2007; Hermans, 2004; Kuhl, 1998; Rall & Harris, 2000; Schore, 2005; Stern, 1985). Similarly, Tomasello (2001) argues that the mutually shared perception of communicative intentions, which emerges around nine months, is crucial for language acquisition. The ability to attend to the objects of another person’s reference and focus appears to be linked to the infant’s and then the child’s ability to understand and imagine himself and others as intentional agents (Fonagy, 2001, 2008).

Through the course of development, a joint body of meaning is created and consolidated in the context of the intersubjective relationship. This happens “in the form of scripts, representations, or working models” (Papastathopoulos & Kugiumutzakis, 2007, p. 224), or schemas (Bucci, 2007a). As these cocreated meanings become part of the child’s representational world, the ability to conjure up mental aspects about one’s sense of self is entirely immersed in feelings, is triggered by them, and is thus inseparable from them (Papastathopoulos & Kugiumutzakis, 2007).

As intersubjectivity implies, both parties consciously and nonconsciously affect each other and operate from an other-centered point of view. But within the parent–child dyad the latter is most vulnerable. Paradoxically, by being so essential for survival, the bonds of intersubjectivity can also carry within them the seeds for dysregulated self-states that comprise painful, traumatizing, humiliating, or confusing interactions. These shared mental states between parent and child underlie ongoing identification processes (Olds, 2006) as well as the inevitable susceptibility to distorted conclusions about the self. The inextricable links between emotional and cognitive processes generates “psychological states and action patterns that are both cognitive and emotional” (Lewis & Todd, 2007, p. 409), eventually coalescing into schemas with their particular narratives.

Through cumulative traumatic, painful, or shameful experiences, the child has no choice but to arrive at distorted conclusions about his or her self-worth, competency, and importance to the parent. In effect, the earliest psychobiological sensations may constitute rudimentary emotional feelings that in turn influence cognitive activities (Lewis & Todd,

2007; Schore, 1994). The slower developing left hemisphere adds to the process of misconceived cognitive interpretations of emotional states, as the child is not able to attribute events and emotions to their appropriate source or comprehend their context. As part of the intersubjective interactions, “explanations” or self-centered interpretations of negative sensations and emotions are automatically offered by a developing left hemisphere that is still removed from fully grasping the meaning of various experiences (Gazzaniga, 2008; McGilchrist, 2009). If reinforced enough, these explanations create layers upon layers of distorted and mistaken conclusions about the child’s sense of self.

These integrated processes are particularly significant in light of the right brain’s sensitivity to the emotions and behaviors of attachment figures and amygdala-driven intensified attention to negative emotions (Clore & Ortony, 2000; Cozolino, 2002; Derryberry & Tucker, 1994; Hanson & Mendius, 2009; Kaplan, Bachorowski, & Zarlengo-Strouse, 1999; LeDoux, 2002; Lewis & Todd, 2004; Ohman, Flykt, & Lundqvist, 2007). It is interesting to note here that the inevitable intersubjective immersion in the parent’s emotional world on the one hand, and the child’s tendency to understand and interpret events from that other-centered point of view, seem to determine our emotional/cognitive foundation.

Given these developmental circumstances, the child’s attempts to make sense of punitive, critical, or humiliating interactions will result in attributing the source of the subjective experiences to one’s self. Along the way, entrenched self-narratives develop and get reinforced. If repeated frequently enough, a closed loop will be created whereby external experiences will no longer be seen through fresh eyes but only through old interpretations and self-representations. This will determine how dysregulated self-states will be triggered, experienced, and coped with (Edelman & Tononi, 2000; Grawe, 2007; Mancia, 2006; Siegel, 2007).

As language is the connotative carrier of embodied and inchoate emotions, the link narratives provide is through words fully embedded in affect. But words also shape, form, and give meaning to the many layers of internal and external experiences, on all levels of consciousness (Clore, & Ortony, 2000; Damasio, 1994, 2000; McGilchrist, 2009; Pinker, 2007). A significant finding for this discussion is a recent neuroimaging study demonstrating that the right hemisphere’s counterpart areas for Brocca’s and Wernicke’s regions provide support for language performance as well (van Ettinger-Veenstra et al., 2010). This finding further strengthens the embodied and integrative nature of language and the complex processes that integrate emotion and cognition into a coherent, emotionally convincing narrative.

Mirror Neuron System and Attunement

As the following section will illustrate, recent research has pinpointed what neuropsychological networks may underpin the development of narrative within the child’s intersubjective environment. Among these, the mirror neuron system has been shown to construe a neuropsychological link between interacting subjectivities that observe and relate to each other. Specifically, the mirror neuron system seems to mediate action understanding, imitation, and empathy—interpersonal processes that also constitute the intersubjective building blocks of attachment. (Rizzolati, Fogassi, & Gallese, 2002; Gallese, 2006; Iacoboni, 2008). Clearly, the connection between this system and parents’ ability to be attuned to their children contributes to our understanding of what facilitates attunement and mutual regulation.

In a recent exciting study, Lenzi et al. (2008) examined mothers' fMRI while observing and imitating images of facial expressions produced by their own babies as well as by unfamiliar ones, all six to 12 months old. The four expressions shown to the mothers were joyous, ambiguous, distressed, and neutral. The mothers, assessed to be emotionally available, were also given the Adult Attachment Interview to evaluate their maternal reflective functioning. The researchers found that the mirror neuron system, the insula, and the amygdala were more active during the mothers' engagement with the images taken of their own baby. Also, the activation was stronger when they viewed emotional expressions as opposed to neutral ones. Interestingly, the level of activation was correlated with the mothers' level of reflectiveness as measured by the AAI. Imitating the expressions resulted in greater activation than observation alone, and imitating the happy expressions greatly activated the right limbic and temporal regions. Observing the ambiguous expressions activated regions in the left hemisphere, possibly reflecting efforts to cognitively decipher the babies' unclear expressions. These important findings greatly expand previous studies exploring the underpinnings of empathy—in this case, maternal attunement and its relationship to reflectiveness (Fonagy, 2001; Fonagy, Gergely, Jurist, & Target, 2002; Siegel, 2007).

Other studies also emphasized the role of the right hemisphere and the right amygdala in detecting and processing scary emotional facial expressions, reminding us of the importance of the right hemisphere to the processing of emotions (Cappelli, 2006; Carr, Iacoboni, Dubeau, Mazziotta, & Lenzi, 2003; Iacoboni, 2008). The right hemisphere's mirror neuron system, for example, became more active in adults and children who observed and imitated emotional expressions (Bookheimer & Iacoboni, 2006; Dapretto et al., 2009; Iacoboni, 2008). Given the centrality of the early developing right hemisphere, the implications of the mother's psychophysiological attunement are clear. From concrete gestures to very subtle emotional expressions, the quality, level, and appropriateness of parental attunement are perceived by the right brain, intensified by the amygdalae, and internalized as emotional memories.

The Mirror Neuron System and Language Development

The mirror neuron system has also been associated with other aspects of the self that depend on observation, imitation, and mutual embodied simulation—aspects that eventually affect self-narratives. The system's suggested link to language development is particularly exciting. Because (among other hypotheses) language is thought to originate from mutual gesture communication, some researchers have recently explored the contributions of the mirror neuron system to a range of cognitive skills that are embedded in intersubjective processes such as imitation and shared mental states (Iacoboni, 2008; Gallese, 2008; Fadiga & Craighero, 2007; Rizzolati, Fogassi, & Gallese, 2002). In studying the association between this system and social cognition, Gallese (2006, 2008) has proposed that the neurobiological functional mechanism that underpins the mirror neuron system (embodied simulation) is also responsible for the development of social meaning and symbolic language. This hypothesis seems to correspond to Braten's (2007) neuropsychological emphasis on the intersubjective properties of language development.

More specifically, Gallese and Lakoff (2005) suggest that key aspects of social cognition have become linked to brain mechanisms that evolved to enable sensory-motor imitation, namely, the mirror neuron system. Specifically, networks originally responsible for embodied simulation (neural simulation of action, intention, and emotion) later

evolved to become neural scaffolding for thought and language: “The same circuitry that can move the body and structure perceptions, also structures abstract thoughts” (Gallese & Lakoff, 2005, p. 17). Hence language that originates from mirror neuron driven perceptions of action, intension, and emotion is intimately embedded within interpersonal sensory-motor perceptions and experiences, as well as the emotional meanings attached to them.

These researchers, ever conscious of the intersubjective elements embedded in all interactions generated by the shared neural mapping, also emphasize the inevitable intersubjective characteristics of this newer neural adaptation. Similarly, Knox (2009) implicates the mirror neuron system in the child’s sense of self-agency, speculating that during the early stages of development, when the separation between primary and secondary sensory-motor areas is not yet complete, imagination and thoughts are inherently intertwined with physical action and emotional states. Further support for the embeddedness of language within the affective world comes from Panksepp (2008), who has maintained that the evolutionary transition to language involved social-affective brain mechanisms, the urge to communicate, and cross-modal cortical processing.

One can conclude, then, that language (in the form of words, concepts, images, or metaphors) derived from intersubjective attachment situations will inevitably be suffused with a wide range of sensory and affective messages. While the emotions themselves may be dissociated, “forgotten” over time, or never consciously registered in early age, they still underlie recurrent and reinforced self-narratives.

One needs to acknowledge, however, that the efforts to translate findings from neuroscience to the world of phenomenological experience are still preliminary and therefore limited in scope. This note of caution is especially called for when trying to decipher the complex properties of the human mirror neuron system. But growing evidence does point out to nonconscious mutual neural processes (Gallese, 2006, 2008; Iacoboni, 2008) that are part of all human interactions. At the very least, exploring the association between this system and various intersubjective processes, including language, reinforces one of the important themes of this paper; the primacy of bodily rooted emotional experiences that underpin human interactions and their enduring effects on the developing emotional and cognitive sense of self.

Attachment Styles and Self-Narrative as Building Blocks of Identity

Elaborating on the link between attachment styles and the various mental narratives embedded within them, Siegel (2007) considers identity to be shaped by memory and narrative, forged through adaptation to the caregiver’s attunement. Siegel mentions the four narrative structures researched in attachment studies as the bedrock of coping styles: Secure, avoidant/dismissive, disorganized/dissociated, and ambivalent/anxious attachment, and narrative patterns are seen by him as closely related to the levels of the caregivers’ empathic attunement or inappropriate intrusiveness. For instance, in disorganized attachment, a recurrent state of fear leads to neurally encoded experiences of moving away from the frightening parent, while another set of circuits will encode a move toward the parent for comfort. As the source of terror the parent cannot provide comfort or resolution, leading to a narrative characterized by fragmentation, and eventually by dissociative processes.

Employing the AAI, Main, Kaplan, & Cassidy (1985) examined the relationship between attachment and narrative structures in adulthood and determined the existence of

different narrative characteristics in secure and insecure attachment patterns. In other studies, adults with dismissing narratives and few explicit childhood memories were found to actually suppress emotional reactions as measured by dermal activity (Dozier & Kobak, 1992; Roisman, Tsai, & Chiang, 2004). Finally, ambivalently attached children and adults, who were constantly in a vigilant state of alarm, displayed a narrative focused on the centrality of others' evaluations of them, while at the same time lacking in reflection and contextual understanding (Daniel, 2009).

Although the narrative structures described by these authors may highlight the more generalized aspects of meaning making inherent in attachment, rather than individual fantasies and narratives, they nevertheless describe a link between early experiences and developing internal working models or schemas. Reflecting again on John's difficulties with new challenges, we can understand that the recurrent and debilitating dysregulated states with their predictable narratives reflected his parents' difficulties with empathic resonance coupled with unrealistic and punitive expectations—emotional attitudes that were part of many conscious and nonconscious interactions from early on. These became automatic components of any situation in which John expected to be judged. The shared emotional/cognitive space between himself and his parents, now internalized and felt to be entirely his own, was the only neuropsychological reality available to him during these stressful situations, expressed through intense fearful fantasy narratives.

Emphasizing the integration among working memory, cognition, and emotion, Grawe (2007) maintained that what becomes conditioned and automated is the cognitive assessment and the emotional meaning of a particular situation. This meaning is tied to attachment dysregulation or to repeated violations of the needs for autonomy and self-esteem among older children. Frequent parental criticism, disapproval, intrusiveness, and demeaning attitude will become the child's own personal meaning of failure and helplessness.

Later on, automatic responses are exquisitely but nonconsciously attuned to the encoded perceived meaning in similar encounters and events, triggering neurally established bodily, emotional, and cognitive tendencies (Lewis & Todd, 2007). These real-time processes, coupled with old encoded representations, impede a more direct and accurate evaluation of one's competence and strengths.

Self-Narratives and the Conscious-Nonconscious Continuum

Recent research into brain regions that constitute the default network further illustrates how the integration of memories, emotional experiences, and self-referential ideations may culminate in self-narratives. The posterior and anterior cingulate cortex, the medial prefrontal cortex, and the temporoparietal junctions have all shown significantly greater metabolic activity when the brain is at rest (Raichle et al., 2001) and engaged in internally focused tasks such as rehearsing emotional experiences and memories, envisioning the future, and thinking about the self and others (Buckner, Andrews-Hanna, & Schacter, 2008). These integrated and synchronized regions seem to be involved in selecting and storing memories according to their emotional meaning and context. Additionally, while at rest, the default network is in constant communication with the hippocampus, rehearsing and going over the selectively stored memories (Greicius et al., 2008).

The importance of the default system to self and other monitoring is also emphasized by others (Northoff & Panksepp, 2008; Uddin, Iacoboni, Lang, & Keenan, 2007) who

suggest that self-referential and affective processing occur in cortical and subcortical midline regions when the brain is in a neural resting state. In spite of what might be seen as a leap from neuroscientific findings to a hypothesis of how narratives take hold, one can still arrive at some important connections that help explain how certain brain/mind characteristics develop and endure. What is exciting in this attempt to integrate neuroscience with subjectively felt experiences is the specificity of the subject matter. One can imagine the child's immersion in the emotions and behaviors of her attachment figures, her own perceptions and affective responses, and the subsequent self-referential rehearsed ruminations, all reinforced over time.

All these processes take place on all levels of consciousness: from implicit perceptions, to the default region processing of emotional meaning, and finally to the known and automatic assessments of one's self. The ensuing self-narratives seem to construe the cognitively accessible components of the ongoing implicit processing of emotional memories. In other words, they are conscious markers of a wide range of brain/mind processes and thus provide a bridge between the conscious and the nonconscious.

Recalling the amygdala's role in mediating emotions can further clarify the links between conscious and nonconscious functioning. Throughout life, sensory stimuli activate memory traces in the amygdalae without passing through higher cortical areas, resulting in nonconscious or implicit perceptions, feelings, and behavioral tendencies (Gainotti, 2006; Huether, 1998; LeDoux, 2000; LeDoux, 2002; Ohman et al., 2000; Sergerie & Armony, 2006). Brewin (2001), for example, suggested that in the case of PTSD, emotional memories mediated by the amygdalae control one's perceptions and action tendencies throughout the life span (also, Lewis & Todd, 2007). It would be interesting to further explore the integrated processes among the amygdala, the right and left brains, and the self-referential processing of emotional memories carried out by the midline regions. How they all contribute to distorted cognitive conclusions within dysregulated states could inform therapeutic processes.

Self-Narrative and Therapeutic Enactments

Because self-referential internal monologues reflect and embody encoded past interaction, their inevitable reactivation within the psychoanalytic dyad provides a valuable opportunity to experientially access nonconscious connection between emotional memories and their representational narratives. In the entangled dyadic context of mutual expectations, need, and disappointments, the enactment of dysregulated self-states is bound to become part of the transference-countertransference relationship. In light of the ongoing nonconscious affective communication that often results in enactments (Braten, 2007; Bromberg, 2006; Gallese, 2006; Chused, 1998; Ginot, 1997, 2007, 2009; Schore, 2009; Stern, 2004), this observation is particularly compelling.

In this case, out of awareness, old patterns triggered by the analytic relationship can grow from a barely conscious emotional sense mediated by the orbitofrontal cortex into a dysregulated affect. Aided by the amygdala's vigilant emotional and cognitive appraisals, the rising dysregulation and the self-referential ruminations that accompany them will guide the experience of present-time reality through old, familiar lenses. As often witnessed in clinical situation, a blurring of internal and external realities ensues. At these moments the more affectively modulated attentional system controlled by the anterior cingulate cortex is not as active as the attention system mediated by the orbitofrontal cortex. Indeed, synchrony of the two is an important goal of therapy (Ecker & Toomey,

2008; Lewis & Todd, 2004, 2007) and can be achieved through the development of reflective awareness.

As enactments are rooted in nonconscious emotional communications, recognizing them can provide important information about dissociated and dysregulated self-states (Bromberg, 2006; Ginot, 1997, 2007, 2009; Stern, 2004). Similarly, the fantasies and self-narratives expressed during states of high or low arousal levels can convey a great deal of emotional information as well. When fully experienced and enacted within the session, dysregulated narratives can start an integrative process in the context of the reflective space provided by the analytic process. Words embedded in experiences not yet part of the conscious sense of self will help the patient reconnect with the implicit, this time questioning rigid and automatic beliefs that previously were seen as an inevitable reality.

Affective Experience and Therapeutic Change

Clinicians and researchers mindful of the role of implicit emotional experiences behind the “symptom” have emphasized their centrality for any therapeutic change. For example, Ecker and Toomey (2008; also Toomey & Ecker, 2009) articulate the importance of experiencing the implicit memories underlying symptoms within the therapeutic process. Echoing Schore’s work, they convincingly argue that merely understanding a symptom, or trying to fix it through cognitive-behavioral control, is largely ineffective because such efforts don’t address underlying nonconscious emotions. Using guided awareness, paying attention to verbal self-descriptions (these could be understood as self-narratives), their “Coherence Therapy” is designed to elicit implicit emotional constructs.

The notion that an emotional experience is essential for enduring changes of long-standing emotional and interpersonal patterns is not new, of course, and many have stressed that change without it is merely short-lived (Bromberg, 2006; Cozolino, 2002; Fosha, 2009; Schore, 2005, 2009). But in an exciting development, research has suggested that amygdala-mediated memories will become neurally labile and as such mutable only when the emotion contained within them is invoked (LeDoux & Dingfelder, 2010).

Similarly, it has been suggested that affective arousal results in increased presence of neurotransmitters that in turn enhance new learning and cortical reorganization (Cozolino, 2002). Focused attention on emotional experiences, then, is the most effective way to create enduring synaptic changes. Indeed, the dyadic aspects of the analytic relationship are greatly instrumental in facilitating the raw experience of implicit self-states. The transference-countertransference matrix, and certainly emotion-suffused enactments, can become effective conduits to implicit emotional and relational schemas. At the same time, the analytic dyad can also enable the patient to gain more adaptive affect regulation through emotional awareness.

Dysregulated-Narrative, Mentalized Affectivity, and Affect-Regulation

The potential of strengthening affect regulation through emotional awareness and reflectiveness has important therapeutic implications. Describing the actual process of reexperiencing a nonconscious memory, Ecker and Toomey (2008) suggest that within a safe, empathic environment, allowing a disturbing memory to “slide” from the (nonconscious and affective) right hemisphere into the left (more conscious and verbal) will generate change through the enhancement of reflective processes. Indeed, as Van Dillen, Heslen-

feld, & Koole (2009) showed in a neuroimaging study, cognitive tasks reduced the activity of the emotional brain (the amygdalae and the right insula). Ecker and Toomey (2008; see also Toomey & Ecker, 2009) try to induce change and symptom relief through what they term a process of disconfirmation of the underlying emotional state. Others have also considered reflectiveness, mentalization, and mindfulness as capable of promoting affect regulation (Fonagy, 2008; Jurist, 2008; Grawe, 2007; Lane, 2008; Pally, 2007; Sharpley, 2010; Siegel, 2007).

In particular, Jurist's notion (2008) of mentalized affectivity, engaging the patient's reflectiveness while still maintaining the affective qualities of the experience, seems to indicate a movement toward a fruitful integration of the affective and the cognitive elements of dysregulated states. Lane's (2008) as well as Pally's (2007) neuropsychological work similarly emphasizes that through becoming aware of affective states, emotions themselves can become subjects of real-time reflectiveness with effective therapeutic results. These writers contribute to the growing understanding that unless we consider both affect and its attendant cognitions, something important in our therapeutic efforts could get lost. What is new here is not only the recognition that reflective awareness through language can enhance affect regulation, but the fact that language itself is understood as embodied within past emotional experiences. These are expressed in various narratives that are also enacted within the psychoanalytic dyad.

Obviously, we can't directly reflect on the state of our amygdalae or other neural structures; however, we can become more aware of the implicit bodily, emotional, and cognitive constructs that we carry and act on, especially in the presence of stressors, real or imagined. The importance of therapeutic efforts toward reflectiveness is supported by neuroscientific evidence that highlights connections between mindfulness or awareness, emotional integration, and affect-regulation. Conscious awareness of emotions allows them to become further integrated with cognitive processes as well as being associated with greater impulse control (Badenoch, 2008; Ecker & Toomey, 2008; Fonagy, 2008; Jurist, 2008; Lane, 2008; Siegel, 2007). A recent paper (Lewis & Todd, 2007) convincingly delineates the cortical and subcortical underpinnings of emotion regulation, emphasizing the interactional nature of both cognitive and emotional processes. A bidirectional regulatory system construes a feedback circuit between the amygdala and the anterior cingulate cortex. Throughout development and later on, changes in ACC-mediated regulation support slowed-down responses and self-reflectiveness (Lewis & Todd, 2007; Nakao, Takezawa, Miyatani, & Ohira, 2009), changes clearly possible through the process of psychoanalysis.

Although neuropsychological research after analysis is almost nonexistent so far, a vast body of accumulated clinical experience has demonstrated that repeated awareness of one's feelings, as well as reflecting on the meaning embedded in self-narratives, more often than not does lead to emotion regulation (Cozolino, 2002; Wallin, 2007; Wilkinson, 2010). Following Lewis & Todd's model, the real-time linking of emotion, awareness, and reflection will alter the interactive loop between the ACC and the amygdala.

The following vignette will further illustrate the intersection of visceral, affective, and cognitive elements characterizing a dysregulated self-state. The patient, Keren, a single woman in her late twenties, started therapy a few years ago because of persistent feelings of anxiety and depression that, according to her, prevented her from having a satisfying relationship and from reengaging in her chosen career as a writer. In the past Keren published a few stories and received several awards. It was in the last few years, after settling in New York, that she has felt totally paralyzed by her ever-present feelings of dread. She has not written since then. She was aware of a strong wish to stay away from

others, in her words, “to hide from the world.” Particularly difficult were the daily encounters with clients at her day job at the restaurant where she worked. She was well liked but still felt uncomfortable and tense, and she couldn’t wait to get home and experience “total solitude without even answering the phone.” The sound of phone ringing would often jolt her, raise her anxiety level, and further trigger her impulse to withdraw. Though she went on occasional dates, Keren could not seem to meet anybody in whom she was interested. She vaguely indicated that she wanted a relationship—in her early twenties she used to date more and had a boyfriend for a couple of years—but she was not hopeful this could happen again.

From the very beginning it appeared that Keren was often preoccupied by pernicious and hateful self-ruminations, always accompanying her feelings of dread. She could not imagine exposing herself through writing, putting her words out for others to judge. The certainty that she would be humiliated and badly hurt dominated her thoughts, and she was constantly imagining others’ views of her looks, her personality traits, and, of course, her work. Not being able to imagine being loved by a man, she was also sure that she was destined to always take care of herself. Not surprisingly, Keren’s history quickly provided clues to the difficulty she experienced in regulating her despairing mood and negative thinking.

Keren spent her childhood and young adulthood in the children’s quarters of a Kibbutz, being part of the last group of kids starting their communal life there from early infancy on. Parents would visit the infants, but most of the time, and certainly at night, the infants were watched over by designated caretakers, and later on by teachers. Talking about her early years of life was initially very difficult and painful for Keren. During sessions and alone at home, newly recalled images, events, and experiences began to flood her, bringing up “intolerable” feelings that made her “cringe.” She had hated the children’s quarter, hated the noise, the lack of privacy, the constant intrusions, the expectations of conformity, but most of all, she had ached to have a warm connection to her parents.

Feeling insignificant and almost invisible, Keren desperately tried to be noticed by her parents, especially her father. Bitterly, she said that she had long ago given up on her mother. Keren’s parents, like many others in the Kibbutz, were very involved in their own activities, while her father, described by Keren as a loving man, was also harsh in his expectations and expressed disapproval. Keren would visit her parents’ home for a couple of hours a day, a time she had to share with her two older sisters, again in one very cramped and noisy room.

These newly discovered connections among her feelings, thoughts, and childhood brought Keren some relief and even hope. But in the face of any task that demanded “self-exposure,” such as writing or dates, Keren’s anxiety and automatic self-dismissive thinking would be reactivated, coloring her experience and influencing her actions. At the same time Keren was highly motivated “to learn new things about myself” as she put it, and in time she developed a more sustained tolerance of her feelings, often succeeding in not drowning in them entirely.

As treatment proceeded, although she was regaining confidence in her writing and had an easier time dating, she was still vulnerable to moments of despair and negative thinking. For the purpose of this discussion I will focus on a few successive sessions in which Keren’s dysregulated anxiety levels and sense of doom were entirely intertwined with the persistent negative thinking that was never too far from her consciousness. These experiences took place when Keren met a man she really liked. Almost immediately she became totally preoccupied with the nature of his feelings for her. She wildly oscillated

between being sure he was in love with her and experiencing intense anxiety about his “real feelings and intentions” and whether he found her attractive and desirable. Indeed, from early on she identified some ambivalence in his behavior and feelings, but at the same time she minimized its significance.

Within a few weeks, Keren boyfriend’s inconsistent behavior and messages eventually led to the end of the relationship. Keren’s initial response was resignation and even acceptance. Without much visible emotion she expressed regret at ever having hoped that someone would want her, wishing she had never fallen in love. She repeatedly reiterated that she would protect herself in the future. Her belief that she must have done something “destructive” to cause this break-up assumed center stage, and the occasional realization that this failed relationship could be a manifestation of her intense fears and conflicts about attachment was discussed mostly from an intellectual distance. These moments of cognitive reflectiveness did not ease Keren’s preoccupation with her numerous shortcomings, all explaining the “rejection.”

Keren’s continuous focus on her flawed self was not new, of course. But this time, the minute details of these flaws and their repeated dissection, relentlessly articulated with an apparent lack of affect, began to feel suffocating and intolerable. I felt just as stuck and numb as she appeared to be. At several points during these sessions I attempted to point out the lack of affect, the removed insights, and Keren in agreement recognized that this was how she dealt with difficult situations. “What’s the point of feeling pain?” she asked. It was enough that she knew all about it already. Obviously, it wasn’t Keren’s will power that kept her away from the raw experience of the break-up, or her childhood. Necessary coping mechanisms established early in her development were at play, protecting her from the full impact of a host of implicit memories that contained emotional neglect, lack of empathy, and acute feeling of being dismissed and unimportant.

After a few weeks I strongly felt that the only way I could regain the sense of connectedness to Keren and “free” myself from what felt to me to be exceedingly destructive feelings was through talking about my experiences and inviting her to reflect on their possible meaning. Talking about my feelings of suffocation and annoyance, I wondered whether some of my visceral experiences echoed hidden feelings within her. Keren immediately agreed that indeed it was “very possible” but at the same time she “could not do anything about it.”

This discussion again felt removed and defended. When pointing this out, I jokingly said that even expressing my feelings “was not enough to move her emotionally.” Keren weakly protested, saying that she was “dealing with feeling,” using her negative self-narratives as proof. During the next few sessions, although I also verbally expressed empathy for Keren’s need to defend herself, I was not aware of how relentless and pushy I became in attempting to get her to experience, rather than talk about, her past and her feelings. In actuality, the more I pushed the more removed and vague she became. One session Keren entered the office visibly upset, with a stormy expression on her face. She immediately proceeded to tell me that after our last session she decided to try one more time to win back her ex-boyfriend. He did not respond to her e-mail.

It did not take much to realize that an enactment had taken place between us, one that was embodied in my pushy insistence on attending to her emotional life and her flight to old defensive pattern, subsequently resulting in intense dysregulated affective state when away from me. While exploring what had taken place, between us and within her, Keren started to complain of intense physical pain, located in her abdomen and chest. She felt panicky and short of breath and talked about strange sensations that felt out of control. When she started crying, she curled up and literally wept like a baby. For a long while,

no words were uttered, as Keren struggled for breath. For my part, in spite of the strong emotions in the room, I felt rooted in our relationship, feeling at that moment that I was resonating with her affect, holding and containing her.

When she finally spoke, Keren could only talk about her experiences in the children's quarters of the Kibbutz and about the truncated relationship with her parents. But unlike before, her memories were clearly suffused with sadness, grief, and despair. The words that described her feelings were different this time as well; they didn't just repeat a well-known negative narrative but were a part of the emotional state itself, framing it and giving it shape. New memories, childhood incidents and interactions, all evoking strong emotional and bodily reactions, came pouring out over the next few sessions, and Keren's childhood took on an increasing three-dimensional sense of reality. At the same time, her ability to reflect on them even at times of emotional turmoil increased as well.

While trying to reflect on Keren's heightened emotional state, it became clear to both of us that my insistent and at times unempathic behavior had to do with both our nonconscious schemas; in becoming so pushy I tried to save both of us from an intolerable and suffocating defensive chokehold. This time around, my self-disclosure was not blocking but rather enhancing both Keren's ability to authentically become connected to her own feelings and feeling taken care of by me.

What became important to Keren was her growing ability to tolerate her feelings and to name and explain them to herself. As her tolerance of dysregulated feelings increased, Keren would remind herself that her "distress would pass" and that she "could survive any pain." After all, she said, "these were familiar feelings and thoughts, and now I know what they are. I can live with them for a while, calming myself down, breathing into them."

Although still experiencing her old patterns, Keren's struggle to make sense of her feelings, negative fantasies, and narratives and her conscious efforts to reflect on them in real time eventually provided her with a growing ability to better negotiate states of dread and despair. In this case, an enactment opened the door to a raw and lived experience of dissociated memories and relational patterns. What the enactment facilitated was not necessarily a greater understanding of the narratives themselves but an embodied and felt encounter with the very emotions that were embodied in them. In hindsight, the ostensible origin for the enactment—my insistence on experiencing Keren's emotional life—might have also created space and permission for their lived resurrection between us, their painful intensity overriding any dissociative forces.

As we have seen in Keren's case, two powerful things occur when a dysregulated self-state becomes part of the analytic interaction: the enactment of the implicit, and the opportunity to change it at its most malleable through mentalized affectivity (Jurist, 2008). Reflecting on her narratives and on the emotions embedded in them, tolerating and recontextualizing them, most likely enhanced Keren's anterior cingulate cortex activity and reduced the automatic reactions of the amygdala. Indeed, Lane found that amygdala activation was lessened with explicit emotional processing—not just describing the feelings, but verbally connecting with their visceral manifestations (2008).

Often, however, reflecting on one's dysregulated state is not an easy process, and without the safe space provided by psychoanalysis it is not generally an option that can take place in real time. Most often, entrenched coping strategies ensure that no contextual reflectiveness and therefore no new learning occur, allowing overwhelming emotions to take over. Without efficient ways to provide context, the resultant state with its embedded predictable narrative signals that nothing has changed. This emotional state, however, is the very one that can be reflected on within the empathic conditions of treatment. In Jurist's words: "Mentalized affectivity entails revaluing, not just modulating, affect.

Mentalized affectivity captures what is most challenging in adult affect regulation: that new meaning can be created and specified by reflecting upon affective experiences” (Jurist, 2008, p. 105).

Reflectiveness, as understood and discussed here, is not to be confused with cognitive approaches such as trying to “talk” one out of dysregulation. As mentioned before, the absence of an affective experience in real time may not achieve a long-term integrative regulation. In John’s case, although being familiar with his recurrent emotions and quite aware of their association to new situations, without affective experiences provided in therapy he could not “think” himself out of debilitating states. What is emphasized here is an approach that takes into account the totality of the patient’s dysregulated state.

Efforts to develop an emotional awareness of one’s narratives and emotions during dysregulation are often met with difficulties inherent in the pronounced tendency of the implicit emotional and interpersonal patterns to reestablish themselves when triggered by conditions resembling the original ones (Braten, 2007; Grawe, 2007; Lane, 2008; Wilkinson, 2010). Providing a safe place for both emotion and reflectiveness, psychoanalytic interactions provide repeated opportunities for the patient to experience dysregulated states and at the same time the chance to reflect on and recontextualize the present meaning of the very emotion itself.

Conclusion

By exploring self-narratives (accusatory and denigrating ones in particular) as an inextricable part of dysregulated affective states, this paper attempted to develop a neuropsychological model that seeks to integrate the visceral, affective, and cognitive aspects of such emotional dysregulation. Specifically, the inherent links among affect and cognition, attunement, and intersubjectivity, as well as the relationship between language and intersubjectivity, are all explored in relation to self-narratives. Mentalized affectivity or emotional awareness is examined as part of a dyadic process that can enhance affect regulation.

Self-narratives and mentalized affectivity should be further examined in the context of the difficult task of therapeutic change. Often, encoded neuropsychological patterns become self-sustaining, automatic, and difficult to modify. The issue of how to overcome the brain’s inherent “resistance” to do things differently, especially when new actions call for expending more energy (Hanson & Mendius, 2009), is important and deserves further exploration. As emphasized in this paper, the coupling of emotions and reflective awareness can reach lasting therapeutic effectiveness. Self-narratives and the emotional schemas in which they are embedded provide a spring board for the integrated processes of feeling and reflecting. This is especially significant when these narratives and schemas are enacted within the intersubjective therapeutic dyad.

Using neuroscientific findings to frame the understanding of negative self-narratives leads to several important conclusions: the inextricable link between affect and cognition, the primacy of attachment experiences to the formation of self and other representation, and the importance of accessing and reflecting on the implicit emotional structure as a condition for any enduring change. One needs to remember, however, that because much of these emerging conclusions are grounded in attempts to integrate neuroscientific research and clinical practice, the limitations in making facile leaps from findings to theory and clinical practice should be kept in mind as well. Nonetheless, we can still

greatly enhance our knowledge of how the brain/mind works, thus gaining new understanding of both dysregulation and ways to tame it.

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