Implicit memory and early unrepressed unconscious:

Their role in the therapeutic process (How the neurosciences can contribute to psychoanalysis)

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The author discusses memory from the point of view of the neurosciences and molecular biology, proposing an integration with the psychoanalytic theory of the unconscious. The discovery of the implicit memory has extended the concept of the unconscious and supports the hypothesis that this is where the emotional and affective—sometimes traumatic—presymbolic and preverbal experiences of the primary mother–infant relations are stored. They could form the ground structure of an early unrepressed unconscious nucleus of the self. Identifying the unconscious with the memory leads to a theory about its morpho-functional organization. The unrepressed unconscious can be brought to the surface in analysis through the ‘musical dimension’ of the transference, characterized by the voice (its intonation and rhythm) and the prosody of the language. Dreams can symbolically transform pre-symbolic and preverbal experiences, so that they can be put into words and thought about even without their recollection. Dreams can also create images to fill the gap of the absence of representation which characterize the unrepressed unconscious. The description of a segment of analysis of a patient suffering from death anxiety provides a clinical illustration of the theories discussed. The interpretation of her voice and of the prosody of her language, besides the work on dreams, reproduced the emotional essence of the analysand’s traumatic childhood experiences. This reconstruction enabled her to speak and think about them even without the actual recollection.

Keywords: implicit memory, explicit memory, unrepressed unconscious, neuroscience and psychoanalysis, dynamic unconscious, transference, countertransference, dreams, construction, reconstruction

This work concerns the various systems of long-term memory studied by neuroscience, and their relationship to the unconscious. It suggests that analytic work on these memory systems is essential for the success of the therapeutic process.

Memory and neurosciences

Memory, its relationship to neurosciences and its role in the therapeutic process have in recent years been studied intensively by many authors (e.g. Modell, 1993, 2004; Semenza, 2001; Shevrin, 2002). In particular, Pally (1997) has applied neurological findings on memory to her clinical work, so as to recover, in the course

¹Translated by Giovanna Ianacco.
of the treatment, those primary emotions deriving from the mother–infant relationship. Such emotions belong to infantile amnesia and cannot be remembered. Fonagy (1999) has in turn underlined the therapeutic role of experiences stored in the implicit memory, which can be recovered by analysis even without recollection. More recently, Pugh (2002) has emphasized the role of the amygdala and the basal nuclei, structures which develop earlier than the hippocampus, in the organization of the implicit memory and in the unconscious elaboration of cognitive functions.

In summary, it is known through neuroscience that there exist in our brain two memory systems, each with different functions. One system concerns explicit (or declarative) memory and another implicit (or non-declarative) memory (Squire, 1994; Schacter, 1995). The first can be retrieved consciously and verbalized. It concerns specific events of one’s life and allows one to give meaning to the recollections of experiences. Thus, explicit memory allows, through remembering, a reconstruction of one’s personal history.

Neuropsychology has used imaging techniques such as PET (positron emission tomography) and MRI (magnetic resonance imaging) to study brain-injured patients, and has shown that explicit memory relies on the integrity of the medial temporal lobe (rhinal, perirhinal and parahippocampal cortex), the frontal–basal areas and the bilateral functionality of the hippocampus. The amygdala is mainly responsible for the emotional component in the process of information storage (see Gazzaniga, 1999; Mancia, 2000b, 2004, in press), and can modulate both the encoding and the storage of hippocampal-dependent memories (Phelps, 2004).

Implicit memory, by contrast, is not conscious and concerns data that can be neither remembered nor verbalized. It presides over the learning of various skills: a) priming, which is the ability of an individual to choose an object to which he has previously been exposed subliminally; b) procedural memory, which concerns cognitive and sensorimotor experiences such as motor skills learning, everyday activities, playing instruments or playing certain sports; c) emotive and affective memory, which concerns emotional experiences, as well as the phantasies and defences linked to the first relations of the child with the environment and in particular with the mother. It is likely that this memory also concerns the experiences of the foetus during the last period of gestation, when it is in close relation with the mother, her rhythms and, in particular, her voice. These stimuli constitute a pattern of continuity, rhythm and musicality around which the first representations of the infant from birth (or protorepresentations) are organized (Mancia, 1981). It is well known that the sensorimotor experiences of the foetus can be memorized (De Casper and Fifer, 1980). The voice of the mother can also be memorized (see Kolata, 1984), and when re-experienced in the first months of life, in particular during breastfeeding, it can influence the cardiac frequency and even the suction rate of the infant (Mehler et al., 1978).

The child, developing its symbolic system and language during its first two years of life, goes through very important affective and emotional experiences. It is very likely that these experiences are memorized. As for language, the infant is

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2Pally (1997) calls this dimension ‘emotional memory’. It presents some analogies with that described by Klein (1957) as ‘memory in feelings’.
particularly sensitive, at a very early stage of its development, to the prosody (intonation and rhythm) of the maternal language. After learning the prosodic structure of the mother tongue, the child is able, at about the sixth month of life, to represent its sequential intonations of vowels and consonants (Mehler and Christophe, 1995).

Some of the child’s primary experiences will be positive and essential for the physical and mental growth of the child. Others may be traumatic: neglect, parental inadequacy or possible mental illness, physical or psychological violence, child abuse, even of a sexual nature, as well as the constant frustrations and disillusionments that lead the child to organize its defences and boost its phantasies. All these experiences cannot be repressed because the hippocampus, necessary for the explicit memory, which is in turn indispensable for repression, is not mature in early infancy (R. Joseph, 1996; Siegel, 1999). On the contrary, the amygdala, which promotes the organization of the implicit memory, undergoes an earlier maturation (R. Joseph, 1996). Therefore, these early experiences, including those which concern the organization of language, can only be deposited in this latter form of memory and they contribute to the formation of an early unrepressed unconscious nucleus of the self (Mancia, 2003a, in press).

The structures and circuits of implicit memory have not yet been accurately defined by neuropsychological research. It does not rely upon the integrity of the temporal medial lobe or the hippocampus. The amygdala does seem to have an essential role in the processing of emotions (LeDoux, 2000; Damasio, 1999; Bennett and Hacker, 2005) and is thus involved in the organization of implicit memory. The basal ganglia are also involved in this kind of memory and the cerebellum seems to play a role in the experience of fear (Sacchetti et al., 2004). Indirect evidence suggests that implicit memory might have its site in the posterior temporal-occipital and parietal areas (angular gyrus and supramarginal gyrus areas, or Broadman areas 39 and 40) of the right hemisphere. The latter is considered the emotive hemisphere *par excellence* (Gainotti, 2001). It is the seat of implicit memory in relation to words (Gabrieli et al., 1995).

The discovery of implicit memory was made by Warrington and Weiskrantz (1974) who studied with *priming* experiments patients affected by Korsakov’s amnesia, in which the structures of explicit memory are damaged. Subsequently, the *procedural dimension* of implicit memory has been confirmed. As well as this, the *emotional and affective dimension* of implicit memory is of particular interest for psychoanalysis. It is linked to the earliest, most significant experiences of the infant with the mother and the surrounding environment.

A more recent contribution to the study of implicit memory comes from the experiments with a spatial organization computer game on amnesic patients (Stickgold et al., 2000). Damage to the bilateral temporal lobe and hippocampus had caused the loss of explicit memory. However, despite being unable to recall the game, these patients were able to dream of it at sleep onset. This observation is interesting as it shows that learning can be memorized without the contribution of explicit memory, which requires the activation of the hippocampus and of the temporal and basal cortex. In the cases observed by Stickgold et al., the explicit
memory was definitely impaired, but a non-explicit and non-conscious kind of memory was left and could emerge in dreams. This observation shows that an experience can be stored in the implicit memory and can be represented symbolically in dreams.

The contribution of molecular biology

After the pioneering experiments obtained with post-tetanic potentiation (Bliss and Lomo, 1973) and with long-term potentiation of the hippocampus, the molecular biologist Rose (1992) demonstrated a genetic memory located in chromosomal DNA. This kind of memory supports behaviour linked to the survival of the species. Furthermore, this author has demonstrated that learning is accompanied by protein synthesis facilitating the formation of new synapses and therefore of new circuits, allowing long-term assimilation of the information received. More recent are the experiments by Kandel et al. (1996) on Aplysia californica, and their subsequent extension to mammals (Kandel, 2001). This author stimulated in Aplysia a simple reflex in the gill and syphon, inducing two opposite forms of learning that the animal could memorize: habituation and sensitization. He demonstrated that storage of information happens at synaptic level through stimulation of gene expression and protein synthesis. This process permanently modifies synaptic transmission, acting at the level of the ionic channels of the presynaptic membrane, decreasing the passage of divalent calcium (Ca\(^{2+}\)) ions, progressively reducing the synaptic transmission, and thus inducing habituation. Alternatively, it can increase the passage of Ca\(^{2+}\) ions, thus facilitating in a stable way the synaptic transmission and so inducing sensitization. An important transmitter such as dopamine facilitates in mammals the fixation of the protein expressed by genes on the specific synapses which preside over the memory of some given experiences (Kandel, 2003). It is worth noting that dopamine is also an active transmitter at the level of the accumbens nucleus (Ikemoto and Panksepp, 1999) thus having a role in the system which presides over pleasure and sexuality (Gessa and Tagliamonte, 1974). This system can therefore create a condition of ‘synaptic plasticity’ as the organizational basis of long-term memory (implicit and explicit).

These observations enabled Kandel (1999) to make links between the molecular biology of memory and psychology and to put forward some extremely interesting hypotheses. I list them briefly:

a) all mental processes, normal or pathological, derive from operations of the brain;
b) genes and protein expression determine the pattern of interconnection of neuronal synapses, therefore a component of mental function (both normal and pathological) is linked to genes;
c) relational and social factors can exert an action on the brain, modifying permanently the function of the genes, which is to say their protein expression as concerns the synapses, and therefore the neuronal circuits—it follows that ‘culture’ can express itself as ‘nature’;
d) psychical anomalies induced by traumatic relational and social situations can occur through modification of gene expression and protein synthesis;
e) psychotherapy (and *a fortiori* psychoanalysis) can bring about long-term changes of behaviour and of various functions of the mind, exerting an action on the gene expression of proteins which modify the structure and potency on neuronal synapses (and thus of the specific circuits controlling specific areas of the brain). The transformations induced by psychoanalytic therapy would be due to the effect of the cure on the plasticity of the central nervous system.

**Memory and unconscious**

Memory and the unconscious are inseparable; therefore, the unconscious function of the mind can be identified with the memory functions. Freud considered the unconscious to be the expression of an active process of repression, beginning in early infancy (*primal repression*) and carrying on through life (*as repression proper*) (Freud, 1915a, 1915b). It is obvious that this concept of repression is intimately linked to the instinctual model of the mind and to the storage of experience in the explicit memory. The result of this operation is, according to Freud, the formation of a *dynamic unconscious* which influences conscious life and manifests itself in various ways: through free associations, slips of the tongue, dreams, everyday life psychopathology.

However, it was precisely in those years when he was working on his theory of dreams, that Freud became interested in the way the experiences of early years are forgotten. He was almost intuiting the concept of implicit memory, but in effect he introduced a different one: the concept of ‘screen memory’, understood as the result of the repression of some events or of their displacement into contiguous ones. According to Freud (1899), screen memories are purposeful falsifications of the memory, acting to repress and replace disturbing experiences, a role not dissimilar to the manifest content of a dream in relation to the latent.

As the focus of his theory was the Oedipus complex, Freud overlooked the importance of the earliest pre-oedipal, preverbal and presymbolic experiences. The latter are stored in the implicit memory and are not, therefore, susceptible to being repressed. This is why in ‘Remembering, repeating and working through’, Freud refers to the explicit memory which can be recovered through the free associations of the analysand, even though he writes: ‘There is one special class of experiences of the utmost importance for which no memory can as a rule be recovered … One gains a knowledge of them through dreams …’ (1914, p. 149). This was a wonderful intuition which Freud could not develop as he could not know the existence of the implicit memory. Indeed, he (wrongly) considered this kind of memory as another expression of primal repression.

Freud returns to the issue of memory in ‘A note on the “mystic writing-pad”’ (1925), in which he emphasizes the analogies between the mystic pad and our memory. This is because our psychical apparatus is able to offer us both functions of the pad, dividing itself between the two different systems that he mentions in ‘Project for a scientific psychology’ (1895): the systems φ and ψ. Later, in *Civilization and its discontents* (1929), Freud returns to the subject of memory with a historic–archaeological metaphor, stating that what has been experienced cannot be erased. Analytical work orients towards a past that emerges in the present
through transference. The latter allows the re-experience in the present of emotional situations belonging to the past. To be precise, Freud refers to the past as ‘surviving’ in the present. This means that a given experience is present but not necessarily remembered. It can survive in the recollection and in the non-recollection. This is an important point for the hypothesis of the unrepressed unconscious that I am proposing here, in so far as it cannot be accessed through recollection.

The archaeological metaphor, with which Freud (1937) compared the analyst’s work to that of the archaeologist who brings to light all that time has buried, seems now incomplete and in need of modification. The analyst is a historian at the same time. He is a historian sui generis who has to trust hidden documents that he will never be able to consult directly, but can retrieve indirectly through attention to particular details. In order to achieve this, the analyst/historian, as well as relying on the patient’s verbal material (Ferro, 2002), must concentrate his attention on the modalities of his communication such as intonation, rhythms and tempi of speech, in particular on the musicality of the voice, and on the most obviously ‘reconstructive’ dimension of dreams. All this will allow the emergence, besides recollection, of emotions that concern the most archaic and meaningful relational experiences, and that belong to unrepressed unconscious material.

Ricoeur’s philosophical reflection on time and memory (1998) is helpful in suggesting the analyst be considered as an historian whose work enables the patient to acquire a historical consciousness of his unconscious. Following on from the work of Koselleck (1985), Ricoeur suggests that historical consciousness can be the result of the dialectic between two poles: the ‘space of experience’ formed by the entire heritage of the past, and the ‘horizon of expectations’, constituted by the projects and the anticipations projected into the future. Historical consciousness concerning the unconscious can therefore be regarded, in analysis, as the expression of a dialectic taking place in the present, in the here and now of the relationship, between the most archaic past, starting from the earliest preverbal and presymbolic experiences which are unconscious and unrepressed, and the project of the future intended as the result of a transformation taking place during analysis.

I describe here the unrepressed unconscious as having its foundations in the sensory experiences the infant has with his mother (including hearing her voice, which recalls for the infant prosodic experiences in the womb). It is through these sensory experiences that the mother sends to the infant messages of affectivity, emotionality, reliability, happiness and dedication. But she can also send messages that the infant can experience as traumatic, terrifying, threatening, non-reassuring or strongly frustrating. The latter will disrupt the attachment patterns of the child (Bowlby, 1969) and his reflective capacity (Fonagy and Target, 1997), threatening seriously the organization of its self (Stern, 1985). These traumas will cause what Money-Kyrle (1978) calls ‘unconscious misconceptions’. They cannot be repressed because the structures which concern the explicit memory, indispensable for repression, are lacking (R. Joseph, 1996; Siegel, 1999). They will organize, instead, an early unrepressed unconscious nucleus of the self (Mancia 2003a, 2003b, in press).

The concept of unrepressed unconscious that I propose differs greatly from the one described by Freud (1923), in which a part of the ego is unconscious, as it
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derives from the id through the action on it of the $P_{cept-Cs}$ (perception–consciousness) system. It also differs from the ‘past unconscious’ proposed by Sandler and Sandler (1987) which is considered as the result of repression. In my elaboration, it is the result of the storage in the implicit memory of experiences, phantasies and defences which belong to the presymbolic and preverbal stage of development and cannot therefore be remembered. Nevertheless, they can condition the affective, emotional, cognitive and sexual life even of the adult. This unrepressed unconscious can reveal itself in the transference and in dreams, as I will show later.

Modern discoveries in neuropsychology concerning the organization of memory now allow us to hypothesize that some synaptical cortical and subcortical circuits form the seat of unconscious mental functions. The possibility of identifying, in the explicit and implicit memory respectively, the repressed and unrepressed unconscious opens new and stimulating perspectives for an integration of neuroscience with psychoanalysis, and for a possible anatomic localization of the functions of these two different forms of unconscious. This depends on a presupposition: that the experiences, emotions, phantasies, and defences which each contribute to the organization of an individual’s unconscious psychic reality, from birth throughout life, are stored in the nervous structures concerning memory, both implicit and explicit. This is, after all, in line with Freud’s conviction: ‘latent conceptions, if we have any reason to suppose that they exist in the mind—as we had in the case of memory—let them be denoted by the term “unconscious”’ (1912, p. 260).

On these grounds, it is possible to suggest that the repressed unconscious finds its own location in the structures of explicit, or autobiographic, memory. Supporting this hypothesis is the recent observation by Anderson et al. (2004) who demonstrated that the deliberate forgetting of mental experiences, which they compare to Freudian repression, is accompanied by an increase of activity in the dorsolateral prefrontal areas and a parallel reduction of the hippocampus activity. This phenomenon is opposed to the ‘derepressive’ character of dreams [in rapid eye movement (REM) sleep], during which an increase of hippocampal activity and a deactivation of the dorsolateral prefrontal cortex (Braun et al., 1998) have been observed. By contrast, the unrepressed unconscious may find in the implicit memory its own organization, promoted by the activation of the amygdala which presides over the emotions (Damasio, 1999; LeDoux, 2000; Bennett and Hacker, 2005). It seems to be located in the posterior associative cortical areas (temporal–occipital–parietal) of the right hemisphere, as well as in the basal ganglia and in the cerebellum. In favour of this hypothesis are the following experimental and clinical tests: implicit experiences have an emotional component which engage the amygdala and for some emotions (such as fear) the cerebellum also (Sacchetti et al., 2004); the right hemisphere, through its temporal–occipital–parietal areas, is considered the hemisphere of emotions (Gainotti, 2001). It is also the seat of implicit memory, in particular...

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3One objection can be made to Anderson et al. (2004), namely, that Freudian repression would be unconscious, while suppression is conscious. However, the authors themselves suggest that, according to Freud, repression could be both conscious and unconscious. The limitation of repression to the unconscious was essentially due to Anna Freud (Erdelyi, 2001).
of the information related to speech (Gabrieli et al., 1995); the above areas of this hemisphere are more active during REM sleep (and therefore in the dream), when compared to the corresponding areas of the left hemisphere (Antrobus, 1983; Bertini and Violani, 1984). They correspond to the angular and supramarginal gyri (Brodmann areas 39 and 40) in which the maximum of sensory integration (somatic, auditory and visual) is observed. These areas are engaged in the most sophisticated processes concerning symbolic, gnostic and praxic functions (Critchley, 1953; Geschwind, 1965a, 1965b; Bisiach et al., 1977; Hyvärinen, 1982). Furthermore, in patients with a section of the corpus callosum, they regulate the geometrical–spatial functions and those related to art and music (Sperry, 1974). Even a partial injury of these areas can abolish dream activity (Solms, 1995; Bischof and Bassetti, 2004).

**Therapeutic functions and work on memory**

I come now to the core of my reflections on what makes our memory work with patients therapeutic.

According to Freud, the therapeutic effect of psychoanalysis is essentially linked to a reconstructive process which happens through working on the autobiographical memory. The very concept of working through (Freud, 1914) has been considered as the expression of the process of working on and recovering repressed experiences stored in the explicit memory (a process that we may call derepression), and overcoming the opposing resistances (Gill, 1983). This aspect of the therapeutic function of psychoanalysis, already criticized by some epistemologists (Grübaum, 1993), has been the object of a profound revision by current psychoanalysis. Strachey (1934), already, had talked of the analyst as a ‘new object’, whom patients need to introject into their superego to modify its severity and harshness. Later, various authors tried to capture the therapeutic effect of psychoanalysis as something different from mere recovery of repressed infantile memories (Winnicott, 1956; Fonagy, 1999). For instance, Loewald (1960) argued that the analyst should make himself available for the development of a new ‘object relation’ with the patient. Klein (1932) emphasized the idea that the therapeutic action is, above all, linked to the recovery of parts of the self projectively identified in the object, and to the retrospective discovery, in the transference, of the infantile experiences which made possible the projective identification (Steiner, 1989). Bion (1991) considered that one of the aims of psychoanalysis is that of offering to the patient the opportunity to develop his own α-function of the mind, so as to confer a new order to the β-elements reaching it.

More recently, Gabbard and Westen (2003) drew attention to three main themes concerning the therapeutic action of psychoanalysis: a) the reduced importance of interpretation compared to the relationship as such and the acknowledgement of a multiplicity of modes for a therapeutic action of psychoanalysis; b) a shift of the emphasis from reconstruction to construction in the here and now of the session; and c) the importance of negotiation of the therapeutic atmosphere created between analyst and patient. For these authors, the insight reached through interpretation

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4For a discussion on constructions and reconstructions in the analytic process, see Mancia (1993) and Blum (1994).
and the transformations which can be obtained through the relational experience work in synergy.

In fact, the emphasis on reconstruction has in recent years considerably decreased, in favour of the interaction in the here and now of the session, allowing the patient to gain an insight into the influences of the past on his present conflicts and object relations (Arlow, 1987; Gabbard, 1997). My point of view, now, is that of re-evaluating reconstruction, but from a new epistemological stance. This concerns a standpoint of observation and interpretation which focuses on the phantasies, representations and defences stored in the implicit memory of the patient and is therefore reconstructive. However, the material observed comes from the work in the here and now of the session. The latter is essentially constructive, as it focuses on the relationship, on the transference and countertransference, as well as on the analysis of dreams. Particularly important, in this kind of work, are the experiences inherent to the analytic relationship which emerge in the session; they reactivate those emotions which are not remembered but belong to the unrepressed unconscious of the past. The kind of reconstruction to which I am referring has many analogies with the concept elaborated by Blum (1994), who considered reconstructive activities to be complementary to transference interpretations, and a necessary process for the understanding and resolution of the transference.

The transference is to be grasped in its total dimension (B. Joseph, 1985), and therefore in its narrative elements, but also, and above all, through the extra- and infraverbal elements. By extraveral I mean the patients’ behaviour in the analytic setting, the expression of their faces, their posture, their movements, which are related to the unrepressed unconscious and to the procedural dimension of the implicit memory (Clyman, 1991), and even their clothes and general way of relating to the analyst. The infraverbal elements belong to the signifier concept of the signified/signifier semantic dyad (de Saussure, 1960). It concerns those modes of communication of the patient in which the voice has fundamental importance. In the analytic encounter, in which speech acquires a very important role, the voice is the vehicle by which words create sounds and convey affects. From this perspective, the voice is an ‘experience’ of one’s self actualized in the act of speech (Ogden, 2001), but is at the same time an experience of the self in relation to the other. The voice constitutes a ‘transference current’ which recalls a sensory dimension associated with the maternal voice (Godfrind, 1993). These elements of communication include the rhythm, tone, timbre and musicality of a sentence, as well as the syntax and tempi of speech. All this constitutes, in the analytic encounter, the ‘musical dimension’ of the transference (Mancia, 2003a, 2003b, 2003c). This dimension has also been described by Knoblauch (2000) as the ‘musical edge of therapeutic dialogue’, in the sense of a ‘shared musical performance’ of the analytic couple. According to this author, this dimension has analogies with what happens with jazz.

The musical dimension of the analytical encounter refers to a conception of music as a language sui generis, whose symbolic structure is isomorphic with that of our emotional and affective world (Langer, 1942; Ognibene, 1999; Di Benedetto, 2000). This dimension facilitates the transferenceal metaphor, beyond the content of narrative (Ferro, 2002), of affective, emotional and cognitive (traumatic) experiences which
have shaped the implicit model of the patient’s mind. Such a process is rooted in language, in particular in the emotional tone of the maternal voice which the child acquires before the semantic meaning that it conveys. It gives to the mother’s speech a privileged access to feelings (Amati Mehler et al., 1993). The maternal voice can be considered as a metaphorical area of exchange in which very primitive processes of projection and introjection take place. Therefore, in the analytic relationship, the analysand and the analyst use their voices to communicate their affects and to facilitate or prevent their own reciprocal affective investment (Rizzuto et al., quoted in Etchegoyen, 2004). The semantic element in the analysand’s (and in the therapist’s) speech is profoundly influenced by its emotional significance which belongs to the patient’s early unconscious history and is based on the prosody of the speech learned before the development of language. Such a prosodic and musical dimension can only belong to the unpressed unconscious, in as much as it is linked to the most primitive emotional experiences. It can be easily split and projectively identified in the analyst and is capable, therefore, of piercing his countertransferential skin more than any other semantic content of the narrative. It is the task of the analyst, the sensitive listener, to capture in the here and now of the session, the unpressed, unconscious meaning of this specific transferential modality (and in particular the most archaic quality of those affects which are split and projectively identified). The analyst must then put it into words, thus giving it a symbolic meaning and linking it to the past.

It is to this aspect of the countertransference that Pally (1997) refers when she states that analysts’ reverie, their empathic resonance and sensitiveness to patients’ non-verbal communications, are precious instruments for reaching the experiences encoded in the implicit memory of the patient. Similarly, Fonagy (1999), quoting B. Joseph (1981), underlines how the primitive emotions of the patient are revealed through the feelings that they are able to evoke in the analyst. More recently, Cimino and Correale (2005) have referred to implicit emotions of the patient’s mind being projectively identified in the analyst. However in the above works the link between the experiences stored in the implicit memory and the unpressed unconscious of the patient is not always obvious.

In this context, I stress the importance of recent neuropsychological observations, showing that the areas presiding over pain (anterior part of the cingulate and of the insula) are activated also in an affectively concerned person witnessing a suffering subject, following an extraverbal (Singer et al., 2004) or even verbal (Osaka et al., 2004) communication from the latter. Even smell stimuli that induce disgust in a subject activate in an observer the same structures (inferior part of the insula and to a lesser extent of the cingulate, Wicker et al., 2003). At the neuronal level, investigations of the so-called ‘mirror neurons’ (Gallese, 2001, 2003) also provided evidence of an exchange of feelings and sensations among individuals, forming the physiological basis of a process which could be defined as having a projective identification nature. These possible neurological modifications of functions in individuals communicating with each other constitute an area of integration of neuroscience with psychoanalysis. The therapist’s countertransference is based on these same principles.

The repetitive and implicit processes of communication which I have described may have some analogies with those modifications in affective and interactive
IMPLICIT MEMORY AND EARLY UNREPRESSED UNCONSCIOUS connections which Lyons-Ruth et al. (1998) call implicit relational knowing. They concern the structure of the patient’s mind and can emerge in those particular ‘encounter moments’, described by the Process of Change Study Group (PCSG) (1998) as playing a key role in the reorganization of affective implicit experiences. However, it is my impression that the implicit models described by these authors do not feature the same unrepressed unconscious characteristics of those experiences, defences and phantasies that I describe in this paper. It is possible that ‘implicit relational knowing’ is part of the unrepressed unconscious related to the implicit memory that I discuss here. However, on a more purely clinical level, the PCSG group considers as therapeutic in itself any moment of encounter which highlights the implicit knowing; whereas I think that the unrepressed unconscious of infancy needs an interpretation or a possibility of representation (particularly as it concerns work on dreams), if it is to be reconstructive and therapeutically useful.

Grasping in the transference these complex modalities is one of the best ways of reaching the most archaic aspects of a patient’s unconscious, so obtaining a ‘reconstruction’ of their past. It will be, however, a reconstruction sui generis, as the experiences stored in this kind of memory cannot in fact be ‘remembered’. They can only be re-experienced emotionally and enacted in the intersubjective relationship. They may also be represented in the dream, the theatre par excellence of the implicit (as well as explicit) memory, whose curtains open on the transference (Mancia, 2000a, 2003a).

The dream can be the privileged representation giving insight into the phantasies, affects and defences that emerge in the transference, as well as into the reconstructive elements, related to the preverbal and presymbolic experiences that characterize the implicit structures of the patient. The function of the dream is indeed that of creating images able to fill the void of non-representation, representing symbolically experiences that were originally presymbolic. Their interpretation will facilitate the reconstructive process that is necessary for the psyche to improve its abilities to mentalize experiences which could, originally, neither be represented nor thought about. Although still not remembered, these experiences will be rendered thinkable.

Following from these reflections, the defining element of the therapeutic action of current psychoanalysis appears to be that of transforming symbolically and putting into words the early implicit structures of the patient’s mind. This is where highly emotional experiences, rooted in the affective sphere of the primary relationships, are stored. They are condensed in language and in the prosodic tone of the preverbal stage, rather than in the autobiographic memories of later stages. If the implicit structures of patients’ minds and the unconscious modes with which they function are made thinkable, patients will be able to represent the non-representable material of their unrepressed unconscious and to recover those parts of the self which have either been denied or split and projected in the early development of their minds.

This is not to say that work on explicit memory has no role in the reconstructive and therapeutic process of analysis. An excessive use of autobiographic memories in the here and now of the session can, of course, be a defence against the more painful experiences of the patient, and therefore a resistance to analysis. However, it is necessary to recognize that the narrations of the patient and the recollection of
facts stored in the explicit memory have a role in the constructive and reconstructive process. They therefore play their part in the transformations observed in analysis (Ferro, 2004). Nevertheless, this must not distract us away from paying constant attention to what the patient neither tells nor remembers, but which is ‘enacted’ or communicated in the session in infraverbal forms. These communications are extremely significant from the point of view of the transference and countertransference. Lacan (1966) points this out when he writes that the essential property of analytic speech is to communicate what it does not say.

In summary, both implicit and explicit memory experiences can be present in the transference, influencing each other just as they do in the normal development of the infantile mind (Siegel, 1999). If the work on implicit memory can facilitate the emergence of phantasies and memories stored in the explicit memory, so the work of reconstruction, which relies on the autobiographic memory, can facilitate the emergence in the transference and in the dreams of the most archaic experiences, with their relevant phantasies and defences, stored in the implicit memory of the patient. This corresponds to Davis’s (2001) description of declarative and non-declarative processes in the psychoanalytic perspective.

Last, but not least, I come to the negotiation of the therapeutic climate between analyst and patient, which forms the basis of the therapeutic alliance (Greenson, 1967; Zetzel, 1970). This relational element can play a key role in establishing a situation emotionally conducive to the encounter and to the emergence of repressed and unrepressed material in the course of the analytic process. Moments of tension, rage and resentment on the part of the patient (and sometimes also of the analyst) can jeopardize the way in which the couple’s affective climate is negotiated. The analyst must be able to understand the feelings that at any given time obstruct a good negotiation. Practitioners will need to find out which parts of the patients are active and dominating in that particular transferential moment, as well as the nature of their countertransference. They must be able to decide, often with rapidity, which part of the patient needs gratification and which needs frustration. Analysts will then have to verbalize to patients the reasons for their dissent and why they have been drawn to emphasize one part of patients’ personality as opposed to another one active at the same time. Dreams can be of great help, both for choosing the appropriate interpretative intervention and for letting patients understand what is being represented in the theatre of their minds, so justifying patients’ emotions and analysts’ choices. All this is in the belief that at moments when the negative transference risks compromising the possibility of letting the libidinal part of the patient prevail or even putting at risk the analytic relationship itself, the correct understanding and interpretation can often be of valuable help. They can contain and transform the negative transference itself and promote progress in the therapeutic process.

A clinical case

To illustrate clinically what I have discussed, I present a segment of an analysis with one of my patients. This 40 year-old lady, whom I will call Luisa, the fourth of five children, requested analysis because of profound death anxieties, brought on by the diagnosis of breast cancer. After surgical intervention, this patient started a
four-times-per-week analysis. During analysis she undertook several treatments of chemotherapy. A fundamental characteristic which emerged immediately in Luisa’s transference was the prosody of her language and her way of communicating in the sessions: her speech was slow, fragmented, interrupted by long intervals, and delivered with a very low voice, producing an atmosphere of expectation as to the content of her narrative. The slowness, the monotony and the sense of distance that her speech evoked induced in me uneasiness, anxiety and feelings of boredom. Her voice and her way of talking conveyed a continuous and desperate lament whose elaboration seemed impossible. Session after session, the (justified) worry about her physical health would conceal rage and resentment towards a destiny selecting her to represent suffering and the fear of separating from the world. However, the destiny was, in her unconscious, her mother and, in the transference, myself. She would project into me the rage and resentment for having had an inadequate, unjust and insensitive mother, unable to understand the miserable, ill and angry child that she had been. These feelings, conveyed in the transference by her voice and her words, and projectively identified into myself, would make me feel distant and incapable of either understanding or helping her. This was a repetition of a frustrating relationship with her mother, who preferred her other children and neglected her needs and desires.

Outside the transference, the patient’s rage and resentment were enacted in the relation with her husband, who was accused of not doing enough for her, of not having any interests, of being boring, and of expecting from her a sexual proficiency that she was unable to offer. Husband and analyst were of course the objects in which she would put, through projective identification, the rage, the dissatisfaction and the resentment of her infantile part related to a mother perceived as absent, boring and incapable of taking care of her. The interpretative work on this aspect of the transference revealed by the prosody of her language, had allowed the patient to grasp some of the most emotional aspects of her (unrepressed) unconscious, those which concerned her early relationship with a depressed, distant, frustrating and inadequate mother.

The patient’s father never entered in the analytic relationship, except as the expression of an indifferent and absent internal object unable to help his daughter undo her identification with the mother and to promote a positive identification with him. This explained the patient’s total lack of interest in sexuality and consequently the difficulty in accepting a satisfactory sexual relation with her husband.

Correlating the work on transference, significant dreams emerged which helped to draw some reconstructive hypotheses concerning the patient’s earliest stages. The work on these dreams allowed the patient to re-experience emotionally in the sessions traumatic experiences that she had never thought about or remembered, and to rewrite the story of her early affective relation with her mother. In one of these dreams, the patient is talking while lying in bed and I am behind some curtains. When the curtains are drawn, I am not there. Having listened to this dream, I wondered whether my absence was temporary or whether I had always been absent with this patient, just as her mother had been distant and uninterested in her. On a countertransference level I experienced Luisa as a complaining, boring patient, who often conveyed, through her voice and words, rage, resentment and hatred. Sometimes, during the session, I had a fleeting fantasy to leave the consulting room, in order to alleviate the heaviness of
the encounter. I was almost overwhelmed by those feelings of uneasiness that Luisa would force into me through an intense projective identification. On the basis of these feelings, I was able to offer her a ‘constructive’ interpretation. It was linked to the here and now of the session and aimed at making her aware of the affects that she conveyed with her voice, her speech and her way of being in the session. At the same time, however, I would feel as if I was the symbolic representative of an always absent mother, without reverie, unaffectionate, depressed and distant. This led me to suggest to the patient a ‘reconstructive’ hypothesis, offering the image of a little girl left alone with her rage, resentment and hatred arising from not being looked after and nourished adequately by a mother always too busy with the other numerous siblings. I also mentioned that, as a baby, she had not felt physically contained and reassured through the sensory contact of skin against skin.

Luisa remained silent and the following day she brought this dream: ‘I am with my husband at the computer and on the keyboard there is a thick layer of carpet which prevents me from feeling the keys. I am trying to reduce the thickness of the carpet, but it is still impossible for me to feel the keys’. In a lamenting tone, Luisa spoke again of the difficulties with her husband, but also of the great worry that I may get tired of her grievances and abandon her. I linked this dream to a ‘sensory’ phantasy: that of not experiencing the analyst–mother as emotionally close. The lack of perception of a physical skin contact made her feel uncontained, and fearful of being left alone with her despair. Luisa told me of a painful separation that she had to accept from a close friend who abandoned her. Then, after a silence, she said, ‘I had a catastrophic phantasy. I wondered how far you are prepared to stay close to me, should things go wrong’. (She was obviously referring to her tumour.)

The fear of being abandoned and of dying activated in Luisa very regressive defences. She told me, during that period, a dream in which she feels transformed into a vegetal, pre-human being, with tree branches on her head instead of hair. Chemotherapy had, in reality, made all her hair fall out and the presence of the tumour had accentuated her death anxieties and the phantasies of disappearing as a human being. Although acknowledging this reality, I interpreted the dreams as symbolizing very archaic experiences, still anchored in her memory without an actual recollection, and representing a transformation of her self into a cold and insensitive vegetal being, with tree branches on her head, similar to emotions without thoughts. I added that this transformation could be a defence against an unthinkable pain, produced by a mother without reverie, cold and of a vegetal, pre-human nature. This dream and the work on it created between us a very moving encounter that increased the insight of the patient and reduced significantly her anxiety.

Shortly before an analytic separation, Luisa described another dream: there is a tree representing the face of a lamenting person. The words are not intelligible, but the tone of the voice and the atmosphere created by that face evoke suffering. Luisa complained of living with a depressed and boring husband. She added that before analysis she had never realized how many feelings his way of talking can convey. She complained again about her fate, the illness which might kill her, the void she felt inside her, the uselessness of our work since she feared her life might be extinguished. I commented that not only the illness, but also the approach of our separation, made
her feel like a miserable child, alone, without a mother–analyst within her able to contain her despair and neutralize her fear of dying. She interrupted by saying, ‘It is true. You have just described my mother. I cannot remember it, but your words have just formed for me the image of an inadequate, unsatisfied, depressed and complaining mother, who has had, just like her own mother, a hard life’.

During that period, her 90 year-old mother died. In the session following the day of the death, she said with a clear voice and an aggressive tone, ‘I am ashamed to say that I do not feel any pain for the death of my mother. There is in me hate which I cannot control, a bad part of me which invades and neutralizes my good part’. I ventured the possibility that the little girl that now hates her mother was the victim, a long time ago, of painful and traumatic experiences which fuelled in her a resentful, bad part; this was her response to a mother who did not contain her and did not understand her needs. She interrupted me by saying, ‘As far as I remember, my mother’s body repelled me. It was repugnant. It used to emit disgusting sounds and I was ashamed for her. I was disgusted just by the touch of her skin. I remember that my little sister developed a very serious erythema in the genitalia. In fact, my mother would often say that newborns repelled her’. I was able, at this point, to link for her these phantasies to the image of her as a baby who does not feel contained by her mother, whose skin induces disgust in her. This baby had to cohabit with a maternal body full of vulgar noises that created in her a resentful, bad part who hates the mother and is happy at her death.

This session produced for the patient a profound insight and allowed her, through the work on the dreams and on the transference, to think about and verbalize frequent and extremely traumatic experiences, which were in origin unthinkable. This happened without the actual recollection of these experiences, by virtue only of their emotional recovery in the session.

In conclusion, and in order to link this clinical experience to the theory which I propose in this paper, I wish to emphasize how the interpretations offered to the patient, concerning her voice and the prosody of her language, together with the images of the dreams, reproduced in the adult part of her the emotional essence of her infantile experience. The emphasis on these elements allowed the patient to re-experience emotionally the earliest traumatic experiences in the relationship with her mother, which she could not remember. She was, by then, able to integrate the different moments of her affective development with the unconscious significance of the experiences verbalized in the present of the transference. The therapeutic aspect of this process was its bridging function, which allowed the patient to put into narrative the unconscious traumatic experiences of the past. She was then able to think of, verbalize and transform such experiences, conferring on them a new meaning.

**Translations of summary**

**Implizites Gedächtnis und frühes nicht verdrängtes Unbewusstes: ihre Rolle im therapeutischen Prozess (Wie die Neurowissenschaften die Psychoanalyse bereichern können).** Dieser Beitrag diskutiert das Gedächtnis unter dem Blickwinkel der Neurowissenschaften und der Molekularbiologie und zeigt eine Integration mit der psychoanalytischen Theorie des Unbewussten auf. Die Entdeckung des impliziten Gedächtnisses hat das Konzept des Unbewussten erweitert und stützt die Hypothese, dass in diesem Gedächtnissystem die emotionalen und affektiven — mitunter traumatischen — präsymbolischen
La memoria implícita y el inconsciente temprano no reprimido: su papel en el proceso terapéutico
(Cómo las neurociencias pueden contribuir al psicoanálisis). Este trabajo examina la memoria desde el punto de vista de las neurociencias y la biología molecular, y propone una integración con la teoría psicoanalítica del inconsciente. El descubrimiento de la memoria implícita ha ampliado el concepto de inconsciente y sostiene la hipótesis de que las experiencias emocionales y afectivas –incluidas las traumáticas– presimbólicas y preverbales de las relaciones primarias madre-niño se depositan en esta forma de memoria. Ellas formarían la estructura base de un núcleo inconsciente temprano no reprimido del self. La identificación del inconsciente con la memoria permite establecer una hipótesis sobre su organización anatómica y funcional. El inconsciente no reprimido puede ser recuperado en el análisis mediante la “dimensión musical” de la transferencia, caracterizada por la voz (tono y ritmo) y la prosodia del lenguaje que se relaciona con la lengua materna como acceso privilegiado a los efectos de la transferencia. Los sueños pueden transformar simbólicamente experiencias presimbólicas y preverbales, de manera que puedan ser verbalizadas y pensadas aun sin ser recordadas. Los sueños también pueden crear representaciones pictográficas capaces de cubrir el vacío de la no representación que caracteriza el inconsciente no reprimido. La descripción de un fragmento de análisis de una paciente que sufre angustia de muerte aporta una ilustración clínica de las teorías discutidas en el trabajo. La interpretación de su voz y de la prosodia de su lenguaje, aparte de la elaboración de los sueños, reproduce la esencia emocional de las experiencias traumáticas infantiles de la paciente. Esta reconstrucción le permitió hablar y pensar sobre ellas a pesar de no producirse un recuerdo real.

Mémoire implicite et inconscient précoce non refoulé : leur rôle dans le processus thérapeutique (comment les neurosciences contribuent à la psychanalyse). L’article examine la mémoire du point de vue des neurosciences et de la biologie moléculaire, et propose une intégration avec la théorie psychanalytique de l’inconscient. La découverte de la mémoire implicite a étendu le concept de l’inconscient et soutient l’hypothèse, selon laquelle celui-ci est le lieu où sont emmagasinées les expériences présimboliques et préverbales, émotionnelles et affectives – parfois traumatiques – des relations primaires mère–enfant. Ces expériences pourraient constituer la structure de base d’un noyau inconscient du self, précoce et non refoulé. L’identification de l’inconscient à la mémoire conduit à une théorie de son organisation morphologique et fonctionnelle. L’inconscient non refoulé peut être ramené à la surface, au cours de l’analyse, à travers la dimension « musicale » du transfert, qui se caractérise par la voix (son intonation, son rythme) et par la prosodie du langage. Les rêves peuvent transformer symboliquement les expériences présimboliques et préverbales, tant et si bien que celles-ci peuvent être mises en mots et en pensées, même sans être remémorées. Les rêves peuvent également créer des images complémentant la lacune de l’absence de représentation qui caractérise l’inconscient non refoulé. La description d’un fragment d’analyse d’une patiente souffrant d’angoisse de mort procure une illustration clinique des théories discutées. L’interprétation de sa voix et de la prosodie de son langage, parallèlement au travail sur les rêves, a reproduit l’essence émotionnelle des expériences traumatiques de l’enfance de l’analysante. Cette reconstruction lui a permis d’en parler et de les penser sans la remémoration dans le présent.

Memoria implicita e inconscio precoce non rimosso: Loro ruolo nel processo terapeutico (Un contributo delle neuroscienze alla psicoanalisi). In questo lavoro la memoria è affrontata dal punto di vista delle neuroscienze e della biologia molecolare ed integrata con la teoria psicoanalitica dell’inconscio. La scoperta della memoria implicita ha esteso il concetto di inconscio e favorito l’ipotesi che le esperienze.
emozionali e affettive (anche traumatiche), presimboliche e preverbali, delle relazioni primarie madre-bambino siano depositate in questa forma di memoria. Esse possono costituire la struttura fondante di un nucleo incons conscious precoce del Sé non rimosso. L'identificazione dell'inconscio con la memoria permette una ipotesi sulla sua organizzazione anatomo-funzionale. L'inconscio non rimosso può essere recuperato attraverso la “dimensione musicale” del transfert caratterizzata dalla voce (tono e ritmo) e dalla prosodia del linguaggio che si collega alla lingua materna come accesso privilegiato agli affetti del transfert. I sogni possono trasformare simbolicamente esperienze presimboliche e preverbali rendendole verbalizzabili e pensabili anche senza il ricordo. I sogni inoltre creano rappresentazioni pittografiche capaci di colmare il vuoto della non rappresentazione che caratterizza l’inconscio non rimosso. La descrizione di una “tranche” di analisi di una paziente con angosce di morte illustra clinicamente le ipotesi teoriche discusse nel lavoro. L'interpretazione della sua voce e della prosodia del linguaggio, oltre al lavoro sui sogni, ha riprodotto nella paziente l’essenza emotionale delle esperienze traumatiche della sua infanzia. Tale ricostruzione ha permesso una loro verbalizzazione e pensabilità anche senza il ricordo.

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