
Limbic Psychotherapy®: An Innovative Model for Treating Simple and Complex Somatoform Dissociative States

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To cite this article:

Bernard Mayer. Limbic Psychotherapy®: An Innovative Model for Treating Simple and Complex Somatoform Dissociative States. *American Journal of Applied Psychology*. Vol. 12, No. 4, 2023, pp. 88-95. doi: 10.11648/j.ajap.20231204.12

Received: July 11, 2023; **Accepted:** August 8, 2023; **Published:** August 15, 2023

Abstract: Limbic Psychotherapy® is a novel approach that aims to treat both simple and complex dissociative states, as well as a diverse range of psychoform and somatoform disorders associated with stress, chronic pain, or attachment troubles. This innovative method is based on a fusion of pioneering research by Pierre Janet in psychotraumatology, updated by Van der Hart and colleagues, along with crucial neurophysiological findings ranging from Sherrington to Porges. In particular, the notions of dissociated parts of the personality (PAN and PE) from the Structural Dissociation (DSP) conceptual framework will be mobilized combined with the notion of Functional Dissociation® already presented elsewhere. Drawing from our extensive experience and the integrative mind-body approach (TICE®), Limbic Psychotherapy® addresses neurophysiological imbalances frequently observed in acute or chronic stress states directly, without relying on intermediaries, suggestions or predefined protocols: in fact, the therapy functions by targeting bodily information to reintegrate dissociated parts of the personality into a unified ego, following structural or functional dissociation. By acting directly at the level of traumatic neurophysiology, Limbic Psychotherapy® makes explicit what was implicit for the patient. By activating the patient at the limit of his or her window of tolerance, it is possible to widen it, if necessary by identifying resources. At this stage, mindfulness work keeps the patient in the here and now, moving away the trauma stuck in the past. Through nonverbal therapeutic work, double binds, triple binds, such as those with higher rank, can be resolved within a few sessions.

Keywords: Limbic Psychotherapy, Chronic Stress, Neurophysiology, Dissociation, Window of Tolerance

1. Limbic Psychotherapy® and the History of Psychotraumatology Very Early Traces of Traumatization

Despite the fact that humans have regrettably experienced traumas since ancient times, historical texts do not provide evidence of the recognition of such traumas. However, this is not the case for trauma symptoms, which have been evident in the earliest written pages of human history. For example, in the Epic of Gilgamesh, the oldest known written account of human history found in archaeological sources, King Gilgamesh experiences great distress following the death of his friend Enkidu.

The death of Enkidu plunges Gilgamesh into endless torment. Despair at having lost his better half, of course, but, even more, at having brutally witnessed the death,

visible on the very body of his friend, whom he held in his arms until "the worms fell from his nose". Gilgamesh no longer cares about glory, (...). Unable to get used to the idea of dying in his turn, he leaves in search, this time, of the life-without-an-end. [1]

The same sad fate befalls Achilles, in the Odyssey of Homer - more than 1,500 years after the Sumerian account - when he loses his friend Patroclus. The crisis he undergoes, in which he rolls around in the dust while delirious, has been compared to that of a dissociative patient of P. Janet by I. Saillot [2] because of its striking similarity.

Although the excruciating distress experienced by individuals was not clinically characterized in the past, it was often described with remarkable precision. However, in later times, dissociative disorders began to be increasingly associated with malevolent intentions, whether intentional or not. During the Middle Ages and into the Renaissance period in Europe, those suffering from dissociative disorders and

considered "possessed" were among the most misunderstood and persecuted clinical cases.

Reinterpretation of historical clinical cases

Currently, the DSM-V acknowledges pathological trances, but not cultural trances, as a component of dissociative disorders falling under the category of DDNOS. However, prior to the 16th century, many individuals with dissociative disorders expressed their symptoms through religious means, resulting in condemnation by the Inquisition or popular justice. The case of Jeanne Fery, meticulously studied by O. van der Hart, is a poignant example of such individuals. Jeanne's story is particularly well-known for her miraculous escape from death after successfully undergoing an "exorcism."

Jeanne Fery, a 25-year-old Dominican Nun, wrote her own account of her exorcism which took place in Mons, France in 1584 and 1585. Her exorcists produced an even more detailed account describing both identity fragmentation and a past history of childhood trauma. Also well described in both accounts are major criteria and associated features of DID as described in present day DSM. [3]

Although the prevalence of individuals considered "possessed" decreased significantly after the 16th century, such cases were still observed in Europe until the early 20th century. The renowned psychologist, Pierre Janet - whom we will briefly discuss in greater detail - had the opportunity to treat one such case, a man named Achille. Janet was the first clinician to accurately identify the dissociative nature of these pathological disorders.

In spite of the sleep in which Achille is apparently immersed, he hears our questions and can answer them; it is a somnambulistic state (...) The somnambulism that we observe is a form of dual personality (...). As for the mechanism of this reproduction, it is also well known: the dual personality already existed, when the patient presented automatic writing, when his subconscious thoughts were expressed under the name of the devil.

Let us note from the outset, as we shall make clear later in these pages, that Janet is not content here to establish the dissociative nature of his patient's symptoms: he bases the etiology of his pathology on a violent emotional shock. This unavoidable link between the emotional life and the trauma of the patients is already an anticipation of future discoveries on the central role of the limbic system in these pathological processes.

The emergence of mind-body issues

It wasn't until the late 19th century that clinical research on hypnosis made significant progress. During this time, Jean-Martin Charcot (1825-1893), a prominent neurologist at Paris' Salpêtrière Hospital, became deeply intrigued by the subject and developed a typology of artificially induced somnambulistic states [5]. He focused on patients who were referred to as "hysterical" at the time, but whom we would now describe as having "dissociative" disorders. Charcot deserves credit for introducing hypnosis into the medical profession and elevating it to a level of scientific research

worthy of serious attention, thus moving it away from its former reputation as a form of charlatanism. Additionally, Charcot was the first to recognize the close relationship between the mind and body. He observed that his patients' convulsions, pain, and insensitivity were a result of psychological phenomena, or "ideas," and he demonstrated the undeniable link between the body and mind. These remarkable findings inspired one of Charcot's students, Pierre Janet, to pursue further research in this field.

2. The Somatic Anchoring of Dissociative States

Pierre Janet (1859 - 1947) was both a psychologist and physician who dedicated his early career as a psychotherapist at the hospital in Le Havre to studying dissociative patients, referred to as "hysterical" patients at the time. His work revealed that these subjects had multiple personalities, with at least one inaccessible to language and memory, which he coined the term "subconscious personality." To reach this subconscious personality, Janet updated ancient magnetizer techniques, which he found only effective on traumatized subjects. His discoveries on famous cases such as Léonie or Lucie are recorded in his doctoral thesis in psychology, *L'Automatisme psychologique* [6]. Janet's work gained the attention of Charcot, leading to his invitation to direct a psychology laboratory at the Salpêtrière Hospital in Paris, which he created himself. Janet completed a doctorate in medicine on the mental state of hystericals. The psychological concepts and mechanisms Janet uncovered marked the entry into the modern era of dissociative and traumatic disorders [7]. In fact, his work played a significant role in the introduction of dissociative disorders into the DSM-III in 1980, more than a century later.

Through his work, Janet helped to establish a new paradigm for understanding the origins and treatment of psychological disorders, emphasizing the importance of addressing underlying emotional and psychological factors in addition to physical symptoms. Janet's legacy in psychology and psychiatry includes his important insight that many conditions thought to be neurological or organic in nature actually stem from psychological distress, often rooted in trauma experienced during childhood or later in life [8]. He expanded upon this idea, highlighting the crucial role of emotions, or what we might now refer to as emotional shock [9]. This is why, from the beginning, Janet focused his work on organic disorders, paralysis, insensitivity, contractures, pain, blindness or mutism, and therefore on the neurophysiology associated with them. Once he came into contact with the traumatic memory, Janet was able to modify it by reducing or even eliminating its emotional charge. This operation opens the way to a reintegration of the dissociated parts of the personality into the subject's biographical self. Thus, it appears that Janet was one of the first scientists to indisputably establish the relationship between the body and the mind, and to place the role of emotion at the heart of the

process. At the time, the fundamental role of the limbic system in emotional processes was still unknown: this pioneering work, now rehabilitated by international psychiatry, makes Pierre Janet the immediate (and most insightful) precursor of Limbic Psychotherapy®, an approach centered on the direct and unmediated regulation of the limbic system to reunify the fragmented personality.

The Structural Dissociation of Personality and its neurophysiological basis

The theory of Structural Dissociation of Personality (SDP) represents a significant advancement after Pierre Janet's work and has been further developed by O. van der Hart and his colleagues. In their book, *The Haunted Self* [10], they provide a compelling synthesis of Janet's insights and the latest findings from neurophysiological research, which are corroborated by functional brain imaging studies. Starting from the fundamental principles of Janet's model, Van der Hart and his colleagues show that under the effect of a traumatic shock, the personality dissociates into several parts (at least two): the "Apparently Normal" Part, or ANP, and the Emotional Part, or EP. While the ANP manages to carry out the daily tasks necessary for the life and sustenance of the traumatized individual, the EP contains all the details of the trauma but is now confined to a subconscious area of the brain, blocked in the past and totally inaccessible to verbalization through language, as well as to verbal memory [11].

Structural dissociation is underpinned by a failure to integrate traumatic events, and - as Janet already pointed out - it does not represent a defense mechanism, but a weakening with many adverse consequences for the dissociated subject. As in Janet's case, the structural dissociation of the personality is therefore the direct result of an emotional deregulation: here, it is a deregulation of the limbic system and other subcortical circuits, leading to the deregulation of the autonomic nervous system, the mechanism of which has been well explained by Sherrington and, subsequently, by Porges (we shall come back to this). The authors of *The Haunted Self* particularly highlight the determining role of neurophysiology in the dissociative process, exploiting knowledge that Janet did not have at his disposal at the time.

The theory of SDP, which draws heavily on Pierre Janet's work, provides insight into how personality fragmentation occurs following emotional shock. The authors of *The Haunted Self* describe how these fractures typically occur along the major life-sustaining functions, which they refer to as "action systems". Thus, at the time of the trauma, the ANP appropriates the functions of survival, feeding, and social commitment, while the EP(s) divide up functions such as fear and flight, or anger and attack, or prostration and submission. With the SDP theory, the synthesis between Janet's work and the latest research in neurophysiology provides a solid foundation for the crucial role of emotion, and thus of the limbic system, in all cases of trauma and dissociation.

The law of reciprocal innervation and its contemporary relevance

A pioneer in the study of the importance of subcortical

circuits in their relationship to the body and brain was the famous physician and physiologist Charles Sherrington (1857-1952). His studies of the nervous system led him to establish the law of reciprocal innervation, which is also referred to as "Sherrington's Law" [12]. According to the great physiologist, the excitation of an agonist muscle instantly causes the inhibition of its antagonist muscle; the most telling example of this law is the antagonistic functioning of the biceps and triceps brachii in man. But Sherrington also produced other contributions to science that are just as remarkable: he is, for example, the inventor of the concept of motor neuron, but also of synapses and their function of interaction between neurons, he is the first to explain in detail the fundamental notion of inhibition, to define proprioception in its current sense, and finally, he also formalized the concept of integration, one of the most useful and contemporary if any, to which we will be led to refer several times in these pages. Sherrington's work quickly reached an international audience, and soon went beyond the strict boundaries of neurology. Pierre Janet, one of the most illustrious psychologists of his time, often cited Sherrington's law as the operating model for several of the mechanisms he himself had discovered, foremost among which was his "inhibition of functions", the process that allows both reflection and reasonable action.

From the perspective of a limbic treatment of trauma and other somato-psychic disorders, Sherrington's Law of Reciprocal Innervation retains a vivid relevance. Indeed, we will now see that the processes of inscription of trauma in the body closely obey this law in that the neurophysiological pathways of stress and those of well-being are strictly antagonistic in Sherrington's sense: knowing these processes is of the utmost importance for both the therapist and his patient [13].

Polyvagal theory: a powerful tool for a limbic approach

Stephen Porges is an American psychologist and neuroscientist known for his polyvagal theory of emotions [14]. According to this approach, our autonomic nervous system has two distinct pathways that govern our response to the material and social environment. Porges showed that these two pathways determine our capacity for emotional regulation, in particular our ability to interact with others in an effective and safe manner. His discoveries open new horizons for the understanding and treatment of trauma: the dorsal vagal pathway maintains the stress and hypervigilance typical of a post-traumatic state by keeping the subject in a state of alarm to the point of freeze-paralysis, corresponding to the imminence of a serious danger, while the ventral vagal pathway participates in securing, physical and psychic calm and above all, in engaging in confident and serene social relationships. Thus, as we have previously recalled, Porges' two vagal pathways can be considered as a modern reformulation of the antagonistic pathways discovered by Sherrington, and already mentioned by Pierre Janet.

The perspective presented here is highly valuable for addressing trauma and other conditions that involve a level of stress disproportionate to the actual situation. Porges' theory

provides practitioners with a more direct approach to intervention, as it reveals that chronic or acute stress and many other negative effects of trauma stem from an imbalance in the sympathetic and parasympathetic branches of the autonomic nervous system. This conceptual and clinical progress makes it possible to guide interventions more effectively. This explains - and we would like to insist on this point - that this deregulation can be the object of an intervention centered on the limbic system, the main and subcortical seat of emotions. By provoking a return of regulation within these subcortical areas, the practitioner's specific intervention has an indirect effect on the cortex: the frontal lobes rapidly experience a powerful revival of activity and cognitive functioning is increased in both quantity and quality. It goes without saying that by intervening on a central nucleus of the deep brain, the Limbic Psychotherapy® approach is largely non-verbal, and therefore gives access to all the traumatic experiences that the patient cannot formulate through words [15].

3. The Roots of Limbic Psychotherapy®

Trauma and the Immuno-Endocrine System

In non-traumatized individuals, the release of stress hormones like adrenaline, norepinephrine, and cortisol usually lasts only for a few minutes before being broken down and excreted in the urine. However, in traumatized individuals, the secretion of these hormones can persist for prolonged periods, interrupted only by brief periods of a few hours before resuming the cycle. This dysregulation of the autonomic nervous system can become a chronic state that exhausts the body. Some subjects can become dependent on stress, considering that this state makes them perform well. They then come to therapy to help regulate this system, which only functions well under overload. The traumatized patient is therefore exposed to high levels of toxins for long periods of time, which can lead to an accumulation of substances in the tissues and a constant overload of the organs. The body is not adapted to handle such a situation, as biological evolution has favored reactions to rapid change over thousands of years of evolution: we then witness the bodily anchoring of structural or functional dissociation, namely the compartmentalization of the personality into EPs, with these dissociated parts enclosing traumatic experiences, phobic of the ANP and inaccessible to any verbal intervention [16].

Chronic stress often has adverse health consequences, particularly on the immune and cardiovascular systems. While cortisol can be beneficial in helping our bodies respond to temporary danger, high cortisol levels over a long period of time can disrupt the insulin mechanism, which regulates fat storage during digestion. This can lead, for example, to excessive weight gain, loss of muscle mass, and an increased risk of diabetes. In addition, these dysfunctions can weaken our immune response and make us more vulnerable to infections such as colds, bronchitis, rhinitis or sinusitis, and increase the risk of contracting the flu or other serious

respiratory infections. One of the most common causes of chronic stress is early attachment disorder, which is linked to a chaotic childhood and - all too often - to poor treatment during the first years of life by trusted adults.

By treating the problem directly at its root cause, Limbic Psychotherapy® attacks the heart of the patient's problem, whether it is old (chronic) or recent (acute). By intervening directly on the physiological factors of stress, without using language as a vector or even as a mediator, an additional interest of this approach is to render useless the old notion of the patient's "resistance", a concept that is irrelevant in the context of a non-verbal methodology, and this without suggestion. The intervention, without intermediaries and without a predefined protocol, aims at the reunification of the dissociated personality without any suggestion, an approach that we have already described as "hypnosis without hypnosis". When the neurophysiological regulation takes place, the patient immediately feels a sense of well-being and freedom, often forgotten for years: this first phase of healing, often obtained in only one or two sessions, then allows the work of strengthening the personality by helping the patient to define his or her own projects and goals.

Beyond Janet's psychastenia

First formulated by B. Mayer [17], the concept of Functional Dissociation® links the Structural Dissociation (SDP) of O. van der Hart and colleagues (currently the gold standard in psychotrauma) with the Psychastenia of Pierre Janet, himself the founder of the concept of the dissociation of the personality [18]. In formulating the theory of structural dissociation, O. Van der Hart and his colleagues highlighted the splitting of the personality into several parts, the ANP (Apparently Normal Part of the Personality), and the EP (Emotional Part of the Personality) during a traumatic shock or a chronic trauma. The disorder is further complicated by the fact that many EPs are formed. A long experience of clinical practice in the city has enabled us to propose a model with strong analogies with SDP and the mechanism of DID: functional dissociation. Already foreseen by Bateson and his double bind [19], closely anticipated by Janet and his Psychastenia [20], functional dissociation is a more common disorder than DID in general population patients.

Functional dissociation is distinguished from structural dissociation by the fact that the dissociated parts of the personality retain a mutual awareness of their existence and are in a state of demonstrated conflict. Secondly, functional dissociation differs from Janet's psychastenia - which the author claims is almost incurable - in that it can be effectively treated in a very short time. This extraordinary difference can be explained simply: today we have techniques and knowledge that the great psychologist did not have in his time. Indeed, the diagnosis of functional dissociation is accompanied by a treatment centered directly on the autonomic nervous system: Limbic Psychotherapy®. We will see below its main theoretical and clinical foundations.

The treatment of structural and functional dissociation

The theory of structural dissociation of the personality

developed by Onno van der Hart and his colleagues is an update of Pierre Janet's "Dissociation of Ideas and Functions" [8], which the great psychologist formulated in the late 1880s. The synergy between these two related conceptual frameworks provides a primary foundation for Limbic Psychotherapy®, which focuses on reuniting a personality that has been fragmented into an ANP and one or more EPs by life's traumas, whether acute or chronic, ancient or recent.

As P. Janet already indicated, healing trauma requires acting on the body rather than on the mind. In 1924, he wrote that "everything psychological is related to the behavior of the whole individual and not simply to changes in the brain". This idea was shared by Charles S. Myers, according to whom "mental and bodily activity are identical". This explains why Limbic Psychotherapy® works without intermediaries by acting directly on the cause of the traumas rooted in the body and the nervous system. This innovative approach thus gives direct access to the sources of suffering dissociated from the traumatic personality.

In this dissociative perspective, the stimuli and therapeutic body movements that we already use in the TICE® approach make it possible to rapidly detect the EP(s) that destabilize the patient, and to induce the beginning of a dialogue between these dissociated parts, which will finally lead to the integration of the entire personality. It is at this level of the intervention that the window of tolerance takes on its full importance. Indeed, it is important to regulate the activation of the sympathetic and parasympathetic pathways to rebalance the dorsal and ventral vagal states. This in-depth work requires a two-dimensional attunement, both neurophysiological and relational, to allow the therapist to connect to the patient's neurobiology. This two-faceted attunement also optimizes work at the limits of the window of tolerance, as it is crucial to remain attentive to the patient's reactivity, even when it is intense, so as not to exceed these limits.

The effectiveness of Limbic Psychotherapy® lies in its direct access to the dorsal and ventral vagal pathways as well as the sympathetic and parasympathetic systems. Porges' polyvagal theory has shown that traumatic states, dissociative states and developmental disorders are caused by an overactivity of the dorsal vagal pathway, which leads to a deficiency of the ventral vagal pathway and a disturbance in social relationships. Limbic Psychotherapy® connects to the ancestral and instinctive pathways of the nervous system that have evolved in mammals over millions of years. By releasing the resources held back by the trauma, this approach activates the ventral vagal pathway and promotes healing and self-healing, often within the first few sessions or within a very short time, which can cause an immediate feeling of release in patients.

The practitioner will be vigilant about the patient's physiological state during the therapeutic act, taking into account both the high and low activation levels of their window of tolerance. It is important to continuously monitor this state in order to be able to use regulation techniques in case of excessive activation. With this in mind, the practice

of Mindfulness is an important asset for the practitioner, who accompanies the patient in his or her body and neurophysiology, step by step, as part of the therapy. It is during this therapeutic time that new dialogues will be initiated and experienced in a conscious way, thanks to specific somatic interventions: this approach allows different parts of the brain, different emotional systems, and of course the ANP and EPs, to communicate in a non-verbal way, and to start the reunification of the dissociated personality.

4. Clinical Approach to Neurophysiological Deregulation

The deleterious effects of chronic stress

Our daily functioning is the result of a close collaboration between our three brains (the reptilian brain, the mammalian brain and the cortex), the immune system and the endocrine system. Without this exchange of information between these three major systems, we would not be able to adapt to danger or react appropriately to changes in our daily environment. Indeed, most of our physiological functions use hormones, for example insulin which controls the supply of energy to our body, testosterone which helps us defend ourselves or reproduce, or adrenaline which helps mobilize us in the face of danger.

Hormones are released into the body from the pituitary gland and the hypothalamus, nuclei located in the brain, as well as the adrenal glands, located above the kidneys. The regulation of these releases is carried out by the limbic system, which perceives and interprets the emotions generated by our interaction with the outside world. In fact, the cerebral and cognitive functioning of animals and humans is closely linked to the activity of the limbic system, which modulates the activity of the immune and endocrine systems. For example, certain neurons interact with interleukins, molecules that participate in the immune response in case of infection. Conversely, certain hormones such as adrenocorticotrophic hormone (ACTH) act directly on neurons.

These important advances in knowledge tell us that our thoughts, memories and plans, and especially our emotions, have a relentless effect on our autonomic nervous system, and in particular the "sympathetic" system, which regulates the stress response. Sympathetic pathways function to increase heart rate and alertness, so that we are prepared to attack in case of danger or necessary escape. Conversely, positive cognitive images (joy, hope, pleasure...) interact rapidly with the parasympathetic pathways of the peripheral nervous system, which have the effect of lowering the heart rate and relaxing the body. Going further, S. Porges has shown that this system is itself subdivided into two pathways, the dorsal vagal pathway and the ventral vagal pathway, both of which are directly linked to the stress response system or social engagement, as already mentioned by Sherrington with his concept of antagonistic circuits.

For its part, stress triggers a cascade of biochemical interactions mobilizing all our evolutionary resources. In the

presence of danger, this complex chain of neurochemical reactions begins with the activation of the sympathetic pathways of the autonomic nervous system; at the same time, the adrenal glands begin to release adrenaline. This hormone prepares our body to mobilize forces in a threatening context: to do so, it triggers the activity of a neuronal nucleus located in the heart of the brain: the hypothalamus, which orders the pituitary to produce ACTH (already mentioned). The cascade of biochemical interactions then continues with the diffusion of ACTH to the adrenal glands, where it releases cortisol. This hormone, often called the "stress hormone", is dedicated to preparing our body for an effort in the face of danger, or even survival: our reactions to events in the outside world, the dangers of our environment, the aggressions we may suffer, the risks we perceive, therefore have a very profound effect on our entire body, and it is the limbic system that constitutes the control tower. Therefore, the understanding and treatment of trauma cannot do without limbic management: Limbic Psychotherapy® is precisely focused on this crucial point.

Schizophrenia, dissociation and the limbic approach

In the early 1950s, the anthropologist G. Bateson, a specialist in communication and founder of the Palo Alto School, deepened his research into communication in a psychiatric context. Shortly after the psychiatrist D. Jakson joined the team, the group published a founding article: *Towards a Theory of Schizophrenia* [19]. In this article, a concept of major importance appears, that of "double bind".

For the authors, schizophrenia is caused by prolonged exposure to paradoxical messages that impose a double bind that cannot be resolved. Paradoxical messages are messages in which one modality contradicts the other, for example, a mother verbally demands affection, but rejects physical contact with her child. The child, unable to resolve the dilemma and find the solution, "dissociates": he then experiences what Bleuler called a *Spaltung* as the primary cause of schizophrenia. With G. Bateson, schizophrenia becomes a disease of paradoxical communication, i.e. a disease of the double bind.

These symptoms correspond closely to the testimony of many patients. One of the reasons is that very often the EPs, i.e. the dissociated parts of the personality, embody a person that the patient knows well, or has known in the past: often a parent, another family member... or himself as a child or young person. Paradoxically, this extremely innovative research has not received the attention it deserves. Indeed, Bateson and colleagues' theory of double bind has never been fully embraced by the psychiatric community, and the notion of double bind has remained confined to the communicative domain. One important reason for this oversight is that Bateson and his colleagues identified only one double bind, whereas clinical practice demonstrates every day that triple binds, quadruple binds, and indeed all kinds of binds often occur. By identifying the double bind with Bleuler's dissociation, a direct descendant of Janet's, Bateson took a decisive step towards the elucidation of dissociative disorders, but he stopped along the way. Bateson's double bind implies

only one ANP and one EP, whereas in practice there are often more, as O. van der Hart has shown. For as Janet had already indicated, dissociation often fragments the personality into more than two dissociated parts: only primary structural dissociation produces only two parts (an ANP and an EP). Secondary structural dissociation, on the other hand, produces at least three (one ANP and at least two EPs), and ternary dissociation at least four (two ANPs and at least two EPs).

Therefore, in the perspective adopted here, functional dissociation is similar in nature to Bateson's double bind, but it is more general, and more importantly, much more consistent with clinical data: functional dissociation must include triple binds, quadruple binds, and finally, "n-uple" binds [17].

The difference between a double bind and a triple, quadruple or n-uple bind is not only theoretical, it profoundly changes the approach to diagnosis and treatment of patients. Indeed, the clinical picture is quite different between a patient with one ANP and one PE and another patient literally tortured by a horde of PEs all in conflict with each other. There is a leap in complexity here that systemists - of whom Bateson was the leader - know well: from a certain number of components of the system, "the whole is more than the sum of the parts". When this threshold is crossed, the whole system reacts differently: the phenomenon of emergence, well described by the Palo Alto school, then occurs. By arbitrarily reducing their model to a double bind, Bateson and his colleagues were prevented from observing dissociations - structural or functional - of a higher order, after which they were unable to detect the resulting emergence phenomena.

Limbic psychotherapy® exploits this theoretical and clinical argument in depth: it is a question here of intervening directly on all the dissociated EPs, by directly accessing the source of the patient's suffering, namely his autonomic nervous system and the neurophysiological ramifications that irrigate his entire body.

The main advantages of Limbic Psychotherapy®

Functional dissociation shares with structural dissociation a set of cognitive, emotional and behavioral symptoms. It is this multiplicity of symptoms that requires treatments to be multidimensional [17]. Purely verbal therapies rely on patients' testimony, testimony that they cannot always provide because, as we have seen, many patients are unaware of the root cause of their disorders and come to treatment for other reasons [21]. This is why, in the case of acute or chronic traumas or persistent attachment disorders, non-verbal approaches such as Limbic Psychotherapy® are best suited for treatment, especially since no suggestion - even metaphorical - will be induced by the practitioner.

Among the semi-verbal or non-verbal approaches, the integrative therapies centered on the deep neurobiology of the disorder are certainly those with the greatest potential. On the borderline between body and mind, these "bottom-up" approaches have the particularity of mobilizing the neurophysiological resources of the patients while avoiding any

risk of suggestion on the part of the therapist. This is what already characterized Integrative Mind-Body Therapy (TICE®), which I have been developing since the 1990s, and it is what makes up the essence of Limbic Psychotherapy®, an approach that capitalizes on decades of clinical experience with patients. From this point of view, the therapeutic alliance associated with a Mindfulness approach allows the treatment to be carried out while totally preserving the freedom and initiative of the patient: it is the patient who directs the treatment towards the path that authentically corresponds to him/her, and not the therapist. The integration of the reunifying personality takes place without constraint or distortion, without will or control: there is no suggestion from the practitioner in this non-verbal context. From this point of view, the therapist is only a guide: he/she accompanies the patient on the path that he/she traces himself/herself, without being subject to any potentially harmful external influence. This integrative approach allows the therapist to avoid (re)playing the role of aggressor for the patient, a major pitfall of many other approaches, already theorized in the last century.

Like Janet-Van der Hart's structural dissociation, functional dissociation is a morbid structure supported by a faulty relationship to the past and assiduously maintained by the autonomic nervous system, as Porges precisely describes the framework. By helping the patient to focus on the here and now, by supporting him in his effort of Full Consciousness, Limbic Psychotherapy® unravels what Janet already called "anchoring": the treatment will be all the more effective as it will mobilize the activation of the autonomic nervous system: sympathetic and parasympathetic pathways. Limbic Psychotherapy® exploits this potential to the fullest by placing itself within the framework of neurophysiology and the polyvagal theory of S. Porges: the intervention rapidly decreases the activity of the dorsal vagal pathway, while increasing that of the ventral vagal pathway.

5. Conclusion

Centered on the neurophysiology of the body-mind links, Limbic Psychotherapy® directly mobilizes the patient's own resources with a curative goal that is often similar to self-healing: D. Grand already emphasized this in the context of Brainspotting [22]. The uncovering - progressive or rapid - of the main problem brings out the EPs (often numerous) frozen in the past, some of which are the allies, and others, the aggressors of the main personality, or ANP. This system is stuck in the past and unable to evolve [23], causing chronic suffering in patients. By identifying the antagonistic neurophysiological states corresponding to these functionally dissociated parts, some dependent on the dorsal vagal pathway, others on the ventral vagal pathway, the treatment is quickly unblocked. The main effect is a release of internal energies dedicated to the liquidation of reactions to the traumatic situation, which could not be realized at the time of the trauma.

Due to the autonomic nervous system's ability to regulate itself independently of conscious control, significant progress can often be achieved in just a few sessions: Limbic

Psychotherapy® aims to gradually reactivate the frontal lobes that have been inhibited by traumatic shocks, whether they occurred during childhood or later in life. This integrated approach combines neurotherapy and psychotherapy to address dissociation directly at the bodily level. By focusing on non-verbal techniques, Limbic Psychotherapy® offers a direct and effective approach to treating structural or functional dissociation. Future research should include new treatment trials targeting addictions such as tobacco and alcohol, phobias, but also anorexia-bulimia and early attachment disorders.

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