Physical Manifestations of Emotional Disorders

Observations from the Study of Non-Ordinary States of Consciousness

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Grof wrote this previously unpublished article from which the article, "Holotropic Breathwork and the Hyperventilation Syndrome", was extracted and published in The Inner Door in May 1997. We are pleased to publish the article here in its entirety. Grof reviews the literature regarding somatization and psychosomatic disorder and recounts his observations during the research with non-ordinary states. He concludes that the traditional concept of the 'hyperventilation syndrome' is obsolete and has to be revised to reflect that faster breathing creates a biochemical situation in the body that facilitates emergence and resolution of old emotional and physical tensions associated with unresolved psychological and physical traumas. In the light of the observations from Holotropic Breathwork, spontaneous episodes of hyperventilation, occurring in psychiatric patients and the normal population, should be seen as attempts of the organism to heal itself and should be supported rather than suppressed.

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As it is not proper to cure the eyes without the head,
nor the head without the body, so neither is it proper
to cure the body without the soul.
~Socrates

It is well known that many emotional disorders, such as psychoneuroses, depressions, and psychoses have distinct physical manifestations — headaches, breathing difficulties, nausea, loss of appetite, constipation or diarrhea, heart palpitations, excessive sweating, tremors, tics, muscular pains, vasomotor disturbances, skin afflictions, amenorrhea, menstrual cramps, dyspareunia, orgastic inability, and impotence. The sexual dysfunctions can often represent primary problems *sui generis* that are serious and long-lasting, rather than being transitory concomitants of neurotic reactions.

In some psychoneuroses, the physical symptoms are very specific and characteristic and represent the predominant feature of the disorder. This is certainly true in regard to conversion hysteria, a dissociative disorder in which the major symptoms are hysterical paralysis, aphonia, astasia, temporary blindness, anesthesia, vomiting, a motor seizure with the "arc de circle", false pregnancy (pseudokyesis), and even stigmata. Here belongs also a group of disorders that classical psychoanalysts called pregenital neuroses; it includes various tics, stammering, and psychogenic asthma. They are characterized by an obsessive-compulsive personality structure, but the basic defense mechanism involved in symptom formation is conversion like in hysteria.

There also exists a group of disorders with striking physical manifestations in which the psychological component is so obvious and important that even the medical model calls them psychosomatic diseases. The term "psychosomatic" was first used by Heinroth in 1818 when he discussed psychosomatic aspects of insomnia and was later popularized by the German psychiatrists Jacobi and Nasse. Over the years, the term "psychosomatic" gained considerable popularity and has come to reflect the importance of psychological factors in medicine and also describe a large variety of medical disorders of psychogenic origin. Here belong migraine headaches, certain forms of hypertension, peptic ulcers, colitis, psychogenic asthma, psoriasis, and eczemas.

In 1935, psychoanalyst Franz Alexander, considered to be the founder of psychosomatic medicine, proposed a theoretical model explaining the mechanism of psychosomatic disorders, which underlies much of the clinical work and research until this day.[1] His key contribution was the recognition that psychosomatic symptoms result from the physiological concomitants of psychological conflict and trauma. Emotional arousal during acute anxiety, grief, or rage gives rise to intense physiological reactions; this leads to the development of psychosomatic symptoms and disease, but only in those individuals who are organically predisposed, not in healthy ones. This predisposition is a crucial but variable factor in the genesis of psychosomatic disease. There exist considerable disagreements as to what is the nature of this predisposition.

Alexander differentiated between conversion reactions and psychosomatic disorders, which were previously considered to be similar to neurotic reactions. Although the source of the underlying emotional state in these disorders can be traced to psychological trauma, neurotic conflicts, and pathological interpersonal relationships, the symptoms do not have symbolic significance and do not serve as a defense against anxiety (which is characteristic of neurotic symptoms). It is actually a failure of psychological mechanisms to protect the individual against excessive affective arousal.

In 1952, the American Psychiatric Association in its standard nomenclature recognized the ambiguity in the use of the word "psychosomatic" and coined the designation "psychophysiologic autonomic and visceral disorder." The symptoms of this category of disorders are seen as resulting from a chronic exaggerated state of the normal physiological expression of emotions; such long continued physiological and visceral states may eventually lead to structural changes in various organs. The field of psychosomatic medicine is characterized by fundamental lack of agreement about the mechanisms involved in the psychogenesis of somatic symptoms and no single theoretical model is considered entirely satisfactory

Theoretical models

There exist considerable disagreements about the nature of the predisposition for psychosomatic disorders and the specific vulnerability that determines the choice of the organ. The models fall into the following three categories: 1. "Specificity models", 2. "Non-specificity models", and 3. "Individual response specificity models".

1. "Specificity models"

The theoretical models that belong to this category assert that various psychosomatic symptoms and diseases can be traced to specific psychopathological events and affective states. Franz Alexander and other psychoanalysts used in their interpretations the common analytic concepts, such as unconscious dynamics, fixation on various stages of development of the libido and the ego, problems in object relationships, regression, psychological defense mechanisms, *etc.*

According to this view, various traumatic events induce anxiety with subsequent regression that has immature and pathogenic physiological concomitants (Alexander's "regressive innervation"). For example, peptic ulcer patients show a fixation on the oral period of libido development and have serious unresolved unconscious conflicts about dependency. Regression then leads to hypersecretion of gastric juices. Hypersecretion in patients with great dependency needs has been described by Arthur Mirsky.[2]

Another avenue in this category are various attempts to define the "personality profiles" of people conducive to specific psychosomatic disorders, a tradition started by Flanders Dunbar.[3] These studies linked, for example, the hard driving executive to coronary heart disease, distinguished A and B personality types, *etc.* Stewart Wolff and Harold Wolff developed techniques for studying psycho-physiological correlations, for example, emotional holding

on and riddance leading to constipation and diarrhea.[4] Similar concepts have become very popular in psychotherapeutic circles, implying that psychological issues and conflicts can be expressed in symbolic body language: pain in the neck muscles in people who carry too much responsibility, stomach problems in people who are unable to "swallow" or "stomach" something, breathing difficulties caused by a mother who is "smothering" her offspring, oppressive feelings on the chest resulting from "heavy grief", *etc.*

Objections have been raised against the "specificity theories". Patients with various psychosomatic disorders can have a wide range of psychodynamic problems and psychiatric diagnoses that range from "normal" to psychotic. The psychological problems of the patients cannot be predicted from the nature of their psychosomatic symptoms and *vice versa.* The same "specific etiological variables" have been postulated for a wide range of psychosomatic disorders, *e.g.,* pathological dependency needs and loss of a significant relationship for ulcerous colitis, ileitis, rheumatoid arthritis, psychogenic asthma, and some skin disorders. In addition, some psychosomatic disorders can be modeled in animals, such as gastric hypersecretion induced by non-specific stress; naturally, here we cannot assume the role of unconscious fantasies, symbolic processes, interpersonal conflicts, *etc.*

2. "Non-Specificity models"

The models that belong to this category reject the notion of specific psychopathological factors in the genesis of psychosomatic disorders. They argue that any stimulus capable of causing psychological distress may evoke a diffuse affective state (chronic anxiety) and lead to the development of a psychosomatic disorder. The nature of the disorder cannot be predicted from the psychological trigger. According to Mahl, the physiological concomitants would be the same, irrespective of the stressor, whether it is bombing during the war, competitive medical examination, or interpersonal conflict involving a love object.[5]

Hans Selye showed that there exist universal manifestations of chronic stress, such as gastric and cardiovascular activation, and increase of adrenal steroid hormones.[6] However, the onset of psychosomatic disorders is often associated with a psychodynamically determined breakdown of psychological defenses that ordinarily protect the individual from intensive emotional arousal. Organ susceptibility can be a combination of constitutional factors and early experiences. This model, although too general, is consistent with clinical and research data.

3. "Individual response specificity models"

The models in this category suggest that the type of the psychosomatic disorder the individual develops depends primarily on his or her specific response pattern rather than on the nature of the stimulus. Various individuals show highly characteristic and consistent patterns of emotional arousal, which may be evoked by a wide range of stimuli and lead to specific psychosomatic disorders. There are "gastric reactors", "cardiac reactors", "hypertensive reactors", *etc.* The emotional reactions of adults with psychosomatic disorders tend to show specific foci of activation, in contrast to the diffuse and immature

reactions of infants. The characteristic response pattern is developed early in childhood and is highly consistent over time. This is a very popular theory.

Current status

It is generally accepted that no single model explains satisfactorily all psychosomatic disorders and the opinion leans toward multicausality. Psychological factors play a significant role but are not the exclusive causative determinants. One has to take into consideration also constitution, heredity, organ pathology, nutritional status, environment, and social and cultural determinants. Psychological and somatic phenomena that were earlier seen as separate discrete processes are now seen as representing different aspects of a unitary phenomenon of affect engaged in reciprocal interaction. In addition, the brain structures which control emotions and visceral functions are identical or closely related. Fear, anger, sexuality, and the functioning of viscera and glands are all regulated by the limbic system and hypothalamic structures (also linked to cortical and subcortical levels of organization). The precise nature of these interrelationships has not yet been established.

Insights from consciousness research and experiential therapies

The explanations of psychosomatic symptoms and diseases offered by most schools of depth psychology are generally unconvincing. They attribute causal role to memories of events witnessed in childhood or traumatic experiences from later life. They interpret psychogenic asthma as a cry for the mother or result of a restrictive "choking influence of the mother" and explain hysterical paralysis as reflecting a conflict about doing something forbidden. Similarly, stammering is seen as resulting from suppression of verbal aggression and an urge to utter obscenities, a sense of being burdened can lead to severe shoulder pains, and the difficulty to "stomach" something can produce psychogenic nausea. In the same vein, severe skin disorders can serve as protection against sexual temptation, as suggested, for example by early pioneer of psychoanalysis Wilhelm Steckel.

More convincing insights concerning the nature and psychogenesis of psychosomatic disorders came from the work of the brilliant and controversial pioneer of psychoanalysis Wilhelm Reich.[7] He showed that the traumatic psychological events discussed in psychoanalysis are not sufficient to explain the development of emotional and particularly psychosomatic symptoms. He emphasized jamming and blockage of significant amounts of bioenergy in the muscles and viscera as the main factor underlying such symptoms ("character armor").

According to Reich, this jamming of bioenergy results from the conflict between our biological needs and repressive society that does not allow a free and full satisfaction of the sexual drive. This blocked energy then finds deviant expression in the form of perversions, neurotic, and psychosomatic symptoms, and, on a large scale, to destructive societal movements. Reich also introduced into therapy, as new principles, breathing maneuvers and bodywork aimed at release of these pent-up energies. However, according to him, full emotional liberation required a revolution in human society. Reich

became a Communist and after publishing his book on *Mass Psychology of Fascism",* he was excommunicated both from the Psychoanalytic Association and the Communist party.

The work with non-ordinary states of consciousness, such as psychedelic therapy, primal therapy, rebirthing, or Holotropic Breathwork, reveals enormous amounts of blocked and jammed emotional and physical energy (bioenergy) underlying various psychosomatic disorders (and also emotional disorders in general). It thus confirms the Reichian theory, but only in the most general sense, not in specifics. While Reich believed that the pent-up energy was suppressed libido, which then was a manifestation of physical universal energy (*orgon),* the new observations reveal that much of this energy is of perinatal origin. It is the result of the excessive neuronal stimulation generated during the passage through the birth canal. In addition, much of this energy seems to be of transpersonal origin and can be traced back to the archetypal and historical domains of the collective unconscious and to ancestral, karmic, and phylogenetic memories.

An important contribution of modern consciousness research is the discovery of the critical role that unassimilated and unintegrated physical traumas play in the genesis of all psychosomatic manifestations. The psychodynamic schools tend to see psychosomatic symptoms as results of somatization of psychological conflicts and traumas and fail to see the critical role physical psychotraumas play in their genesis. Experiential work using non-ordinary states of consciousness leaves no doubt that the real source of psychosomatic symptoms is always events that involved physical insults.

In addition, the traumatic situations discovered during deep experiential work are not limited to the postnatal period; they often include biological birth and even episodes that are transpersonal in nature, particularly karmic material. For example, therapeutic work on psychogenic asthma will inevitably lead to unassimilated memories of situations that actually involved the experience of suffocation, such as near drowning, being strangled, choking on a foreign object, inspiration of blood during tonsillectomy, whooping cough, childhood pneumonia, birth, or being hanged or strangled in a previous lifetime. Similarly, the material underlying psychosomatic pains can include memories of painful accidents, operations, or diseases, pain experienced during the birth process, and physical suffering connected with a past life injury or death.

One of the few systems that recognize the powerful psychotraumatic impact of physical traumas, has been Ron Hubbard's Scientology.[9] The psychological significance of traumas is assessed by *auditing*, a process of exploration and therapy that is objectively guided by galvanometers. The theoretical system of Scientology does not include only physical traumas in postnatal life, but also somatic traumatization during birth, and in past lives. Hubbard referred to imprints of physical traumatizations as *engrams* and saw them as primary sources of emotional problems. In his terminology, the usual psychological traumas are called *secondaries*; in a sense, they borrow their emotional power from their associations with *engrams*. Unfortunately,

the abuse of scientological knowledge for pursuit of power and money has discredited Hubbard's important theoretical contributions.

I would like to illustrate the observations concerning the dynamic structure of psychosomatic manifestation by three condensed case histories. The first of these involves Norbert, a fifty-one-year-old psychologist and minister who participated in one of our five-day workshops at the Esalen Institute in Big Sur, California.

> *During the group introduction preceding the first session of Holotropic Breathwork, Norbert complained about severe chronic pain in his shoulder and pectoral muscles that caused him great suffering and made his life miserable. Repeated medical examinations, including X-rays, had not detected any organic basis for his problem and all therapeutic attempts had remained unsuccessful. Serial Prokain injections had brought only brief transient relief for the time of the effect of the drug.*
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> *At the beginning of the session of Holotropic Breathwork, Norbert made an impulsive attempt to leave the room, since he could not tolerate the music, which he felt was "killing" him. It took great effort to persuade him to stay with the process and to explore the reasons for his discomfort. He finally agreed and, for almost three hours, he experienced severe pains in his breast and shoulder, which intensified to the point of becoming unbearable.*
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> *He struggled violently as if his life were seriously threatened, choked and coughed, and let out a variety of loud screams. Following this stormy episode, he quieted down and was relaxed and peaceful. With great surprise, he realized that the experience had released the tension in his shoulder and muscles and that he was free from pain. Retrospectively, Norbert reported that there were three different layers in his experience, all of them related to the pain in his shoulder and associated with choking.*
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> *On the most superficial level he relived a frightening situation from his childhood in which he almost lost his life. When he was about seven years old, he and his friends were digging a tunnel on a sandy ocean beach. When the tunnel was finished, Norbert crawled inside to explore it. As the other children jumped around, the tunnel collapsed and buried him alive. He almost choked to death before he was rescued.*
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> *When the Breathwork experience deepened, he relived a violent and frightening episode that took him back to the memory of biological birth. His delivery was very difficult, since his shoulder had been stuck for an extended period of time behind the pubic bone of his mother. This episode shared with the previous one the combination of choking and severe pain in the shoulder.*
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> *In the last part of the session, the experience changed dramatically. Norbert started seeing military uniforms and horses and recognized that he was involved in a battle. He was even*

able to identify it as one of the battles in Cromwell's England. At one point, he felt a sharp pain and realized that his shoulder had been pierced by a lance. He fell off the horse and experienced himself as being trampled by the horses running over his body and crushing his chest.

Norbert's consciousness separated from the dying body, soared high above the battlefield, and observed the scene from this perspective. Following the death of the soldier, whom he recognized as himself in a previous incarnation, his consciousness returned to the present and reconnected with his body that was now pain-free for the first time after many years of agony. The relief from pain brought about by these experiences turned out to be permanent. It has now been over twenty-five years since this memorable session and the symptoms have not returned.

The second case history involves Tanya, a 34-year-old teacher and divorced mother of two children. Her main reasons for undergoing psychedelic therapy were depression, anxiety states, and proneness to fatigue. However, one of her LSD sessions brought an unexpected solution to a severe physical problem, which had been considered purely organic in nature.

For the previous twelve years she had been suffering from chronic sinusitis with occasional acute flare-ups because of colds or allergies. The sinus troubles had started shortly after her wedding and represented a severe inconvenience in her life. The major symptoms related to this problem were headaches and strong pains in the cheeks and teeth, low-grade fevers, heavy nasal discharge, and bouts of sneezing and wheezing. On many occasions she was awakened by a coughing attack; some mornings these symptoms lasted three to four hours.

Tanya had numerous tests for allergies and was treated by many specialists with antihistamines, antibiotics, and flushing of the sinuses with disinfectant solutions. When all this failed to bring any therapeutic results, her doctors suggested an operation involving scraping the interior of the sinuses, which Tanya declined.

In one of her LSD sessions, Tanya was reliving her birth and experiencing suffocation, congestion, and severe pressure on her head. She recognized that these sensations bore a close resemblance to the symptoms associated with her sinus problems, however, they were greatly amplified. After several sequences that were clearly of a perinatal nature, the experience suddenly opened into reliving of what appeared to be a past incarnation memory.

In this context, the experiences of oppression, choking, and congestion that had earlier been part of the birth trauma became symptoms of drowning. Tanya felt that she was tied to a board

and was slowly being pushed under water head first by a group of villagers. After dramatic emotional abreaction associated with screaming, violent choking, coughing, and profuse secretion of enormous amounts of thick, greenish nasal discharge, she was able to recognize the place, circumstances, and protagonists related to this episode.

She was a young girl in a New England village who had been accused by her neighbors of witchcraft, because she was having unusual experiences of a spiritual nature. A group of villagers dragged her one night to a nearby birch-grove, fixed her to a board, and drowned her in a cold pond. In the bright moonlight, she was able to recognize among her executioners the faces of her father and ex-husband in her present lifetime.

At this point, Tanya could see many elements of her current existence as approximate replicas of the original karmic scene. Certain aspects of her life, including specific patterns of interaction with her husband and her father suddenly appeared to make sense, down to the most specific details.

This experience of the New England drama and all the intricate connections Tanya made, as convincing as they were on the subjective level, clearly do not in themselves constitute proof of the historical validity of the episode and of a causal link between the event and her sinus problems. Nor could her conviction that she was dealing with a karmic pattern be considered evidence for the existence of reincarnation. However, to the astonishment of everybody concerned, this experience cleared the chronic sinus condition that had plagued Tanya for a period of twelve years and that had proved completely refractory to conventional medical treatment.

I would like to conclude this discussion of the multilevel dynamic structure of psychosomatic systems and their connection with birth and the transpersonal level by the most dramatic case history of my entire psychiatric career. The following events happened at the time when I was involved in clinical research of psychedelic substances.

While working at the Maryland Psychiatric Research Center, I was invited to a staff conference at the Spring Grove State Hospital. One of the psychiatrists was presenting the case of Flora, a 28-year-old single patient who had been hospitalized by then for more than eleven months in a locked ward. All available therapy, including tranquillizers, antidepressants, psychotherapy, and occupational therapy, had been tried but failed, and she was facing transfer to the chronic ward.

Flora had one of the most complicated combinations of symptoms and problems I have ever encountered in my psychiatric practice. When she was sixteen years old, she was a member of a gang that conducted an armed robbery and killed a night watchman. As driver of the get-away car, Flora spent four years in prison and was then placed on parole for the rest of her sentence. During

the stormy years that followed, she became a multiple drug addict. She was an alcoholic and a heroin addict, and frequently used high doses of psychostimulants and barbiturates.

Her severe depressions were associated with violent suicidal tendencies; she frequently had impulses to drive her car over a cliff or to collide with another automobile. She suffered from hysterical vomiting which occurred easily in situations where she became emotionally excited. Probably the most agonizing of her complaints was a painful facial cramp, "tic douloreux," for which a Johns Hopkins neurosurgeon had suggested a brain operation consisting in severing the nerve involved. Flora was a lesbian and had severe conflicts and guilt about it; she had never had heterosexual intercourse in her life. To further complicate the situation, she was court committed because she had severely wounded her girlfriend and roommate while trying to clean a gun under the influence of heroin.

At the end of the Spring Grove case conference, the attending psychiatrist asked Dr. Charles Savage and me if we would be willing to consider Flora for LSD psychotherapy. We found this to be an extremely difficult decision, especially because this was at the time of the national hysteria concerning LSD. Flora had a criminal record already; she had access to weapons, and had severe suicidal tendencies. We were well aware that the atmosphere was such that if we gave her an LSD session, whatever happened after that point would automatically be blamed on the drug and our treatment, without regard to her past history. On the other hand, everything else had been tried without success and Flora was facing a lifetime in a chronic ward. After some deliberation, we decided to take the chance and accept her into the LSD program, feeling that her desperate situation justified the risk.

Flora's first two high-dose LSD sessions were not much different from many others I had run in the past. She had to confront a number of situations from her stormy childhood and repeatedly relived sequences of the struggle in the birth canal. She was able to connect her violent suicidal tendencies and painful facial cramps to certain aspects of the birth trauma, and to discharge large amounts of intense emotion and physical tension. Despite this, the therapeutic gains seemed to be minimal. In her third LSD session, nothing extraordinary happened during the first two hours; her experiences were similar to those of the previous two sessions. Suddenly, she started complaining that the painful cramps in her face were becoming unbearable. Before our eyes, the facial spasms were grotesquely accentuated and her face froze into what can best be described as a mask of evil.

She started talking in a deep, male voice and everything about her was so different that I could not see any connection between

her present appearance and her former self. Her eyes had an expression of indescribable malice and her hands were spastic and looked like claws. The alien energy that took control over her body and voice introduced itself as the devil. "He" turned directly to me, ordering me to stay away from Flora and give up any attempts to help her. She belonged to him and he would punish anybody who dared to invade his territory.

What followed was a barrage of explicit blackmail, a series of dismal descriptions of what would happen to me, my colleagues, and the program if I would not obey. It is difficult to describe the uncanny atmosphere which this scene evoked; one could almost feel the intangible presence of something alien in the room. The power of the blackmail was further increased by the fact that it involved certain concrete information to which the patient in her everyday life could not have had access.

I found myself under considerable emotional stress and experienced intense fear which had metaphysical dimensions. Although I had seen similar manifestations in some LSD sessions, they were never so realistic or convincing. It was difficult for me to control my fear and a tendency to enter into what I felt would be an active combat with the presence. I found myself thinking fast, trying to choose the best strategy for the situation. At one point, I caught myself seriously considering that we should have a crucifix in our therapeutic armamentarium. My rationalization for this idea was that this was obviously a Jungian archetype that was manifesting and that the cross could, under these circumstances, function as a specific archetypal remedy.

It soon became clear to me that my emotions, whether of fear or aggression, were making the entity more real for me. I could not help thinking of scenes from Star Trek, a popular American science fiction television program involving an alien entity that fed on emotions. Finally, I realized that it was essential for me to remain calm and centered. I decided to put myself into a meditative mood, while I held Flora's cramped hand and tried to relate to her in the form in which I had known her before. At the same time, I tried to visualize a capsule of light enveloping us both, which intuitively seemed to be the best approach. The situation lasted over two hours of clock-time; in terms of the subjective time-sense these were the longest two hours I have ever experienced outside of my own psychedelic sessions.

After this time, Flora's hands relaxed and her face returned to its usual form; these changes were as abrupt as the onset of the peculiar condition. I soon discovered that she did not remember anything of the two hours preceding. Later, in her write-up, she described the first two hours of the session and continued with the period following the "possession state." I seriously questioned if I should discuss the time covered by her amnesia with her

and decided against it. There did not seem to be any reason to introduce such a macabre theme into her conscious mind.

To my great surprise, this session resulted in an astonishing therapeutic breakthrough. Flora lost her suicidal tendencies and developed new appreciation for life. She gave up alcohol, heroin, and barbiturates and started zealously attending the meetings of a small religious group in Catonsville. One of the most remarkable aspects of her clinical improvement was a dramatic alleviation of her painful facial spasm. For most of the time she now did not have any facial cramps at all; the energy under lying them seemed to have exhausted itself in the "mask of evil" that she had maintained for two hours. The occasional recurrence of the pain was of negligible intensity and did not even require medication. The neurosurgical operation was not necessary any more and was cancelled.

Flora also started experimenting with heterosexual relations and eventually got married. Her sexual adjustment was not good, however; she was capable of intercourse, but found it painful and not very pleasant. The marriage ended three months later and Flora returned to lesbian relationships; this time, however, with much less guilt. Her condition was so improved that she was accepted as a taxi driver. Although the following years had their ups and downs, she did not have to return to the psychiatric hospital that could have become her permanent home.

We can now summarize the observations from consciousness research concerning psychosomatic disorders and use these findings to clarify some of the inconsistencies and disagreements about their nature and origin. The psychodynamic structure underlying these disorders has the form of multilevel constellations of memories and other unconscious material for which I coined the term COEX systems (systems of condensed experience).

The most superficial layers of this system involve episodes from postnatal biography, in this case memories of both physical and psychological traumas. A deeper layer of these systems is formed by memories related to biological birth, an event which is by its very nature both physical and psychological. The recognition of the pathogenic impact of birth thus helps to resolve the conflict between psychological and biological theories of psychiatry. The deepest layer of the COEX systems are then matrices of transpersonal nature, such as past life material, archetypal patterns, or phylogenetic elements.

The postnatal psychological traumatizations have specific links to developmental stages of the libido and the ego, specific parts of the body, and problems in interpersonal relations. They are also connected with various psychological defense mechanisms and symbolic elaborations. While postnatal physical traumatizations and particularly perinatal dynamics also involve differences in engagement of various organs (*e.g.,* suffocation in near-drowning situations, pain of fractures or operations, pressure on the head and

suffocation at birth, *etc.*), they represent an extreme form of raw and undifferentiated stress.

This certainly seems to be relevant for the conflict concerning the specific and unspecific triggers of psychosomatic disorders, as well as the difference between psychosomatic disorders and neurotic conversion reactions emphasized by Franz Alexander. It could explain why both specific and non-specific stress can induce psychosomatic symptoms, as well as the fact that non-specific stress can repeatedly induce the same symptoms in a particular individual. Birth is a major psychophysical trauma and involves the first major loss of an object, separation from the mother, followed by a situation of extreme dependency. Its involvement in the genesis of psychosomatic disorders could thus account for the fact that loss of an important relationship and extreme dependency needs are factors that play a significant role in psychosomatic disorders of various kinds.

The observations from modern consciousness research concerning the close connection of psychosomatic disorders with physical traumatization and the depth of their roots make it clear that psychotherapy limited to verbal means has very little chance to influence them. Words alone cannot solve the problem of suffocation, painful muscular spasms, or severe nausea; this requires deep experiential work that involves reliving of the underlying memories and abreacting the emotional and physical energies associated with them.

The conceptual framework within which this process is undertaken has to provide a plausible and non-pathological explanation for experiences of extreme intensity and to include perinatal and transpersonal experiences. This seems to be related to the fact that abreaction during hypnosis and narcoanalysis was found useful in the treatment of war neuroses, but not psychoneuroses. The therapists knowing that the client had been exposed to drastic situations were able and willing to tolerate emotional and physical reactions of extreme intensity without fear that the clients were entering a psychotic terrain.

Very often people at the lectures on experiential work ask the question why "reliving" of traumatic events is therapeutic and does not actually represent a retraumatization. The best answer can be found in the article "Unexperienced Experience" by the Irish psychiatrist Ivor Brown.[10] He suggested that we are not dealing here with an exact replay or repetition of the original traumatic situation, but with the first full experience of the appropriate emotional and physical reaction to it. In addition, the individual who is now facing it is not any more the helpless and vitally dependent child, but a grownup. He or she can handle the traumas that for the infant and small child were excessive and overwhelming.

Holotropic Breathwork and the 'Hyperventilation Syndrome'

Breathing is the basic rhythm of life.
~Hippocrates

As I have shown, therapeutic methods using various breathing techniques for inducing non-ordinary states of consciousness throw interesting light on the genesis of psychosomatic symptoms and represent an effective method of treating psychosomatic disorders. However, they also bring new and revolutionary insights concerning the response of the human body to an increased rate of breathing. They help to correct the deeply ingrained misconception found in medical handbooks on respiratory physiology which indicates that the mandatory physiological reaction to rapid breathing is a stereotypical pattern, the so called 'hyperventilation syndrome'. The new insights from experiential work have far-reaching implications for the understanding of the nature of emotional and psychosomatic disorders and for therapeutic strategies.

Ancient and modern understanding of breathing

I will begin this discussion with some general remarks about breathing and its physical, psychological, and spiritual aspects. In ancient and pre-industrial cultures breath and breathing have played a very important role in cosmology, mythology, and philosophy, as well as an important tool in ritual and spiritual life. Since earliest history, virtually every major psychospiritual system seeking to comprehend human nature has viewed breath as a crucial link between the body, mind, and spirit.

In the ancient Indian tradition, the term *prana* meant not only physical breath and air, but also the sacred essence of life. Breathing exercises played an extremely important role in yoga and particularly in Tantra. The use of breathing in spiritual practice was the subject of a special science of breath called *pranayama*. In ancient Greece, the word *pneuma* meant both the air or breath and spirit, the essence of life. Breath was also seen as closely related to the psyche; the term *phren* was used both for the diaphragm, the largest muscle involved in breathing, and for the mind. In modern psychiatry we find this meaning in the diagnostic labels of oligophrenia, paraphrenia, and schizophrenia. Imbalance of breathing was seen as a major cause of physical and mental diseases.

In the old Hebrew tradition, breath and creative spirit *ruach* were also seen as identical. In the creation story in the Old Testament, it is the breath of God that brings Adam to life: "And God formed man of the dust of the ground and breathed into his nostrils the breath of life, and man became a living soul" (Genesis 2:7). For the Essenes, the entry into the Kingdom of Heaven was between inspiration and expiration, between breaths.

In traditional Chinese medicine, the *chi* energy has spiritual, as well as biological and physical dimensions. It means the cosmic essence and the energy of life as well as the natural air we breathe with our lungs. In Japan, the corresponding word is *ki*. *Ki* plays an extremely important role in spiritual practice and in martial arts.

In Western science, breathing was stripped of its sacred dimensions and is seen only as an important physiological function essential for life. In addition, the physical and psychological manifestations that accompany various respiratory maneuvers, such as hyperventilation, withholding of breath, or special attention paid to breathing, have all been pathologized. Although in the West, the sacred dimensions of breathing have been rejected and discredited by science, many researchers emphasize its critical role in medicine.

One of the most dedicated researchers of the relationship between breathing and various medical conditions, Fried, wrote a book called *The Hyperventilation Syndrome*.[11] According to him, physicians should pay much more attention to breathing. Stressed and distressed human beings hyperventilate. Hyperventilation can be found in 50-70% of medical complaints and 90% of hypertensions are anticipated by disruptions of breathing. Faulty breathing can be seen as the etiological common pathway for many problems.

It is well known in academic circles that hyperventilation is closely related to anxiety, but there is no agreement as to whether hyperventilation causes anxiety or *vice versa*; it is clearly a problem of 'the chicken and the egg.' Anxiety-prone people hyperventilate when they are exposed to stress; panic sufferers often have a respiratory alkalosis. According to Goldberg,[12] "hyperventilation is one aspect of the anxiety reaction and it causes psychosomatic symptoms." Hyperventilation plays an important role in all anxiety disorders and possibly emotional disorders in general. Christie called hysteria and anxiety neurosis respiratory neuroses.'[13]

These observations disprove the original idea expressed in W. B. Cannon's book, *The Wisdom of the Body*.[14] Cannon believed that breathing, being so fundamental to life, is so heavily protected by homeostatic mechanisms that it can take care of itself. It has since become clear that, in spite of its apparent automaticity, breathing is not excluded from the influence of many physiopathological and psychological processes that can interfere with it. In turn, abnormalities of the breathing patterns can cause physiological and psychological problems.

The hyperventilation syndrome

About 10-15% of people spontaneously hyperventilate. Traditional handbooks of physiology describe the 'hyperventilation syndrome,' considered to be a mandatory and stereotypical physiological reaction to faster breathing. It involves the so called 'carpopedal spasms' (tetany of the hands and feet), coldness of the feet, sweating, and general hyperexcitability of neurons. This is associated with neurological changes that can be objectively detected. Here belongs Chvostek's reflex (hyperexcitability of facial muscles) and Trousseau's

reflex (spasm of muscles in the forearm and hand after compression of the brachial artery with a tourniquet).

However, there is much lack of clarity in the medical literature in regard to the hyperventilation syndrome. Fried, who conducted systematic research of the effects of rapid breathing, pointed out that the stereotypical reaction described in the handbooks of respiratory physiology is in sharp contrast with clinical reports about the unusually broad range of phenomena that can occur in hyperventilating persons. These vary widely from person to person and also from episode to episode.

These symptoms include tetany, dizziness, vertigo, vasospasm, seizure-like activities, chest pains, muscular tensions and pains, headaches, syncope, various neuromuscular disorders, anxiety states, and a rich spectrum of emotions. The range of possible reactions to faster breathing is so great that hyperventilating patients have been called 'clients with the fat folder syndrome' (Lum), because they make frequent fruitless visits to physicians. The following is a list of symptoms that have been attributed to faster breathing by traditionally trained clinicians.

1. Cardiovascular system symptoms

Hyperventilation has effects on the vessels; it can increase the blood flow in the forearms and other large muscles and decrease it in the hands, feet, brain, and intestines. Slow breathing is used in the treatment of high blood pressure and tends to lower it, but occasionally hyperventilation can cause a drop of blood pressure and syncope (blacking out, unconsciousness). This vasodepressor effect can be caused by many other factors, including vaginal distention during a gynecological examination. This is seen by traditional medicine as paradoxical and mysterious, since most of the people who have a syncope do not have any heart problems.

Hyperventilation can affect the heart and cause sinus tachycardia, increased cardiac output, and slight shortening of the conduction time. Occasionally, hyperventilation can mimic a heart problem and trigger chest pains and pseudoangina (Prinzmetal). Changes on the ECG are transitory and fully reversible; their interpretation varies.

2. Muscular apparatus in hyperventilation

Many people respond to hyperventilation by tetany. Traditional medical literature emphasizes tetany of hands and feet ('carpopedal spasms') and considers them to be a standard and mandatory reaction to rapid breathing. However, these spasms can occur in any muscle of the body or group of muscles.

3. Metabolism symptoms

Fast breathing causes changes in the acidity/alkalinity balance in the organism (pH). Faster elimination of carbon dioxide (CO_2), which is acidic, tends to induce alkalosis of the pH of the blood. The capacity of the blood pigment hemoglobin depends on the pH of the blood; it binds more oxygen in an acidic milieu and less in an alkaline milieu. This is a compensatory homeostatic mechanism that guarantees effective oxygen supply during

physical exertion, which is typically associated with increased production of acidic metabolic products. The alkalosis during rapid breathing thus leads to reduced oxygen transfer to the tissues.

4. Central nervous system symptoms

Hyperventilation can cause hyperexcitability of the neurons and change the functioning of the cortex; some cortical cells depolarize, others hyperpolarize. There can be a shift to anerobic metabolism with increase of lactic acid (a mechanism that plays an important role during biological birth) and a decrease in neurotransmitters. These changes are related to lowered oxygen supply to the tissues resulting from hypocapnia (decreased blood level of carbon dioxide) and vasoconstriction.

On the electroencephalogram (EEG) hyperventilation leads to decreased frequency and higher voltage. Typical spikes and waves in epileptics can be increased threefold in the resting EEG. This observation is used in medicine for diagnostic purposes; if there is a suspicion of epilepsy, clients are asked to hyperventilate during EEG examination to accentuate the electrophysiological manifestations of epilepsy. Self-regulation of breathing has been suggested as a remedial measure in epileptic patients.

In normal subjects, hyperventilation increases the incidence of alpha waves, in psychiatric and epileptic patients it decreases it; in epileptics it decreases beta. Psychiatric patients may or may not show elevation of theta. Like in the LSD studies, this might be correlated with the activated material and the resulting psychological state, rather than some permanent psycho-physiological characteristics of these groups.

LSD does not have a predictable effect on the EEG and the changes it causes are independent of the dosage and stage of the session. Experiential episodes characterized by emotional turmoil and psychomotor excitement are associated with faster brain waves, while episodes of relaxation and inner peace typically show slow brain waves. Clearly, we need new EEG studies that are not based on the current simplistic mechanical model and take into consideration the complex psychosomatic variables governing the changes during rapid breathing.

Hyperventilation and medical diagnosis

Traditionally, hyperventilation is seen as a symptom, rather than a contributing factor. Clinicians usually do not believe that something as simple as hyperventilation can cause such intense and variegated changes; they tend to look for other causes. According to Huey and Sechrest, who studied 150 hyperventilating patients, hyperventilation can mimic the following medical diagnoses (these were actually given originally to these patients):[15]

1. Cardiovascular: coronary heart disease, rheumatic heart disease, hypertensive heart disease, congenital heart disease, acute rheumatic fever, cor pulmonale, paroxysmal auricular tachycardia

2. Respiratory: asthma, emphysema, respiratory tract infection

3. Gastrointestinal: cardiospasm, peptic ulcer, cholecystitis, cholelithiasis (bile stone)

4. Musculoskeletal: fibrosis, myositis, arthritis

5.Endocrine: islet cell tumor of the pancreas, pheochromocytoma, hyperthroidism, insulin reaction, 'glands'

6. Immunobiological: allergic reaction, eczema

7. Neurological: epilepsy, brain tumor, poliomyelitis, cerebrovascular accidents

8. Psychiatric: neurosis, 'nerves,' 'functional disorder'

Hyperventilation and psychiatric patients

Spontaneous episodes of hyperventilation often occur in neurotics, particularly hysterical patients. Freud described in a number of case histories the extreme feeling of suffocation and marked respiratory distress that occurs in panic attacks. That is why he entertained for some time the idea that the birth trauma, being associated with suffocation, could be the source and prototype of all future anxieties. Klein called the feelings of suffocation that accompany panic attacks 'false suffocation alarm'.[16] This panic cannot be alleviated by breathing 5% carbon dioxide, which should prevent any respiratory alkalosis.

It has been noted that in psychiatric patients the symptoms induced by rapid breathing are more intense, colorful, and variegated. Patients with abnormalities of the central nervous system show a greater diversity of symptoms and persons suffering from pain have a lower threshold for hyperventilation. In psychiatric patients, hyperventilation tends to produce what has been described as 'an astonishing array of sensory, emotional, and psychosomatic symptoms.'

This long list includes dizziness, faintness, apprehension, depression, anxiety, panic, phobia, chest pain, muscle spasms, various physical sensations, headaches, tremors, twitches, blurred vision, nausea, vomiting, 'lump in the throat,' and many others. These symptoms are not explainable in traditional medical terms and can mimic a variety of organic diseases. Fried also found that the mean breathing rate of control groups is lower (12 breaths per minute) than of psychiatric patients (17 per minute) and seizure patients (17 per minute).

Hyperventilation and Holotropic Breathwork

Hyperventilation tends to aggravate many symptoms and disorders, such as Raynaud's disease, migraine headache, angina pectoris, and the panic anxiety syndrome. Fried therefore suggested an approach to these disorders that teaches these clients slower breathing as a 'therapeutic measure'. This

is exactly opposite to the practice of the Holotropic Breathwork based on the observation that continuation of hyperventilation can resolve the problem by exteriorizing it fully and bringing it into consciousness. Psychiatry treats the hyperventilation syndrome by interventions aimed at calming the patient, reducing alkalosis, and increasing the CO_2 content in the respiratory pathways. This is achieved by injections of tranquilizers and intravenous calcium and by placing a paper bag over the mouth.

The practitioners of Holotropic Breathwork have a unique opportunity to study the psychological and somatic effects of rapid breathing, since they observe such changes daily *in statu nascendi*. In this context, only a small proportion of the clients experience a response that the handbooks of respiratory physiology describe as typical and in a sense mandatory (carpopedal spasms, coldness of the feet, *etc.*) Instead, the observations from this work show that faster breathing produces an extraordinarily rich spectrum of emotional and psychosomatic symptoms. They thus support Fried's critique of a simplistic understanding of the hyperventilation syndrome.

For Fried, who views this 'amazing array of symptoms' from the point of view of traditional medicine, "it remains a mystery how such a simple physiological function as breathing can produce such a broad spectrum of symptoms". The practice of Holotropic Breathwork provides deep insights into the dynamics of the 'hyperventilation syndrome' and offers a simple solution to this 'mystery'. It shows that the richness of the response to faster breathing cannot be understood in simple physiological terms, because it is a complex psychosomatic phenomenon that reflects the entire psychobiological and even spiritual history of the individual.

The symptoms induced by rapid breathing can appear in all areas of the body and in all possible combinations. Systematic study of these reactions shows that they represent intensification of pre-existing psychosomatic symptoms or exteriorization of various latent symptoms. Continuation of accelerated breathing makes it possible to trace these symptoms to their sources in the unconscious — to memories of traumatic biographical events, biological birth, prenatal traumas, and even various transpersonal gestalts (*e.g.* phylogenetic memories, past life experiences, and archetypal motifs).

This is true even for some extreme physical phenomena that can occasionally be observed during Holotropic Breathwork, such as seizure-like activity, apnea, cyanosis, asthmatic attacks, or various dramatic skin manifestations. These phenomena represent exteriorization of historically determined imprints that are associated with specific events, such as near-drowning episodes, serious accidents, operations, childhood diphtheria, whooping cough, biological birth, prenatal crises, or past-life experiences. As precarious as they might appear, they are not dangerous if we are working with physically healthy people, who can tolerate the emotional and physical stress involved in such reliving. Naturally, it is important to respect the contraindications for deep experiential work and screen out persons with serious problems, particularly serious cardiovascular disorders.

Another surprising but consistent finding of therapeutic work involving rapid breathing is that the symptoms initially keep increasing in intensity, but continued breathing actually brings about their resolution and permanent disappearance. This fact is in direct conflict with the assumption that the psychosomatic symptoms are a mandatory physiochemical response to hyperventilation. Permanent disappearance of these symptoms after full emergence of the unconscious material with which they are connected shows that they are psychodynamic in nature and not simply physiological manifestations. We see in our work many people who do not develop any tensions during several hours of intense breathing. This type of reaction increases with the number of holotropic sessions and eventually becomes a rule rather than an exception.

Even the vasoconstriction occurring in various parts of the body as a result of faster breathing is not an invariable and mandatory effect of hyperventilation. The observations from Holotropic Breathwork show that bioenergetic blockage in a certain area typically leads to vasoconstriction. The origin of this blockage can be psychological or physical traumas from postnatal history, the trauma of birth, or transpersonal matrices. Faster breathing tends to bring the unconscious material to the surface and release this blockage after its temporary intensification; this is typically followed by opening of circulation in the afflicted area.

An extreme example is Raynaud's disease, a severe disturbance of peripheral circulation in the hands associated with feelings of cold and even trophic changes of the skin. I have had the opportunity to work with a number of persons suffering from this condition who were able to heal this disorder by doing Holotropic Breathwork. In their initial Holotropic sessions, they all showed extreme and painful tetany in their hands and forearms. With continued hyperventilation, these cramps suddenly released and were replaced by experiences of powerful flow of warm energy and tangible energy fields enveloping the hands like giant gloves. After these experiences, the peripheral circulation remained permanently opened.

I have also repeatedly observed that the same mechanism can play a critical role in many chronic infections, such as sinusitis, pharyngitis, tonsillitis, bronchitis, or cystitis, which are traditionally considered to be purely medical problems. These conditions are usually caused by bacteria which are normal inhabitants of those areas (Pneumococcus, Escherichia coli), not by invasion of vicious and exotic microbes. The real cause of these conditions is the reduced vitality of the tissues due to bioenergetic blockage and the ensuing inadequate blood flow, not the presence of the bacteria.

These tissues cannot protect themselves against the bacteria, because the bioenergetic blockage of these areas causes vasoconstriction. This means inadequate presence of leucocytes, lymphocytes, antibodies, and other factors that play an important role in immunological defense. If we succeed in releasing the bioenergetic blockage, the circulation opens up and these 'chronic infections' clear as if by magic. It is also conceivable that the same mechanism is involved in the genesis of peptic or duodenal ulcers and ulcerous colitis. The vitality of the gastric or intestinal mucous membranes that do not have

good circulation might be compromised to such an extent that they cannot protect themselves against the effects of hydrochloric acid and digestive enzymes.

These observations show that in many instances disease is related to blocked emotional or physical energy and resulting fragmentation, while healthy functioning is associated with a free flow of energy and wholeness. This is related to one aspect of the term 'holotropic' which literally means 'moving toward wholeness' or 'aiming for wholeness.' These findings are consistent with the basic principles of Chinese medicine and of homeopathy. They are also related to the modern concept of 'energy medicine.' The representatives of this orientation assert that medicine would become much more effective if it complemented or even replaced its organ-pathological strategy with an approach based on understanding and use of the bioenergetic dynamics of the body.

Conclusions

The experiences and observations from Holotropic Breathwork show that the traditional concept of the 'hyperventilation syndrome' is obsolete and has to be revised. The tensions that develop as a result of rapid breathing do not have to involve the hands and feet, but can occur anywhere in the body. Continued breathing typically leads to culmination and resolution of such tensions. They can also be easily removed by emotional and physical abreaction. Repeated sessions tend to eliminate the occurrence of these tensions. Some people can breathe for hours without showing any signs of tension; they actually become progressively more relaxed and ecstatic.

What seems to happen is that faster breathing creates a biochemical situation in the body that facilitates emergence of old emotional and physical tensions associated with unresolved psychological and physical traumas. The fact that during rapid breathing symptoms surface and become manifest is not a pathological phenomenon, as it is traditionally understood. This situation actually represents a unique opportunity for healing. What emerges under these circumstances is unconscious material with strong emotional charge that is most ready for processing. This understanding of the symptoms of hyperventilation accounts for the enormous inter- and intra-individual variability of the responses to hyperventilation. That seems to be analogous to the situation concerning the extraordinary richness and variability of the experiential content of psychedelic sessions.

In the light of the observations from Holotropic Breathwork, spontaneous episodes of hyperventilation, occurring in psychiatric patients and normal population, should be seen as attempts of the organism to heal itself and should be supported rather than suppressed. With skillful support and guidance, the emergence of symptoms during hyperventilation can result in healing of emotional and psychosomatic problems, positive personality transformation, and consciousness evolution. Conversely, the current practice of suppressing the symptoms can be seen as interference with an important spontaneous healing process involving the psyche and of the body.

Endnotes

[1] Alexander, F. (1950). *Psychosomatic medicine.* New York: W. W. Norton.

[2] Mirsky, I. A. (1958). Physiological, psychological, and social determinants in the etiology of duodenal ulcer. *Amer. J. Dig.* Dis. 3:285.

[3] Dunbar, H. F. (1954). *Emotions and bodily changes.* New York: Columbia University Press.

[4] Wolff, S. and Wolff, H. (1947). *Human gastric function.* London: Oxford University Press.

[5] Mahl, G. F. (1949). The effect of chronic fear on gastric secretion. *Psychosomatic medicine.* 11:30.

[6] Selye H. (1950). *The physiology and pathology of exposure to stress.* Montreal: Acta.

[7] Reich, W. (1949). *Character analysis.* New York: Noonday Press.

[8] Reich, W. (1970). *The mass psychology of fascism.* New York: Simon and Schuster.

[9] Hubbard, L. R. (1950). *Dianetics: The modern science of mental health.* East Grinstead, Sussex, England.

[10] Brown, I. (1990). Psychological trauma, or unexperienced experience. *Re-Vision Journal.12*(4)21-34.

[11] Fried, R. (1982). *The hyperventilation syndrome: Research and clinical treatment.* Johns Hopkins Series in Contemporary Medicine and Public Health.

[12] Goldberg, G. J. (1958). Psychiatric aspects of hyperventilation. *South African Med. J 32*:447-49.

[13] Christie, R. V. (1935). Some types of respiration in neuroses. *Quart J Med 16*:427-32.

[14] Cannon, W.B. (1932). *Wisdom of the body.* New York: Norton.

[15] Huey, S. R. and Sechrest, L. (1981). *Hyperventilation syndrome and psychopathology.* Center for Research on the Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan (manuscript).

[16] Klein, D. F., Zitrin, C. M., and Woerner, M.(1978.) Antidepressants, anxiety, panic, and phobia. In *Psychopharmacology: A generation of progress.* (M. A. Lipton. A. DiMascio & K. F. Killiam, Eds.). New York: Raven Press.