

Functionalism as It Relates to the Autonomic Nervous System
Chester M. Raphael, M.D., July 1986

I must first inform you that I am not an expert on the autonomic nervous system. I justify my presence here simply on the fact that I am conscious of and apply myself to its workings to a far greater effect than you would expect from a physician in the daily practice of medicine. It is based on a functional point of view that is not generally known, although it is inevitable that we all apply it instinctively to influence our life functions and activities whether in health or disease. The homeostasis that exists in the functioning of the life apparatus tends to make us feel rather complacent about its workings, particularly because there is little overt pathology that can be directly attributed to it, although we are dealing with the consequences of its dysfunctions all the time, without recognizing their origin. As one whose professional interest has been in emotional pathology, I am accustomed to investigating and treating dysfunction that exists without evidence of overt structural lesions which the average physician ignores or treats superficially. Today, there is probably more interest in these subtle indications of disease because the drug industry has begun to find it so profitable to relieve emotional distress.

I have known and felt the silence about the work of Wilhelm Reich, my teacher, on which I will base what I have to say, for over forty years and so I was pleased that I might be able to address a group of osteopathic physicians after I read several articles by Irwin Korr that your program coordinator, Ken Baker, had sent me. From what I read, I began to think that osteopathy reveals an approach to disease that might be to some extent compatible with mine because Korr makes the point, in comparing allopathic with osteopathic medicine that “only osteopathy is definable because it is guided by a broad and unifying set of principles, and on that basis, could be referred to as a system.” Then, when he states that “the endogenous diseases, because they begin asymptotically and may be well-advanced, before subjective complaints of sufficient intensity may arise, necessitate a search for [what he refers to as] silent, insidious fifth-column disorders,” I felt that perhaps we shared the idea of a dynamic approach to the understanding of disease, a functional one, which I should first define.

The term “functional” is applicable to every aspect of the work of Wilhelm Reich. It is a term that I would like to define as he understood it and then show what significance it has for an understanding of the functioning of the autonomic nervous system, one that differs from the traditional understanding of it.

In mechanistic medicine, the term “functional” has often been inappropriately used, usually referring to the absence of a demonstrable lesion, with the implication that there is nothing wrong and that therefore the complaint is “imaginary.”

Functionalism as Reich used the term, I would like you to understand, is not a philosophy. Philosophy, according to its dictionary definition, a “search for truth through logical reasoning rather than factual observation” and, therefore, as Bertrand Russell commented: “Every advance in knowledge robs philosophy of some problems which formerly it had.” Thus, functionalism, as Reich applies the term, cannot be called a philosophy because it is based on observation and demonstrable fact, not mere necessity or speculation. It is a way of thinking of a person who observes nature directly, and is able to rely on his observations. Not so the person whose rigidity and narrow outlook restricts his field of vision and makes it difficult for him to trust his ability to really observe what he sees, compelling him instead to rely on controlled experimentation in an artificial environment. It is what is alive in nature that attracts the functionalist, not motionless substance, the stuff that absorbs the attention of the mechanist. The former investigates life from the standpoint of its living quality and does not interfere with it, as is characteristic of the mechanist of science.

More specifically, the mechanist attempts to solve the problems he is investigating by isolating and immobilizing the objects of his research before examining them. He cannot operate comfortably with object material that is alive and moving. He is compelled, in one way or another, to impede, or dissect what he is studying. In laboratory medicine, for example, the usual procedure is to fix and stain tissue before it is examined. The functional researcher, on the other hand, literally examines tissues in the living state so that he can be confident that his findings are not based on artifact. It is the movement of substance, not substance itself that interests him. Restricted by his own lack of freedom of movement, the mechanist tends to impose this quality on everything he investigates. In so doing, he tends to concentrate more and more upon less and less. It is sometimes said that a specialist is a person who knows more and more about less and less until he knows everything about

nothing. Of course, this is not entirely fair, and should not demean him, for he is important and even essential in many areas of research. In fact, we cannot help but be impressed with the detailed knowledge and skill he displays in his work. But, as the saying goes, he “does not see the forest for the trees” and as a consequence, life's living quality is ignored.

Let me bring what I am saying closer to home and refer to something about which many of us are familiar. In the course of a clinical examination, a circumscribed lesion is discovered. All attention is directed toward removing or eradicating it in one way or another. Having done so, the problem is presumed to have been solved. In other words, for the mechanistically oriented physician only the lesion is important; there is little or no interest in the source of the lesion. The functionally oriented physician, on the other hand, is always interested in the underlying process that led to the lesion and will initiate a deeper inquiry into its origin, or, as Korr would have it, he will search for the “fifth column disorders.” The osteopath, I understand, employs a technique of palpitation and discovers a lesion that presumably involves the musculoskeletal system, which he views as a precursor of a potentially irreversible product of a disease process that he will try to prevent by manipulative therapy. Up to this point, he is proceeding functionally, i.e., development is still involved. But, if he goes no further, if he does not ask himself: “Where did the osteopathic lesion come from?,” if he looks upon it as if it simply “came out of the blue,” he is thinking mechanistically, for he is merely interested in a palpable local feature of an unaccountable process, just as the allopath only becomes interested when he observes a cancer tumor, for example, the origin of which he rarely stops to ponder. Of course, in this instance, in the case of cancer, he is compelled, out of necessity, not choice, to investigate further, because the removal of the tumor does not eliminate its tendency to invade surrounding tissue and to metastasize, therefore, its removal has availed him little. His occasionally arrogant assumption that he has “gotten it all out,” is evidence of how little understanding or curiosity he has about the developmental feature of the disease. His examination of the fixed, stained, biopsy specimen reveals an aberrant cell but cannot explain its origin. It is already a finished product.

One more example of the difference between mechanistic and functional I thinking about disease.

In an article entitled, "The Sympathetic Nervous System as Mediator Between the Somatic and Supportive Processes," Korr thinks functionally and make the point that, while the manipulation of a palpable lesion is a means of interrupting a disease process, there is no reason for complacency; that instead it is essential to search for a fundamental factor on which an understanding of a disease can be based. That, indeed, is a functional attitude. For him, however, that factor, a priori, turns out to be the musculoskeletal system, which he refers to as the "primary machinery of life" and answers, to his satisfaction, the questions: "What does human life consist of?" and "What does man do?" Unfortunately, the answer may serve to differentiate man from other living creatures, but it does not supply a basic principle because there are living organisms that do not have a musculoskeletal system and yet move. The principle of movement that applies to all organisms endowed with a musculoskeletal system should apply as well to those, for example, the ameba, that do not have one. By emphasizing the complex morphology of the multicellular organisms as "the primary machinery of life," he gives substance priority over life's living quality, and therefore does not provide the answer to a more fundamental question: "What makes it move?" The moving, functional quality of life is thus replaced by a stationary materialistic one which can only lead to a mechanistic dead end—the question, "What is life?," remaining unanswered. Such a viewpoint that conceives of matter as the primary source of life is not without its advocates among basic scientists. In fact, most scientists have such a materialistic prejudice about life and the universe. They are always finding smaller and smaller particles. Very few are willing to conceive of a force in nature that is primary and they must, therefore, if need be, settle for a creator, a metaphysical entity with which to explain the living process. Reich's discovery of a demonstrable, primordial energy does not seem to have made much impact. The reason lies in the willingness of the mechanist to remain satisfied with the idea of substance as his final resting point in his search for a fundamental theory. If movement can be observed to exist without structure, then structure itself—the musculoskeletal, for example—cannot be "the primary machinery of life." But Korr's question, despite his inadequate answer, seems to keep alive the possibility of a dialogue, which the mechanist, in his profoundly mechanistic world, resists. One's reception of what Reich has to say depends, to a great extent, on a characterological readiness to view life from the standpoint of its living quality, not its structure.

I have already warned that it is not a matter of philosophy but a difference in the investigative approach to natural phenomena.

On the basis of his clinical observation and microscopic study of living substance at high magnifications, Reich ascertained that all living matter pulsates, i.e., that it expands and contracts spontaneously. It is not my intention, in this presentation, to enter into a discussion as to whether this represents an electrical phenomenon (as is generally assumed) or evidence of a new universal energy (as he discovered it to be) that functions in the living organism as a biological energy. Furthermore, in the time that we are here, I will have to take some leaps in order to arrive at my goal of explaining how functionalism applies to the autonomic nervous system. I can only hope that in doing so, I will still be able to land on my feet. To you, in order to bridge the gaps and give a more accurate picture of Reich's theory, I would earnestly recommend his writings.

If living matter pulsates, then perhaps it can be seen (if we are not offended by the comparison) that there is no fundamental functional difference between the human organism and every other living creature—between the one-celled amoeba, for example, and a multicellular organism. Pulsation is the basic functioning principle in everything that lives—every cell, every organ, every organ system, and the living organism as a whole. It can easily be seen in the amoeba. It is evident in the beat of the heart, and in all the other organs, varying with their shape and in the organism as a whole in the orgasmic convulsion.

Implicit in this basic characteristic of the living is the fact that every organ, in a multicellular organism, functions independently and, at the same time, in harmony with every other organ. The organism, as a whole, thus “forms a natural cooperative of equally important organs of different functions.” In such an arrangement, the individual organs are “self-active living creatures, equipped with their own sensations and functions, the evidence of which can be seen, for example, in and muscles....Sensations in these organs are not tied, as Reich points out, to sensory nerve endings. All plasmatic matter perceives itself with or without sensory nerves. The amoeba, for example, has no sensory nerves and yet it perceives.”

If the organs in the living system function independently and, at the same time, in harmony with each other, then there is no need to assume that there is a hierarchy of organs that are controlled by the brain and the nerves of the spinal cord as mechanists conceive them

to be. The living system, being spontaneously mobile, does not require a “higher” center for the organ or its movement. Here is Reich’s impression of the mechanistic viewpoint. “For mechanism,” he says, “there is a hierarchy of organs in the organism. As the ‘highest’ developmental product, the brain is, together with the nerve apparatus of the spinal cord, the ‘director’ of the whole organism. Mechanism assumes a center from which all impulses are sent out which move the organs. Every muscle has, connected by its respective nerves, its own center in the brain or thalamus. From where the brain receives its assignments remains a riddle. The organs are the good underlings of the brain. The nerves are the telegraph wires. The coordination of the movement of the organism in this description remains veiled and mysterious....Mechanistic thinking,” Reich notes, “is clearly modeled after the structure of the social patriarchy when it sees the master in the brain, the telegraph wires in the nerves and the executing subjects in the organs. And behind the brain ‘works God’ or ‘reason’ or ‘purpose’.”

Incidentally, the artificial methods of eliciting responses to stimuli in the localizing research on the brain raises questions about their validity in identifying the areas presumably responsible for the origin of the impulses and their distribution along neural pathways to the various organs. It is known, for example, “that stimulation of a lesion in the hypothalamus often has profound effects on emotional behavior of animals or human beings.” Can we assume from that that the impulses for such behavior actually originate in those areas? As specific as the motor output pathways for the vegetative functions of the body are supposed to be, it is nevertheless acknowledged that “the areas that cause specific activities are not nearly so discrete nor so accurately localized” as one might think. This is according to Guyton, the author of *The Textbook of Medical Physiology*. In fact, he states, “behavior is a function of the entire nervous system, not of any particular portion.” According to Reich, “electrical responses can stimulate or accompany phenomena of the life function. They can change, disrupt or promote the life process but they cannot bring them about.” Reliable conclusions can only be derived from natural forms of stimulation, not artificial ones that are used in the mechanistic experiment. “The brain itself,” Reich went on to say, “is merely a specially designed apparatus for implementing and inhibiting the general vegetative function. The irrefutable fact that life can function biologically long before a brain is developed is proof of the assumption the vegetative function is phylogenetically older than the cerebral function. It

is necessary to assume that the functions of the brain also depend on the general vegetative function.”

Before discussing the autonomic system from a functional standpoint, I would like to try to make clear what, in my opinion, it is not. Korr provided me with an opportunity to do that. In his article, to which I previously referred, “The sympathetic nervous system as mediator between the somatic and supportive processes,” he maintains that the musculoskeletal system is the “primary machinery of life,” then refers to the viscera as merely supportive and, finally, the sympathetic nervous system as mediator between-the two. In his hierarchical arrangement, he conceives of the viscera as a secondary system and then establishes the sympathetic nervous system, in response to commands from higher centers, as superceding the parasympathetic system in importance. Such a perspective of the living, regarding what is more or less important in a system in which the parts function independently and yet in harmony with each other, is totally untenable and can only be derived from a mechanistic view of the living organism. In the critical balance of functions that characterizes life, the idea, as he asserts, that the sympathetic nervous system is in complete control and that the parasympathetic has received undue emphasis, considering that it has a more limited anatomical distribution and that it serves, as he claims, different areas of the organism and different functions, is so mechanistic as to suggest that he might be able to put the parts together himself and make them work. He does not wish “to disparage the role of the parasympathetic nervous system in the health and vigor of the musculoskeletal system,” he says. “But,” to continue, “the point conventionally receives emphasis enough and what we need now is to put the sympathetic system in proper perspective as the chief mediator, the chief timer of visceral activity and its responses to peripheral and external influences.” This is the epitome of mechanistic thinking. By viewing the two systems separate and independent of each other, it would be possible to compare the relative importance of one with the other. But from the standpoint of the overall function of the living organism, such an antitheses of the parts without a recognition of their unity is not only incomprehensible, it is inconceivable.

So much for my opinion about what the autonomic nervous system is not.

Regarding Reich’s position on it, I would like first to recall something about my own familiarization with it as all of us in medicine have experienced. When I was in medical school, I had to learn the innervations of the sympathetic and parasympathetic systems by

rote. There was no rule to follow because they did one thing or another in a seemingly arbitrary fashion. The various organs of the body were made to contract one time by the parasympathetic, another time by the sympathetic for no apparent reason and I had to memorize what nerves stimulated or inhibited which organ separately. Apparently, matters have not changed for, according to Guyton, “There is no generalization one can use to explain whether sympathetic or parasympathetic stimulation will cause excitation or inhibition of a particular organ. Therefore, to understand sympathetic and parasympathetic function one must learn the functions of the two nervous systems individually.”

Not so, said Reich many years ago when he provided a clarification of the hodgepodge that still exists regarding the interactions of both systems.

Using the amoeba as his living physiological model, Reich concluded that “impulses and sensations are not created by nerves but only transmitted by them. They are biological manifestations of the organism as a whole that are mediated through the antithetical functions of the two divisions of the autonomic nervous system—the parasympathetic and sympathetic—which, despite their complicated anatomical distribution, can be reduced to the function of expansion in the case of the parasympathetic and contraction in the case of the sympathetic.”

In his physiological investigations on sexuality and anxiety, Reich made the following observations:

On the psychic level, biological expansion is experienced as pleasure; contraction is experienced as unpleasure. On the instinctual level, expansion is experienced as sexual excitation and contraction is experienced as anxiety. Finally, on the physiological level, expansion corresponds to a stimulation of the parasympathetic and contraction corresponds to a stimulation of the sympathetic.

Let us now see whether this applies to the functioning of the autonomic nervous system and the functioning of the whole organism.

When the parasympathetic is stimulated, the peripheral vessels dilate, the skin reddens, the heart slows, the pupil contracts, salivation increases, the penis becomes erect and the vaginal secretions increase. Here, it can be seen, the parasympathetic represents the direction of expansion or, in more descriptive terms, “out of the self—toward the world.”

This is exactly what happens in pleasure or sexual excitement. On this basis, we are justified in concluding that a functional identity exists between sexuality and the parasympathetic.

When the sympathetic is stimulated, the peripheral blood vessels contract, the skin becomes pale, the heart quickens, the pupil dilates, salivation decreases, the penis shrinks and the vaginal secretions lessen. Here, we can see, the sympathetic represents the direction of contraction, i.e., “away from the world—back into the self.” This is what happens in a state of anxiety. And so we can conclude that a functional identity exists between the sympathetic nervous system and anxiety.

Keeping the functions of expansion and contraction of the whole organism in mind, i.e., of “out toward the world” and “in toward the self,” and that the parasympathetic expands or dilates and the sympathetic contracts we now ask ourselves how each individual organ would respond in pleasure and anxiety and which division of the autonomic system would be involved. Proceeding this way, we find that a lawfulness does indeed exist in the innervation of the various organs: “The parasympathetic stimulates the organs when the whole organism is in a state of pleasurable expansion, whereas the sympathetic stimulates the organs when the whole organism is in a state of anxious contraction.”

Once again, this is the picture; the living organism pulsates, i.e., it expands and contracts spontaneously. In pleasure, the whole organism reaches out, and the parasympathetic is stimulated, —almost instantly, by the way, in a matter of a few seconds, I have learned. In anxiety, the whole organism contracts and the sympathetic is thereby stimulated. It is apparent, in these reactions that it is not the excitation of nerves that produces them.; it is an impulse of the entire organism that is communicated to the nerves that corresponds to the direction and function of the impulse.

A significant consideration in all of this is that we cannot view the functioning of the autonomic system as if it consists of two separate parts, functioning independently of each other, as Korr claimed, you may recall. He referred to the parasympathetic and sympathetic as “totally different—with different origins and functional organization and distribution.” These were his exact words. Not only that, he claimed that it is the sympathetic system that is in control. Reich, on the other hand, had long ago concluded that the sympathetic and parasympathetic are two parts of a uniform system that can function in two opposite directions from a middle position of vegetative equilibrium. “It is able to move in the

direction toward the world, i.e., to stretch or to retreat into the self, i.e., to contract. It can also swing from one direction to the other or remain fixed in either of the extreme states...Putting it in somewhat simplified terms," he said, "the state of vegetative equilibrium is one where neither the positions of expansion nor contraction have become fixed. Vagotonia would correspond to a fixed state of expansion and sympatheticotonia to a fixed state of contraction."

All of this strongly suggested to Reich that the generally accepted mechanistic notion that the autonomic nerves merely transmitted impulses but are themselves rigid could not be correct. To explain such symptoms as "tearing" and "pulling" pains that often occur in cancer, for example, the autonomic nervous system would have to be contractile. He found proof of this in examining the autonomic system of the meal worm. Under the microscope, he observed that the nerve fibers of its autonomic ganglia expanded and contracted and indeed moved independently of the movements of the entire body. The impulses manifest themselves first in the movements of the autonomic nerves and are transmitted secondarily to the locomotor organs. He said that this "might sound revolutionary and strange, but in actual fact it represents a banal conclusion that had to be drawn from the functions of pulsation in the organism...In the metazoan," he concluded, "the contracting and expanding amoeba continues to exist in the form of the contracting and expanding autonomic nervous system. This autonomic system is nothing but organized contractile plasma. Thus, the emotional, vegetative, autonomic movement is the immediate expression of the plasma current. The prevalent concept of the rigidity of the autonomic nerves is incompatible with every single phenomenon of biophysical functioning, such as pleasure, anxiety, tension, relaxation and the sensations of pressure, pulling, pain etc. On the other hand, the contractibility of the autonomic nervous system, which forms a functional and histological unity (syncytium) explains in a simple manner our subjective plasmatic sensations. What we experience as pleasure is an expansion of our organism. The autonomic nerves, in pleasure, actually stretch out toward the world; the whole organism is in a state of vagotonic expansion. In anxiety on the other hand, we feel a crawling back into the self, a shrinking and tightness. What we experience here is the actual process of contraction in the autonomic nervous system."

This is, in essence, Reich's functional view of the living process in general and the autonomic nervous system in particular.

Finally, I should like to point out to you how this view of the living is reflected in clinical work. So much of the living quality of a patient goes unrecognized in evaluating him. The mechanistic evaluation may be ever so detailed while the patient himself is ignored. The functionalist can see dysfunction that the mechanist who is only interested in structural change, overlooks or minimizes. This oversight is not merely a matter of a lack of training. The character structure of the observer plays a large part in determining what he sees and how important he considers it to be. The greater the rigidity of the observer, the more limited is his capacity for direct observation. He quickly compensates for this by resorting to tests that are readily available and upon which he prefers to rely. In this era of specialization, this indifference to the living quality of the patient is more striking than it has ever been. In recent times, the patient is impressed with the technology that surrounds him, but, in many instances, sooner or later, disillusionment sets in and more or less subtle expressions of disappointment are displayed. Even, in what is referred to as holistic medicine, all the part functions may be meticulously examined, but the patient as a whole is ignored.

It is most difficult to put into words what takes place in the functional examination of a patient. For the circumscribed mechanochemical studies words are readily available. Not so the living process. On occasion, Reich would say that, in reality, he had discovered only one thing and he would open and close his fist to symbolize the spontaneous pulsatory quality that characterizes the living. The therapist will react to the degree of aliveness of the patient and that will determine, in large measure, how to proceed in the treatment of him. I am not referring here to the voluntary movements of the patient but to his involuntary expressiveness. Structurally, the living organism is no different than a corpse, but in the corpse you immediately sense that it is lifeless. The living reaches out in varying degrees; there is, in fact, a demonstrable energy field that reaches out beyond the individual and makes contact with its surroundings. As I have already stated, the more alive the functional physician is, the more he encompasses and the more he sees and senses. He does not rush at the patient with an ophthalmoscope, a tongue blade, a stethoscope etc., although this standard equipment is of value to him. Details are important, but so is the patient's living quality. How often does it happen that our instruments and our tests register within normal limits, yet a simple observation may reveal a sick or dying quality in a patient.

In the functional investigation that relies on direct observation, the characterological and biophysical attitude of the patient, his rigidity or flaccidity, his passivity, his indifference, the warmth of his skin, the brightness of his eyes, his muscle tone etc., tell us a great deal about his state of health. In all this wordless communication, we are observing the whole person and are dealing with the functioning of the autonomic nervous system at all times, without realizing it. It tells us as much and oftentimes more than the chemical tests that are made. Unfortunately, in our present technological atmosphere, very little reliance is placed on it. In functional medicine, our task is to recognize the biological rigidity of the patient. The degree of immobility and our effectiveness in treating him will be revealed in the characterological and biophysical softening that gradually occurs in the successful case. It is to the physiology of the entire organism that our attention is drawn and our efforts will be reflected in the response of the autonomic nervous system, the amoeba of the metazoan. In whatever we do, it is our intention to overcome the chronic contraction of the organism so characteristic of most human beings, to bring out an expansion, to enable it to reach out to the world and in that way restore its capacity for pleasure in life, the most essential feature of which is its capacity for genital gratification.

As an orgone therapist, it is my task to overcome the contraction of the armored organism. If I am successful, the blood vessels dilate, the muscles relax, the turgor of the skin is restored, normal intestinal peristalsis returns. All of this is accomplished when the autonomic nervous system is able to expand again and normal pulsation is thereby restored. This is not a hypothesis; the results speak for themselves.

The subject of this paper was: Functionalism as it relates to the functioning of the autonomic nervous system. I adhered to it as much as I could without introducing Reich's actual discovery of the life energy, the force that activates the living, which he discovered in 1940 and to which he gave the name, orgone. In what I said, I was able to rely on its actual discovery, but to have brought it into this presentation would have required more knowledge of it than I could have expected from an audience not previously acquainted with his work. If you wish to further your knowledge in the discovery and the science of orgonomy on which it is based, I would recommend such writings as: *The Function of the Orgasm*; *The Cancer Biopathy*; *The Bion Experiments*; *Ether, God and Devil* etc.