

Review 1

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Review by Mary Ann Liebert of *Functional Morphology: The Dynamic Wholeness of the Human Organism* by Johannes W. Rohen, M.D.

Johannes W. Rohen’s remarkable book opens with the question, “Is our human organism—or any organism for that matter—merely the result of millions of physico-chemical reactions, or are there structural, morphological principles that integrate these individual events into a living, dynamic whole?”

Dr. Rohen, now in his 80s, is well known to medical students and anatomists worldwide for his “Color Atlas of Anatomy: A Photographic Study of the Human Body,” one of the most widely used anatomy texts, currently in its sixth edition. During his long and productive career as Professor of Anatomy, Rohen describes a parallel lifetime endeavor “to understand functional relationships, living wholes, and qualitative aspects” of the human organism. He pursued the discipline of phenomenology and the organic scientific method originated by Johann Wolfgang von Goethe¹ and elucidated by Rudolf Steiner.² In this book, we have the fruit of his decades of quiet, inspired efforts to describe human structure in a way that overcomes one-sided reductionist thinking, while holding to the spirit of scientific inquiry.

Functional Morphology does not describe the human body part by part. Relationships between structures become as illuminating as the structures in themselves. We are asked, not to sit back with only our left brains in gear, but to participate in the concepts described: to contemplate them, and see if they come to life within us. In this way, the parts gradually reveal themselves in relation to the whole.

Dr. Rohen's central concept is the threefold structuring principle, originated by Steiner. In the first section of *Functional Morphology*, Rohen shows how the human body is arranged so that the informational (and informational, or form-conveying) functions are centered in the head and the nervous system. Processing of material—nutrition, storage, and elimination—is centered in the metabolic system in the abdominal cavity. Transportation, distribution, and mediation between these two poles take place anatomically between those poles, in the organs of the chest, heart, and lungs, via the functions of circulation and gas exchange for which they are responsible. He shows how this overarching organizing principle runs from the whole skeleton and whole organ-systems, right down to the organization of each of the body's cells.

Subsequent sections deal in detail with each of the three divisions, showing how, if we are willing to look and to see precisely how the body is composed, a world of integrated form and function is revealed.

Here is one example among many. The author describes the Autonomic Nervous System (ANS), showing in beautifully worked-out detail how this one division of the nervous system is further divided in a threefold manner: the more "informational" aspect of the hypothalamus and limbic systems of the brain; the ANS' nerves in the spine, which are rhythmically segmented, and most closely associated with breathing and heart, that is, belonging to the rhythmic system; and the diffuse, unconscious, plexuses (such as the solar plexus) connected with the metabolic organs, which are least "informational" in character.

In the course of a nuanced discussion of the pituitary and pineal glands, Rohen writes, "Discovering such connections is a slow process, more intuitive than factual." He could not make such a statement if his book were not very well supported by the facts of anatomy, in which he is utterly expert. His book, therefore, offers the reader an unusually well grounded exercise in infusing our step-by-step, analytic style of knowledge with a sober opening to intuition. It is an extraordinary, pioneering work in this regard.

The final section, on evolution with reference to the human spirit, should have been left out. Unlike the rest of the book, this chapter consists of speculative ideas, insufficiently supported by evidence. Furthermore, while they may have merit, Rohen's ideas could be misinterpreted as a

fundamentalist-style “intelligent design” theory, and could potentially blind readers to a fair appraisal of the rest. The remainder of the book is too solid and too important to have taken this risk with material that could easily be presented in another context.

This book is highly recommended to anyone interested in going beyond a reductionist scientific and medical paradigm. It should be given to every medical student with any aspirations toward holism.

References

1. Bortoft H. *The Wholeness of Nature, Goethe's Way toward a Science of Conscious Participation in Nature*. Hudson, NY: Lindisfarne Press, 1996.
2. Steiner R. *Goethean Science*. Spring Valley, NY: Mercury Press, 1988.

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Review 2

***** (5 Star)

A Book Review by Maria Ver Eecke, eurythmist

Functional Morphology: The Dynamic Wholeness of the Human Organism by Johannes W. Rohen (Adonis Press; 2007)

“As the human being stands before us we see, in the first place, his physical body—nowadays the object of purely external observation. How the single organs, the form and functions of the body have been built up in pre-earthly existence—of this people are wholly unaware. In his pre-earthly existence man lives in a world of pure Spirit, where, in communion with higher Beings, he is engaged in building up the spiritual prototype, the spirit-form of his physical body. The physical body here on earth is but an after-copy of the spirit-germ that is elaborated, in a certain sense, by man himself in pre-earthly existence. In earthly life the human being is conscious of his physical body, but does not know what this implies. We speak of Truth, little realizing that a feeling for truth is connected with our consciousness of the physical body. ”
Rudolf Steiner lecture, Truth, Beauty, and Goodness; Dornach, January 19, 1923; GA 220

Dr. Rohen has given us a great gift in his book *Functional Morphology – The Dynamic Wholeness of the Human Organism*. It is a book that invites you to enter through the beautiful drawings on every page and the obvious care that was given to the well-organized format. It is a practical book for eurythmists, as we work with the ensouled physical/etheric body as our instrument, our task to strengthen the life forces, formative forces. Of great concern today is that many people lack a sense for life. The volumes of literature on the subject of health has grown on a vast scale in recent times, yet has our understanding? Materialistic thinking is so prevalent that we seldom notice when human functions are described using mechanistic terminology. We know better

than to think of digestion as combustion, the heart as a pump, or the brain as a computer. Some knowledge of anatomy is helpful, but this book presents a functional anatomy, relating structures and systems as they are interconnected and ordered. Haven't we longed for an anthroposophical Grey's Anatomy to help us recognize the ideal formative principles behind the archetypal forms of the threefold human being and how systems relate and work together? This book offers this, and more.

Dr. Rohen challenges us to mobilize the appropriate forces within our being and raise them to consciousness to begin to understand the phenomena of the domains of three types of forces, that of life, the soul, and the individuality. The physical human structure is the oldest part of our being; it is a foundation to begin understanding higher worlds. At the beginning of the book, we are admonished to look beyond the physical world: "We must develop a different type of cognition for understanding living phenomena."

No matter how well we think we know the threefold human being, yet here we meet the functional threefoldness of the human organism anew. It is familiar, yet scientific (sometimes poetic); understandable, yet challenging. Here we discover the structural principles in the human body in relation to the qualities of the dimensions of space and it is fascinating to begin to take up Dr. Rohen's characterizations, also on a soul-spiritual level. How does the human form create a vessel for incarnation? The vertical is created out of the bilateral symmetry (cognition on a soul-spiritual level). The eurythmy exercise of "weight bears downwards/light streams upwards" is a polarity that creates a domain of tension, in which the will is the primary element at work according to Dr. Rohen. As eurythmists we may be aware that we move forward as sentient soul and backward as sentient body; Dr. Rohen relates the front-back dimension to feeling.

"Synthetic morphology attempts to describe forms in ways that allow us to recognize their qualitative significance as parts of a whole." Imagine the drawings that you have seen in the past of the human eye, then try to picture two eyes with interweaving nerve pathways in red or blue connecting to wing-like visual centers! Amazing? Yes! Here the human form becomes inspirational. And here is research on the twelve senses in depth, over ninety pages devoted to the Sensory Systems. For

example in the chapter on the Sensory Systems, the organs of hearing and balance are compared, each of the three sections of the ear is explained as to form and function, along with embryonic development, and then it concludes with the Organs of Speech and the Functional Cycle of Hearing and Seeing.

This is a beautiful book, well-organized, easy to read and very practical. It will become a companion for referencing on many occasions. I found many of my questions that I have held over the years were answered in this book and it has given me new mysteries to ponder.

I am so grateful to Dr. Rohen for his courage in addressing the future riddles of humankind. The study of embryology as developmental history also describes evolutionary processes. His last chapter, The Future of Human Evolution and the Problem of the Resurrection Body, touched me deeply. This is a book that may change our thinking, perhaps even our lives. Future generations will be indebted to Dr. Rohen for sharing the results of his many years of work and research; it is here for the beholding.

Maria Ver Eecke