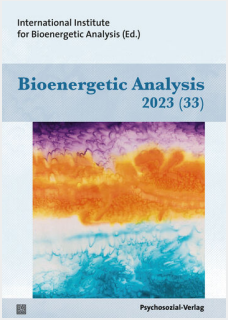
Thomas Heinrich

Fascia and friends



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Character structures in fascia and brain[1]

Thomas Heinrich

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Abstracts

According to Wilhelm Reich, character structures and their underlying unresolved conflicts are fixed in chronic muscle tensions in early childhood. Fascia research, on the other hand, shows that these psychogenic chronic muscle tensions are fixed in the fascia system. In addition to its form-giving function, the fascia system is above all a complex information system that changes via stimuli registered here. How can the results of this research area help to better understand the work with Bioenergetic analysis? How can Bioenergetic analysts become even more effective in their work in the future?

Keywords: fascia, character structures, proprioception, Bioenergetic analysis

Fascia e correlatos (Portuguese)
Estruturas de caráter na fascia e no cérebro
De acordo com Wilhelm Reich, as estruturas de caráter- e seus conflitos subjacentes não resolvidos, são fixados, na tenra infância, em tensões musculares crônicas. A pesquisa sobre a fáscia, por outro lado, mostra que as tensões musculares crônicas psicogênicas são fixadas no sistema da fáscia. Além de sua função de dar forma, este é, acima de tudo, um complexo sistema de informação que se transforma através dos estímulos ali registrados. Questões abordadas são: Como podem os resultados das pesquisas nessa área ajudarem a entender melhor o trabalho com a Análise Bioenergética? Como podem os analistas bioenergéticos tornarem-se, no futuro, mais eficazes em seu trabalho?

1 Originally published in German in *Forum Bioenergetische Analyse 2020*, pp. 7–26, https://doi.org/10.30820/9783837982978-7

Fascia e compagni (Italian)
Strutture caratteriali nella fascia e nel cervello
Secondo Wilhelm Reich, le strutture caratteriali e i loro sottostanti conflitti irrisolti si fissano nella prima infanzia nelle tensioni muscolari croniche. La ricerca sulla fascia, invece, mostra che queste tensioni muscolari croniche psicogene sono fissate nel sistema della fascia. Oltre alla sua funzione formatrice, il sistema fasciale è soprattutto un complesso sistema informativo che cambia attraverso gli stimoli che vi si registrano. In che modo i risultati di quest'area di ricerca possono aiutare a comprendere meglio il lavoro con l'analisi bioenergetica? Come possono gli analisti bioenergetici diventare ancora più efficaci nel loro lavoro in futuro?

Les fascias et les amis (French)
Structures de caractères dans le fascias et le cerveau
Selon Wilhelm Reich, les structures de caractère et leurs conflits sous-jacents non résolus sont fixés dans les tensions musculaires chroniques dans la petite enfance. La recherche sur les fascias, quant à elle, montre que ces tensions musculaires chroniques psychogènes sont fixées dans le système des fascias. En plus de sa fonction de mise en forme, le système fascial est avant tout un système d'information complexe qui se modifie en fonction des stimuli qui y sont enregistrés. Comment les résultats de ce domaine de recherche peuvent-ils aider à mieux comprendre le travail avec l'analyse bioénergétique? Comment les analystes bioénergétiques peuvent-ils devenir encore plus efficaces dans leur travail à l'avenir?

Faszien and friends (German)
Charakterstrukturen in Faszien und Hirn
Nach Wilhelm Reich sind die Charakterstrukturen und die ihnen zugrundeliegenden ungelösten Konflikte der frühen Kindheit in chronischen Muskelverspannungen fixiert. Die Faszienforschung zeigt hingegen, dass diese psychogenen chronischen Muskelverspannungen im Fasziensystem fixiert sind. Das Fasziensystem ist neben seiner formgebenden Funktion vor allem ein komplexes Informationssystem, das sich über hier registrierte Reize verändert. Wie können die Ergebnisse dieses Forschungsbereichs helfen, die Arbeit mit der Bioenergetischen Analyse besser zu verstehen? Wie können Bioenergetische Analytiker*innen dadurch mit ihrer Arbeit in Zukunft noch wirksamer werden?

Фасция и друзья (Russian)
Характерные структуры в фасции и мозге (Томас Хайнрих)
Согласно Вильгельму Райху, структуры характера и лежащие в их основе неразрешенные конфликты фиксируются в хронических мышечных зажимах в раннем детстве. Исследование фасции, с другой стороны, показывает, что эти

психогенные хронические мышечные зажимы фиксируются в системе фасции. Помимо своей формообразующей функции, система фасций является, прежде всего, сложной информационной системой, которая изменяется под воздействием регистрируемых здесь стимулов. Как результаты этого направления исследований могут помочь лучше понять работу с биоэнергетическим анализом? Как биоэнергетические аналитики могут стать еще более эффективными в своей работе в будущем?

筋膜和朋友 (Chinese)

筋膜和大脑中的人格结构

根据威尔海姆 赖克的理论，人格结构及其未解决的冲突是童年的慢性肌肉紧张的固着，另一方面，筋膜的研究显示出这些心理上的长期肌肉紧张固定在筋膜系统里。除了它的赋予形式的功能之外，总的来说筋膜系统是一个复杂的信息系统，通过刺激记录变化。这个领域的研究结果如何帮助更好的理解躯体动力分析？ 躯体动力分析师如何可以在将来的工作中更加有效？

Reich's conflict model as the basis for the character structures and Lowen's extension

Alexander Lowen adopted from Reich the idea that character structures are anatomically anchored in the muscular system (Lowen, 1979). Reich had thus put Freud's theory about the repression of unresolved conflicts on a physical basis: Through his research at the scientific seminar of the Psychoanalytic Institute in Vienna, Reich found that unresolved conflicts are always characterized by two conflicting courses of action. If the individual cannot decide between them, the muscle chains needed to perform the respective action are already activated. As the problem persists, so does the activation in the body (Reich, 2018, 1933). Recent research in the field of "motor imagery" confirms what Freud found as a term for thinking: "rehearsal action". According to this, the very act of imagining anaction activates those motor brain areas that are related to the performance of the imagined actions (Kilteni et al., 2018; Karolinska Institue, 2018). These recent findings support the idea that the unresolved conflicts also maintain themselves in activated brain areas, as if they are solidified by the chronic activation of the conflictual options for action, i. e. by chronic muscle tension in the body. Reich's equivalent of Freud's repression of such unresolved conflicts is found in the elimination of the perception of this muscle activation. Anatomically, the sensory feedback of the activated muscle groups is suppressed. This is confirmed by habituation research (Hinde, 1970), according to which the organism's readiness

to respond "to repeatedly presented stimuli that have proven to be meaningless" is completely suppressed, i. e. they are no longer significant on a sensory level. A great merit of Lowen's is that he has extended the concept of character structures to include the oral and has worked out more clearly for Bioenergetic work the schizoid character structure distinguished from the schizophrenic by Fenichel (Lowen, 1992). At the same time, the concept of character structures due to unresolved conflicts is overextended by his descriptions of the basis of the schizoid as much as by Reich's description of the schizophrenic. Reich himself names that the basis of schizophrenic character structure is a state of shock (Reich, 2018, 1933). Moreover, he himself concludes that "the blockage is between arousal and perception [...], and not, as in the 'cold' obsessive-compulsive, between the source of energy and its mobility" (ibid., p. 572).

Reich's conflict model is based on the individual's ability to decide. The individual must therefore be able to choose at least one or the other option for action. For such a voluntary or cognitive decision, however, a maturation of the nervous system in the form of myelination of the nerves is necessary. At the beginning of our lives, the nervous system is not yet fully developed. Not only are some areas of the brain not yet mature enough to fulfil their function, such as the hippocampus, which is responsible for memory and needs another three years of life after birth to do so. The motor nerves that make neocortical control of our locomotor system possible are also not yet fully developed at the time of our birth. Here, the so-called myelin layer must first be built up: an "insulation" consisting of Schwann cells around the "wire" of the nerve cell. This coating creates a fast and orderly transmission of stimuli in the axons of the nerves from a node of Ranivier to the next, the spaces between the individual Schwann's cells.

Prior to this, our neuronal apparatus only functions via the genetically given programme of reflexes such as the sucking, grasping and startle reflexes. The startle reflex is part of the shock reaction discussed by Reich, which is central to the development of the schizophrenic/schizoid character. Only these reflexes enable the very young human to make coordinated movements and thus meaningful actions. However, these reflexes are not voluntary and are therefore not dependent on decisions. Thus, the psychogenic chronic muscle tension typical of the later character structures is not possible. Lowen and Reich describe the eye block and diaphragm block as typical of the schizoid and schizophrenic character. They also name the chronic tension of the deep muscles around the individual joints. But all these phenomena are not based on unresolved conflicts, but rather on the chronicity of the startle reflex or in other words: on too frequent triggering of the startle reflex without enough time in safety through contact and bonding to dis-

solve these reflexes and activate other patterns that lead to growth, self-regulation and independent action.

But if Lowen and Reich have here made a paradigm shift in the cause of character structures, away from Reich's original conflict model towards a chronic reflexive reaction, can we then stay with the anatomical basis of character structures, namely a chronically fixed musculature?

Of course, it is known through neuropsychological research that habits as learned behavioral patterns also have greater stability in that they are anchored in the brain in the form of neuronal synaptic circuitry. This means that the behavioral patterns, which are understood as character structures in Bioenergetic analysis, have an anatomical basis there. When we speak of anatomical basis in the following, the focus here is on the physical structures outside of certain brain areas that have not yet been sufficiently researched. The fact that the neuronal anatomy is also of decisive importance for the Bioenergetic character structures will be taken into account in the following by elaborating the importance of proprioception as a system of self-awareness.

Other body-psychotherapeutic approaches such as Somatic Experiencing (SE) according to Peter Levine (1999) see traumatisation as the fundamental experience of our psychological constitution and its representation in the body. SE is thus somatically based primarily on research into the anatomical and physiological, i. e. also hormonal, foundations of trauma therapy.

These are also of extraordinary importance for Bioenergetic analysis, as is the entire trauma research. The latter is also shown by the fact that the first works on trauma therapy in Bioenergetic Analysis were written at the same time as the general basic works on trauma therapy (Lewis, The Psychosomatic Basic of Premature Ego Development, 1981; Van der Kolk, Blitz, Burr & Sherry Hartmann, A comparison of nightmares after combat with lifelong nightmares in veterans, 1984). However, to examine any psychological experience only in terms of trauma experiences or the lack thereof would massively reduce the various concepts and results of psychodiagnostics and psychotherapy and make them simplistic.

In this respect, the question remains what could be the anatomical basis for the different ways of experiencing that lead to the different character structures and possibly to further, also embodied mental illnesses.

If we open our view a little further, we find a body therapy close to Bioenergetic Analysis with the approach of Rolfing® Structural Integration (Rolfing® SI), whose basic intention is also structural change, more precisely: to integrate the individual body structure. For this purpose the term grounding, which is central in Bioenergetic Analysis, is also used. Whether Alexander Lowen or Ida Rolf de-

veloped the term first cannot be determined. What is certain is that Alexander Lowen and Ida Rolf met in Esalen/California or at least learned about each other's approach in this environment.

In Rolfing® SI the anatomical basis for the structure is considered to be the fascial system.

Thanks to Robert Schleip's unquenchable thirst for knowledge we now know more about this building material of the body that has been neglected by science over the past centuries.

In the following, I would like to give a brief insight into what we know about fascia today: What is defined as fascia? What are fasciae made of? What are the functions of this system?

Afterwards I would like to show how the fascial system as an anatomical basis for the Bioenergetic character structures is of more comprehensive service than that of the musculature. In doing so, I follow an old maxim of epistemology, Occam's razor of different theories: the simplest theory that explains an issue with fewer variables is preferable.

Finally, I would like to give indications as to which aspects of Bioenergetic analysis are still valid, which need to be changed, and how Bioenergetic analysis could further develop through the paradigm shift.

Results of the new fascia research

At the 1st International Fascia Research Congress, co-organized by Robert Schleip and held at Harvard Medical School in Boston from 4 to 5 October 2007, the researchers present there agreed on a new definition of fascia that goes far beyond the previously valid definition of fascia that only encompassed the myofascial structures and has since been further developed. According to this definition, fascia is "the soft tissue parts of the connective and supportive tissue apparatus running through the human body", one could also say the collagen-containing fibrous tissues that participate in our body-wide transmission system for tensile stresses.

> "According to this conception, the entire fascial system includes not only the 'fascia in the narrow sense' (i. e. tissue membranes such as septa, joint capsules, aponeuroses, organ capsules or retinacula), but also local condensations of the tension network in the form of tendons and ligaments, and in addition softer collagenous connective tissues such as the fascia superficialis or the innermost intramuscular layers of the endomysium [...], the dura mater, the periosteum, perineum, the fibrous

> outer layer of the intervertebral discs, the organ capsules as well as the bronchial connective tissue and the abdominal mesentery now fall under the term fascia" (Schleip et al., 2014, p. VII).

The following facts show that this system really encompasses the whole body and envelops its individual components. If we look at the organ capsule of the brain, i. e. its various skins, we can see that the dura mater as one of these skins not only encloses the brain, but also the spinal cord and its spinal nerves with all their branches as well as those of the cranial nerves. Comparable extensions can be seen from the pericardium around the heart to all the sheaths of arteries and veins. Bones are also surrounded by fascia, which is called periosteum. This fascia is joined by other fascial structures, such as the tendons to the fascial wrap around the muscles and the septa in between them, as well as the ligaments, which lead to other periosteum and the bones enclosed within them. These connections of the fasciae, even on the smallest structures such as around each muscle fibre, mean that an organism can be recognized in its own form by its fascia system alone. In Gunther von Hagens' Body Worlds exhibition, there was once a plastination of the arterial system of a rabbit, which was thus still recognizable in its entire shape.

In addition to cells, the components of fascia are mainly the extracellular matrix and water. The extracellular matrix is formed mainly by fibroblasts when needed and released into the extracellular space of the organism. The composition and structure of these fibres vary greatly and are determined by the function of the different types of fascia described in the definition above. They usually consist of a very specific ratio of collagenous elastic fibres to a basic substance.

Many fibres, such as the fascia around muscles, shorten over time and need movement to expand back to their original length. This is the reason why bedridden people experience massive movement restrictions after only a short time, requiring long and often specific (physiotherapeutic) training to regain full mobility. For the same reason, older people become smaller or more bent. Other fibres, such as tendons and ligaments, have a higher proportion of collagen and respond less to stretching and more to compression (van den Berg, 2014).

To get an impression of the diversity and complexity of the fascial system, the videos by Jean-Claude Guimberteaux are recommended, for example Strolling under the Skin (2005).

One of the main tasks of the fascia is to protect and stabilize the organism. The fascia system reacts to tensile and compressive forces and can store them to a certain extent. Only when this storage function is overloaded by falls, accidents or external injuries, as well as during operations, does it result in bone fractures

or the bursting of veins, organs or other tissue. However, the organism has the ability to form new fascia tissue in the form of scars in the case of such overloads, thus protecting itself and giving it a new shape.

In addition to these functions, the fascial system is also the organism's water reservoir. This ability decreases with age: the human body contains about 85 percent water at birth and about 50 percent at old age (Markl & Reiter, 2007). Thus, the organism becomes more rigid and less flexible with age. However, this function is not linked to the number of days lived, but rather depends on the functionality of the fascial system. This is increased through exercise, proper nutrition and treatment, so that the water storage function can always be improved even into old age. Conversely, the fasciae can lose even more water and stick together under unfavourable circumstances. This happens, for example, when the parts of the body they surround are heated, as in the case of inflammation or some other kind of excessive activity.

Another function of the fasciae, which will be discussed later, is proprioception, i. e. self-awareness in the sense of perception of body position and movement in space.

Part of the fascia, –which enwraps the muscles, is referred to together with the muscles as the myofascial system. The two types of tissue are not yet clearly distinguishable from each other at the beginning of life. The system aspect is not only evident in the protective function of the fasciae for the muscles, but also in their economy: part of the contraction forces of the muscles are transmitted via the fasciae tissue. Furthermore, chronically tense muscles consume a lot of energy: on the one hand, the nerve cell that activates the muscle must fire continuously so that the muscle remains contracted. On the other hand, the muscle itself must fire in order to carry out the contraction permanently. Normally, phasic muscles, which in contrast to tonic muscles are not needed to keep a person upright but to move, show a rhythm of tensing and releasing. If they are permanently tensed, they cannot be used for the movements that they normally carry out. In this situation it is more economical for the organism to build up collagen fibres, i. e. fasciae, instead of chronically tensing muscles or to strengthen the already existing ones. The muscles can then atrophy as a result and thus consume less energy even in a tense state. Thus, according to Reich, the unsolvable conflict is ultimately stored in the fascial system.

The meningeal fascia is the fascial layer around the nerves and thus outside the myofascial system (Willard, 2014). This includes the meninges surrounding the brain with their extensions around any nerves to their ends. The meningeal fascia shows increased density and thickness when those nerves it encases are un-

der constant fire. This happens when a trauma response is not stopped, such as in PTSD or developmental trauma. Due to the permanent activation of the brain, this area probably becomes warmer, which ultimately results in a certain drying out (= sticking together) of the meningeal fascia.

As described at the beginning, it can be assumed that the schizoid character structure arises from a repeated early traumatisation and the startle reflex triggered by it, unless the trauma reaction can be regulated by a secure relationship and thus comes to a conclusion. In such a situation, not only are the muscles involved in the startle reflex, such as the occipital muscles, the eye muscles, the diaphragm, the psoas, the deep spinal muscles (m. multifidi) and all other deep muscles around the joints chronically tense, but also the entire meningeal fascia around the nerves and brain areas that are involved in the startle reaction shorten. This creates a permanent tension around the brain and nerves, which in turn keeps them in a chronic state of tension. This would explain, for example, the wrinkles between the eyebrows typical of the schizoid character structure, which are not caused by a critical muscular contraction of the eyebrows, but by the tension on the intracranial suspension of the falx, a membrane that is stretched between the cerebral hemispheres and gives them support in the skull.

So ultimately the schizoid character structure formed through trauma experiences would also be stored in the fascia system here.

Fasciae as the anatomical basis for the Bioenergetic character structures

If we now assume that the fasciae are the anatomical basis for the Bioenergetic character structures, then this should also give us an advantage in how we deal with people who are fixed in specific character structures.

An important research finding on fascia is the evidence of the informational function of the fascial system. Different mechanoreceptors react to different kinds of pressure and traction. The information is the basis for proprioception, which makes the position of the individual body parts detectable and enables their unconscious mobility in relation to each other, but also the position and perception of the body as a whole (van der Wal, 2014).

Proprioception enables the organism to perceive itself.

This perception is further enhanced by movement, as this naturally also stimulates the brain to constantly process new stimuli. But it is also possible to feel oneself without movement, and this has been possible from the very beginning

of life. Most of the movements we make in everyday life are automated, but they can also be controlled voluntarily: we decide to leave the house to go shopping, for example. The movements of walking, opening and closing doors and locking up are then again automated, as they have usually been trained for years. The process of myelination of the nerves must be completed to the point where we can perform the specific movement. The latest movement that becomes possible for humans after myelination is to stand up and walk. This ability coincides with the child's ability to speak of itself and to use the term "I". If one looks at this differentiation of the myofascial system over the first two years of life, parallels to the development of the ego can very well be seen: The perception of one's own "self" precedes the autonomy and arbitrariness of the "I". Here, terms used in the German language such as "self-development", "self-affirmation", "self-regulation" as well as "ego strength" and "false ego" once again take on a deeper, physical meaning – also with regard to their use in the narcissism discussion or that of the psychopathic character structure.

Furthermore, recent fascia research shows that the information of proprioception is responsible for the fact that the fascia system changes or can be changed. Table 1 according to Schleip (2012) compares the different mechanoreceptors, their preferred localization in the fascial system as well as their different types of pressure or traction to which they react as well as the known result of the stimulation.

Superficially, this table makes it clear that almost any kind of touch, whether with strong pressure or even very gentle contact, has an effect on the fascial system.

A more differentiated look at the meaningful stimulation of the receptors reveals that the Bioenergetic interventions developed so far receive confirmation in their mode of action. Not only the vibrations (as stimuli for the pacini and paciniform receptors) and stretches (as stimuli for the Golgi receptors), which are already described as elementary in the classical Bioenergetic work of Lowen, appear. In fact, forms of touch, as they have found their way into Bioenergetic analysis through the Attachment Theory (Bowlby, 1969), with both fine, tender touches and long-lasting, firm holding of the client, are confirmed in their effect on the Ruffini and interstitial receptors. Stimulation of the interstitial receptors have a deep effect anatomically down to the bone level, which people usually feel deeply touched by.

Fasciae provide new guidelines as the basis for character structure not only for Bioenergetic work in physical contact with people but also for Bioenergetic body exercises that people can use: At the beginning of the article it was described that fascia has the property to shorten. It takes everyday movement for fascia to

Receptor type	Preferred location	Responsive to	Known results of stimulation
Golgi type 1b	– Myotendinous junctions – Attachment areas of aponeuroses – Ligaments of peripheral joints – Joints capsules	Muscular contraction in golgi tendon organs Probably to strong stretch only in other golgi receptors	Tonus decrease in related striated motor fibers
Pacini and Paciniform Type II	– Myotendinous functions – Deep capsular layers – Spinal Ligaments – Investing muscular tissues	Rapid pressure changes and vibrations	Proprioceptive feedback for movement control (seines of kinesthesia)
Ruffini Type II	– Ligaments of peripheral joints – Dura mater – Outer Capsular layers and other tissues assosciated with regular stretching	Like Pacini, but also to sustained pressure Especially responsive to tangential forces (lateral stretch)	Inhibition of sympathetic activity
Interstitial types III and IV	– Most abundant receptor type, found almost everywhere, even inside bones – Highest density in periosteum	Rapid as well as sustained pressure changes (50% are high-threshold units, 50% are low-threshold units)	Changes in vasodilation Plus, apparently in plasma extravasation

Table 1: Receptor types in the fascial system, their preferred location, the stimuli that activate them and the stimuli and the reactions triggered by them (after Schleip, 2012).

return to its original length. This ability to regenerate the fascial system decreases with the ability to fully retain water, i. e. to age. In order for fasciae to become longer again, they need at least a two-dimensional orientation in three-dimensional space, which is conveyed to them via the mechanoreceptors. This means that the fascia to be stretched must be stretched between two opposite points.

As the simplest orientation for the whole organismic fascial system, one can use the central grounding in Bioenergetic analysis via contact with the ground and contrast it with the orientation of the environmental senses in the head such as the eyes, ear or sense of smell. The posture of the bend-over can also be used to stretch the fascia of the hamstrings, the so-called ischiocrural musculature, by paying attention to the ischial tuberosities and the tailbone: In this way, the head and arms hang down, the feet and, if possible, the fingers have a well grounded contact with the floor, while the ischial tuberosities and/or tailbone simultaneously rise towards the sky/ceiling. In order for the fasciae to really lengthen, it is important to maintain the position for at least 30 seconds. Some authors believe that a holding time of three minutes results in a further decisive lengthening.

According to this principle of orientation of the body parts to be lengthened in two directions, which the Rolfer Jeffrey Maitland has also described with the neologism Palintonicity, all previous Bioenergetic exercises can be checked and, if necessary, varied to attain this lengthening (Maitland, 1991).

The terms "lengths" or "elongation" actually only make sense in a two-dimensional system. However, since fascia always encloses a three-dimensional space, these terms are not appropriate. In the following, the terms "unfold" or "unfolding" (German: Entfaltung) are therefore used in this regard. In German there is a close relationship between this term and Selbstentfaltung, which is only imprecisely translated with self-development. So the term "self-unfolding" is deliberately chosen here and picks up on the theme of self vs. ego development described above.

Implications for the further development of Bioenergetic Analysis

Three types of implications arise from the paradigm shift from the musculature to the fascial system as the new anatomical basis of character structures outside the brain: Some axioms are confirmed, some retain their meaning and some axioms need to be changed.

Confirmed axioms

Let's look at Bioenergetic work from another angle: here grounding is seen as the central step to change one's attitude towards the world in order to live more en-

ergetically and self-determined. But what does it mean when we talk about being grounded through Bioenergetic analysis?

Grounding exercises unfold the fasciae of the myofascial system, especially those of the muscles of the back and hamstrings. This unfolding happens through a stimulation of the mechanoreceptors of our proprioception. Such a change also goes with a personal experience: grounded people feel more connected to the ground and more at rest in their body. Thus, the experience of grounding could also be understood as an experience of the sense of weight (not to be confused with the sense of balance), which is essential for the information process for the change of fascia.

This activation of proprioception via experiencing weight or grounding is consistent with Reich's idea that the schizophrenic character structure is characterized by a "blockage between arousal and perception" (Reich, 2018, 1933, p. 572) that can be resolved by activating proprioception.

From the outside, grounded people appear looser, more "relaxed," more with themselves. According to oral tradition, Hubert Godard, international trainer for Rolfing® and one of the main developers of the Rolf Movement™ approach, was able to measure a greater relaxation of the back muscles in relation to the size of the foot surface physically in contact with the ground. It is likely that the reverse can also be physically measured, that after Bioenergetic grounding exercises, the unfolding of the fascia in the back of the legs and in the back increases the area of the feet that are in physiological contact with the ground.

In this sense, the concept of grounding in self-experience is confirmed by fascia research. To find a new definition, we could consider grounding as an aspect of our external perception where we pay close attention to the ground and our relationship to it.

The concept of relaxation, on the other hand, which has been considered central in behavioral research and therapy for many years as a more adequate way of dealing with anxiety, does not find support here either. This is because fasciae cannot relax. As already mentioned above, they can only become long again through movement, touch (as a passive being moved) or palintonicity (as noted above means a bidirectional orientation of the body between two poles such as head to tail or side to side).

As described above, proprioception consists of a multitude of different mechanoreceptors with an extremely broad spectrum of sensitivity. This differentiated approach to our self-perception helps to understand why the different qualities of touch have a direct effect on the character-structural fixations. Both, the gentlest of touches and firm clasping of the client as used in Bioenergetic analy-

sis, can achieve an unfolding of the various fascial levels via the stimulation of these mechanoreceptors and thus lead to a release from the character-structural fixation.

Axioms of further importance

The knowledge in Bioenergetic analysis about character-structural processes and their fixation in the body via chronically tense muscles has so far remained untouched by fascia research. The process of forgetting through the switching off of perception in the mechanoreceptors, on the other hand, even receives anatomical foundations through fascia and more recent brain research.

The knowledge in Bioenergetic analysis that movement, such as in physical exercises, as well as physical contact, help to get out of structural fixations, also continues to apply. This is also confirmed by fascia research, although not as a release of structural tension from muscles, but from fascia.

Fascial adhesions arise from stressful to threatening experiences such as illnesses, falls, operations or from recurring experiences that lead us to specific postures through psychological conflicts. The latter types of fascial adhesions can lead to emotional discharges when manipulated. Bodywork practitioners such as physiotherapists, massage therapists and Rolfers™ do not learn a background for this reaction in their training and thus often cannot help to integrate it, especially if they cannot understand and analyze the emotional meaning behind these emotional discharges.

The importance of the relationship between therapist and client for this process of resolution is also not yet the subject of fascia research, although there are empirically proven concepts, at least in Rolfing® SI, such as appropriate distance.

Here, Bioenergetic knowledge remains essential and may even become more important with the increased use of fascial techniques in the near future.

Axioms that need to be changed

The complex system of the mechanoreceptors of proprioception is not located in the muscles, but in the fascia. Bioenergetic analysts already use this system in their techniques to hold or move clients with early disorders or traumatization.

To change character structures, the fascial system needs new information.

To inform fascia to unfold again, it needs movement in palintonicity, that is, with bidirectional orientation. For the whole organism, this means that the sense

of weight (grounding) must be developed so that the feet are well anchored on the ground. At the other pole, the horizon for the eyes and inner ear must be present as a reference point, or the localization with this pole must be developed. In Bioenergetic Analysis, much emphasis is placed on the development of adequate social contact. Thus, in many exercises the therapist or another participating person in a Bioenergetic group is used as a counterpart for the person working on him/herself.

For many people with a primarily schizoid character structure, this reference to a social horizon creates an excessive demand, which leads to so much stress that many of them dissociate, at least at the beginning of the Bioenergetic work. The elaboration of the spatial horizon as an adequate reference point for eyes and (inner) ears creates a resource for these people. From this related spatial horizon, they can develop a relation to themselves and in a third step the relation to another as their social horizon.

If we assume that the character structure-forming unit is the muscle system and its underlying long-lasting tension, but the chronic consolidation of the actual character structure is in the fascia system, Bioenergetic analysts can begin to open and expand their field of work. In this way, new methods of intervention will certainly emerge in Bioenergetic Analysis in the future.

Since the fascia reacts to various forms of pressure and stretching (see table 2), it will make sense in the near future to first develop further manual techniques in order to use them to act more precisely on the individual who is stuck or has non-integrated areas in the body.

Fascia is informed by	to which they respond with
Strong elongation	Reduction of muscle tone
Rapid pressure changes	Kinesthesia = sensation of movement
Vibrations	= ability to control and direct movements of body parts unconsciously
Sustained pressure	Inhibition of sympathetic activity
Tangential forces	Inhibition of sympathetic activity
Rapid as well as sustained pressure changes – with both high as well as low stimulus threshold	Vasodilatation (vasodilatation) Extravasation (leakage of fluid into the extracellular space) Water absorption in the fasciae

Table 2: Stimulus-response system of the fasciae (translation and compilation according to Schleip, 2012)

This is not to disregard the self-efficacy of Lowen's approach and focus on a more Reichian treatment. Rather, the knowledge to be developed regarding new contact possibilities and treatment techniques will also give rise to the possibility of developing new exercises – as briefly outlined in the previous chapter – that will make clients more independent of fascial treatment methods.

Fascia work with people with a schizoid character structure as a concrete example of the implications for Bioenergetic analysis

In the following I would like to give an example of how to work with people with a primarily schizoid character structure on the basis of fascia. In doing so, I do not want to give a comprehensive description of the methods of intervention with a schizoid character structure. This has been elaborated en detail in various Bioenergetic publications (Lowen, The Betrayal of the Body [1982]; Lewis & Sebastian [1984], Self-Discovery and Bioenergetic Analysis. Contributions to Early Disorders [1984]). Of course, the interventions listed there remain valid. I would like to limit myself here primarily to new methods or variations of previous methods with a more central focus on fascial structure. In doing so, I try to avoid the term client, because in recent years Bioenergetic analysis has opened up more and more with regard to its field of application. It is therefore no longer used only in the psychotherapeutic framework, but has also found its way into social work, pedagogy and other fields.

The schizoid character structure is formed in a phase of life when the myelination of the nerves is just beginning. Thus, this character structure is not based on unresolved conflicts. Rather, it is formed by the frequent triggering of the startle reflex, which could not be sufficiently resolved and calmed by any reassurances of the young organism by its caregivers.

The anatomical basis for the schizoid character structure hereby lies, aside from the permanent activation of the whole nervous system, mainly in its fascial envelope, the meningeal fascia (e. g. dura mater).

Lowen had established the principle for the development of grounding with people with a schizoid character structure, to work first only in standing position, in order to prevent possible regressive flooding in lying position. However, the Bioenergetic analyst can also work with a person with a schizoid character structure so that he or she becomes aware of his or her ischial tuberosities (os ischii) and experiences being carried by aligning the body's center of gravity with the

front edge of the ischial tuberosities. Then it is also possible to work in a sitting position. The advantage of this position is that the leg muscles do not have to be particularly developed. Because the leg muscles are weakly developed especially in people with schizoid character structure, a specific shortening pattern is in the hamstrings. This leads before and at the beginning of Bioenergetic work to an experience of this physically given weakness in standing, which can be bypassed by working in sitting position. In addition, Bioenergetic work while sitting on the front edge of the sitting bones enables a person with a schizoid character structure to maintain the overview necessary at the beginning of Bioenergetic work.

Gaze and sense of balance can also be used to orient to the upper pole and explore space. This exploration of space is an important step in this first working phase of developing power and strength for the person with a schizoid character structure. Most people with a schizoid character structure have long since integrated this reference with space for themselves. Many of them love vacations in the mountains or at the sea, where the spatial distance to other people can be great. Often they experience a critical feedback in this respect in the interpersonal interaction, also in the Bioenergetic analysis, in that they are requested again and again to take up contact with their fellow human and therapists. At the same time, for those of them who were exposed to hostility at the beginning of their lives, the contact to the non-human space was one of the few possibilities with which they could secure themselves. The discovery of this possibility to connect with the non-human space and the realization that they had developed this possibility on their own from earliest childhood strengthens their self-confidence and trust in their own ability to very well make contact: with space, with nature, with animals and also with the ground and finally with the world around them.

At this point, Bioenergetic work can also begin to differentiate how a contact to space is experienced in comparison to dissociation. For in dissociation not only the hold with the ground is lost, but also the sense of space implodes. Thus, both graspable dimensional features of the world (Godard after Newton, 1995) are no longer available. However, if the person with a schizoid character structure has established contact with the non-human, and thus for him safe, world through the bidirectionality of his orientation to space with his eyes and ears as well as to the ground via his feet when standing, his sitting bones when sitting, or with his back when lying down, his fascial system will unfold through this bidirectional orientation and he can thus also structurally come out of his shock-rigid withdrawal piece by piece.

Only when this experience is integrated, can the work with contact to people in this space begin. Here the eyes are increasingly included in the Bioenergetic

work. Hearing can also be used as a guide for experiencing space. Working with the human voice gives the Bioenergetic analyst a way to fill the previously humanless space with the human. Likewise, reaching out/touching and smelling can be used for the development of spatial perception. The development of an independent contact to the non-human world through the weight sense of the fasciae (grounding) and the perception of space creates the prerequisite that a person with a schizoid character structure is not completely overwhelmed when trying to integrate first human contact into this world of theirs. Instead of having to oscillate between the contact with another person, which is experienced as threatening, and dissociation, by closing the external senses to other people (by looking away, turning away, holding the ears or nose, or pushing away), she has the possibility to withdraw again and again into the safe, non-human world and to maintain this relationship. On this basis, further techniques of Bioenergetic Analysis can be started in order to develop a more mature demarcation from the social counterpart, for example by learning to say "No!" – also in a physical sense and expression.

Once such work has established the relationship as secure in spatial proximity, the holding and treatment work by the Bioenergetic analyst can begin. As a step on this path, a person with schizoid character structure can learn to treat him/herself with simple manual techniques. In summary, these techniques could be put under the motto "taking off the helmet": Many people with schizoid character structure have the feeling that their head is locked up by a helmet, but they do not know how to take it off. These people are helped by a simple treatment technique of working on the galea aponeurotica under the scalp together with the fascia of the m. temporalis. The galea aponeurotica is one of five ends of the fascial system in our body: there is one each on the palms of the feet and hands and one on the head – the galea aponeurotica. All fascial branches and layers converge here. Because of this, treatment of these body structures is particularly effective for changing the fascial system. The fascial structure of the galea aponeurotica lies directly under the scalp and is attached to the skull. For this technique, it is helpful to imagine taking off a bathing cap that fits very tightly to the head. The "lifting" is done by first letting the fingertips sink into the scalp above the ears. The fingertips are then moved directly above the skull bone melting towards the crown of the head, as if sliding under the bathing cap with the fingertips, and then lifting the cap very slowly upwards (cranially).

Other techniques for lifting off the helmet include exploring the bony edges of the eye sockets and the base of the skull ("removing the swimming goggles"). Again, using individual fingers or groups of fingers with a similar melting touch quality, the superior (with the thumb berries)as well as inferior (with the index

finger berries) orbital rim and the base of the skull (simultaneously with the index, middle and ring finger tips) can each be swept from medial (center) to lateral (side). This will inform the suboccipital fascia with its connections to the dura mater, as well as the fascia around the eye muscles, which often fix the eyes in a focused perception.

Yawning is a very simple exercise to open up especially the meningeal and visceral fascial world in the skull, thoracic and abdominal regions and thus to regain more inner space (Heinrich, 2014). Yawning can be triggered very easily by opening the lower jaw as much as possible with the lips closed while inhaling. Since yawning is contagious, it can help the person with a schizoid character structure if the Bioenergetic analyst* herself tries to yawn. By the way, many of the Bioenergetic exercises with the feet (e. g., rolling the feet on a ball, over a stick or a roller) also affect the plantar fascia and, through it, the body holistically. This is because the entire fascial system, which complexly envelops the individual body structures, comes to a common end in the palms of the hands (palmar aponeurosis), the surfaces of the feet (plantar fascia) and the head (galea aponeurotica). This is also the basis for hand and foot reflexology work. Thus, Bioenergetic exercises acting on the palms of the feet and hands, as well as the scalp, can be used to influence the fascial system.

If in the further course of the Bioenergetic work the basis for manual treatment of the people with schizoid character structure is created, here the fasciae at skull base and sacrum as well as those of the entire sheath are targets of the touching work.

The skull and sacrum have a special meaning here, because in a beneficial relationship of newborns, the holding of them by the mother at the head and pelvis is crucial for the experience of security and being carried. At the same time, this holding of the head and pelvis does not happen away from the mother's body. Rather, during this time she holds her child at best in her arms at her breast, so that a post-uterine holistic envelopment of the child takes place. The bodily growth of the human being makes it impossible in later age for fellow human beings such as love partners and therapists to embrace a human being so closely again. Bioenergetic analysts work with a specific division of these touches: holding the base of the skull and the sacrum, and working with the envelope, especially the torso. For the torso, it can be a very fun group experience to hug each other while standing and pressing very hard. First, one person squeezes the other while the other receives the hug. The hugger instructs the hugged person to exhale during the squeeze so as not to resist by holding their breath.

When holding the base of the skull, there are techniques for establishing contact with fascial connections to the meninges (dura mater) and thus to the

meningeal fascia via contact with the skin surface via the musculi rectus capitis posterior minor. By this, their possible shortening can be treated by appropriate stimuli. Bob Lewis uses this connection at the atlanto-occipital joint in his work on cephalic shock (Lewis, 1984).

Corresponding possibilities also exist for holding the sacrum. But also the contribution of the periosteum in holding these two mentioned body areas leads to an experience of deeply being held and to the unfolding of deep fascial layers.

This work on the deepest structures creates, via proprioception, on the one hand, an experience of being fundamentally held and, on the other hand, an unfolding of the fascial system, which has a supporting effect in dissolving the character structure that has been fixed in the fasciae up to that point on the physical level.

As already mentioned above, many of the previous Bioenergetic interventions can be applied to influence the fascial system in this sense.

To optimize the effect here, it helps to work with adequate imagination: It makes a difference in effect whether one imagines working on the muscles attached between two bones or whether one tries to give new impulses to a complex, three-dimensional fascial system so that it unfolds on its own and rehydrates again.

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