# Morphogenetic field, soul and atmosphere

## An animation of morphogenetic fields

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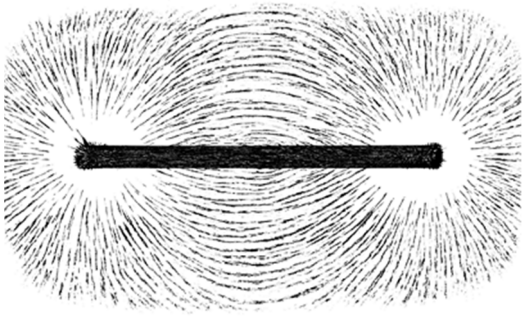
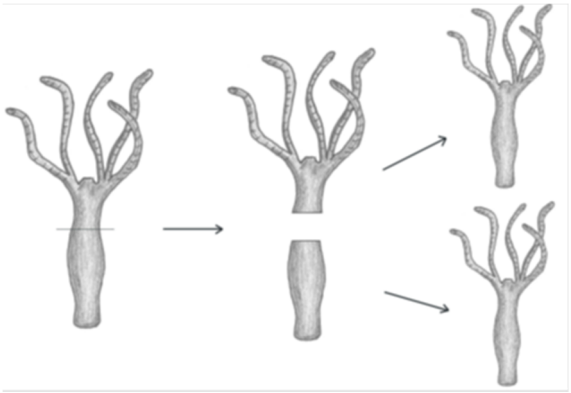
**The magnetic field**



Iron filings are well dispersed on a piece of paper, under which there is a bar magnet. It is lightly knocked on the paper. Immediately the iron filings slip a little bit and form an orderly structure of lines.

How complex, if not impossible, would it be to arrange such a pattern without a magnet in a mechanical way by sorting the individual iron filings by hand for example with tweezers! On the other hand how quick and easy is this pattern arranged due to the force of a magnet, which holistically seizes the whole space around. This holistic acting force is called a magnetic field.

**The morphogenetic field**



A living freshwater polyp Hydra is cut into two parts. After a few days, you can observe that both parts have regenerated into two smaller but complete Hydras.

Each part has built a whole organism again. So in each part the form giving power of the whole must exist immanently. Thereby the substance which is necessary for the regeneration of the two parts, originates from the substance of the original halved polyp. This substance is reshaped so that from each part a viable wholeness is formed again. This shows that the creating holistic principle acts beyond matter and genes. Such a holistic entity acting in living nature can be called a shape-giving or morphogenetic field.

**Holistic concepts of living nature**

To Aristotle it was clear that the creating living[1] can only be described by a holistic approach. To all natural philosophers of his time it was obvious that this wholeness (Aristotle called it entelechy) corresponds to the soul. It is the soul that creates, transforms and moves the physical organism. Everything living differs fundamentally from the non-living nature, because it is animated by a soul. Hence, Aristotle demands that a natural scientist of course must know about the soul to understand a living being. Thereby he had another understanding of the soul than it is usual today. For him, also

a plant is animated by a soul. According to his view a plant has a vegetative soul which is responsible for nutrition, growth and reproduction. Animals and humans have got in addition to the vegetative soul a sensitive soul, which enables them to have perceptions, feelings and desires. Only humans own in addition a rational soul, which allows thinking and reasoning and connects to the spirit. To Aristotle the natural scientist must consider these parts of the soul in order to understand living nature.

Goethe admired Aristotle very much. He knew about his concept of the soul. However, since the term soul had changed due to Christian influence, as a natural scientist he did not speak of a soul as animating principle, but of the type and the nature of a living being. It was his main concern, to bring together nature and appearance. In art he saw the possibility to expand his own perception and scientific cognition in order to get from fragmenting research and materialistic-mechanistic thinking to holistic viewing and an organic thinking. An intuitive perception and the ability to empathize with vivid forms and qualities without determining these by analytical terms can be trained by artistic activity and viewing. In the same way as for example the formative forces of the surface of an abstract sculpture cannot be seized by thing-like terms, but only by an empathic artistic perception, the formative forces of a living being can also only be seized by a quasi artistic recognition of the own inner forces imitating outer forms.

The French philosopher and Nobel Prize laureate Henri Bergson pointed out in 1900 that a vital principle should not be misunderstood as a kind of skilled foreman, who operates and controls in a very complicated manner the complex processes in a physical body. Bergson showed, that any idea of a foreman or a blueprint, which carries out the formation of an organism, only arises from our mechanistically dominated understanding which is used to think a whole as build up from parts just like we think a house, a machine or a mobile phone as build up from parts, which is of course appropriate in these cases. However, according to Bergson the creating nature in living beings would correspond much more to a simple, holistic, undivided flux. Only to the astonished mind it appeared as an extremely complicated activity. In fact, it probably would not be more difficult for an organism to form an eye as for him to lift up his hand.

A little later the biologists Hans Driesch and Hans Spemann came to similar considerations. After intensive researches on embryology, for which Spemann received the Nobel Prize, both came to the belief, saturated by experience, that the vital creating principle can be understood best by accepting an animating soul in the sense of Aristotle. Spemann expressed this privately in a deep convinced way, publicly in his books in a more cautious way, because he knew of course that this introduction of a soul in biology would evoke much contradiction and even outrage by his materialistically minded science- colleagues.

**Morphogenetic fields**

This problem of the vehement rejection also occurred to the English biologist Rupert Sheldrake when he published his holistic concept to the explanation of living nature in the 1970s, although Sheldrake deliberately did not speak of a creating soul, but of a formative, a morphogenetic, field, similar to a magnetic field (his extension of the field concept to morphic fields shall not be considered here). By this he followed a theory by the Russian biologist Alexander Gurwitsch from 1922.

Like Gurwitsch Sheldrake struggled with the question of the reality of morphogenetic fields. After years of reflection Gurwitsch had come to the belief that morphogenetic fields which form the living

beings cannot be understood in the same way as physical fields. As a perspective he formulated: “Therefore, the field concept borrowed from physics will be transformed in an extensive and peculiar way.”[2]

Sheldrake on the one hand works for his hypothesis of the form giving causes with the assumption that "morphogenetic fields are physically real, in the sense that gravitational, electromagnetic, and quantum matter fields are physically real”[3] They are "areas of influence in the space-time structure, which are located in and around the systems."[4] On the other hand the main part of his theory says that morphogenetic fields are a kind of collective memory of habits and forming principles of an organism. So this memory acts beyond the individual organism. To Sheldrake’s theory every single living being takes part in these fields of its kind which span over space and time and corresponds with them by resonance. This would mean that the morphogenetic fields are of a rather spiritual nature.

Although Sheldrake at first avoids the use of a concept of a soul, nevertheless, in the late 1990s he equates soul and field and refers to Aristotle's theory of the soul. In 1996 he published a book with the German title "Die Seele ist ein Feld" (The soul is a field, engl. title: Natural Grace)[5], where he notes: "The soul is the animating principle, that which makes living things alive. […] The traditional meaning of the word soul is far wider than the human soul. The soul is that which makes things alive.”[6]

Overall, however, Sheldrake prefers the concept of the field and avoids speaking of a soul as creating wholeness in living nature. Basically, he believes that the concept of a field established in physics is more contemporary and might easier find its way into biology than the concept of a soul: "I think the concept of fields helps to illuminate or even demystify some aspects of the older use of the word soul. It’s very difficult for us nowadays to recover a sense of what people used to mean by soul."[7] However, it remains an open question to him how fields are perceived and how they can be brought to consciousness: "On the other hand, fields, as usually conceived of in a mechanistic spirit, are regarded as entirely unconscious. The challenge is to see how fields can be related to consciousness."[8] With this Sheldrake touches upon a fundamental question.

**Fields as imitations of the soul**

Without doubt the phenomena of physical fields show an amazing analogy to a lively forming entity. Unlike linear mechanical forces or flat compressive forces fields work simultaneously in the whole room. They act as wholeness. Fields are immaterial; however, they can affect matter. Matter can be structured in the area of a field all of a sudden as can be seen with iron filings in a magnetic field. Physical fields have no firm borders, but, nevertheless, they are real entities. Fields cannot be perceived directly, but only by its effects on matter, for example on iron filings. All these features correspond exactly to what would be demanded for a vivid forming entity.

Yet there is an essential difference to the living: As Sheldrake guessed quite right physical fields cannot reach the consciousness in the manner as this can be the case with living beings. You cannot empathize with physical fields emotionally, you cannot have a living internal image of them, you cannot imitate them, there is no connection with their nature, at least not in the way as this can be the case with a living being. Even with a mechanical apparatus, as for example a steam engine, you can empathize more than with a magnetic field. That’s why physical fields are difficult to understand for us. They excite in their effects fascination and astonishment, however, they also cause a certain

surprise, as for example an iron attracting magnet, similar to a magic trick that you do not understand.

A deep understanding of magnetic fields probably reached the Englishman William Gilbert, who remarked already in 1600 that the magnetic field *imitates* a soul [9]. In fact physical fields have many characteristics of a soul, but the decisive factor is missing: they are not alive. You could say that they are similar to an artificial flower which looks like a real flower, but also is not alive or to a wax figure from Madame Tussaud's Wax Museum. With such wax figures you also cannot unite yourself emotionally and they cause certain confusion.

An analogy of the living to physical fields is undeniable. However, strictly speaking you have to say vice versa that physical fields resemble the living, because the experiencable actually is the living. The theory of morphogenetic fields really transcends the strict limits of mechanistic thinking and represents a meaningful contemporary holistic concept. It leads in the right direction, however, it still requires the by Gurwitsch demanded »extensive and peculiar transformation« of the physical field concept. Otherwise you remain too much with an abstract theory or with an inanimate imitation of the living as William Gilbert formulated it.

**Empathy in a living being**

Imagine, dear readers, the following situation: You are on an expedition in the Indian jungle and have gone away a little from your expedition group. Suddenly a few meters in front of you out of the thicket a big, about three feet high and six feet long, animal appears. You have never seen such an animal before nor heard of it (let us just assume). At a single glance you realize the nature of the animal: its powerful, smooth body, the yellow-brown fur with flickering patterns of black stripes, big paws with sharp, long claws, an aggressive hissing, whereby powerful canines become visible in the wide-open, big mouth, a very alert aggressive look from yellow eyes, which fixes you, a lurking presence ready to jump. Even if you have never seen such an animal before and don’t know anything about it, you are at once fully aware of its nature. The whole being of the animal radiates by its appearance and behaviour an extremely aggressive and unpredictable energy.

Everyone would grasp a tiger in the jungle intuitively in such a way even if he knew nothing about a tiger. Nobody would think to have a timid flight animal or a vegetarian living ruminant in front of him. Empathizing with the nature of a tiger, with his movements, his view and his hissing would cause in everyone approximately the same intuition of his beingness.

This example shows that the grasping of the nature of a living being or of its qualities indeed is a subjective act of cognition that is related to one's own feelings but nevertheless also has a general validity. The intuitive understanding of the qualities or of the nature of a living being thus has a subjective universal validity, as Kant expressed it. So such an intuitive understanding is scientifically absolutely usable and communicable. Descartes' statement that only the measurable, countable, ponderable can scientifically be researched and communicated is thus a false scientific limitation. Qualities and beingness can also be perceived in a similar way by different people, and can therefore be regarded as scientifically relevant.

If you have seized the nature of a being, for example of a tiger, with this knowledge you could also research its skeleton, its musculature, its heart-circulatory system, its digestive system and you would find out that all its physical configurations and functions fit to its nature [10]. All its inner and

outer forming, its appearance, its behaviour, and also the surroundings visited by it, all this is an expression of its nature. This nature can intuitively be seized by empathy and in certain manner by imitation and inner recreating as Goethe practiced it. In this way the nature of a being and its appearance can be brought together.

The essential nature of a living being which causes its holistic, vivid forming is given according to Aristotle by its soul. This living soul includes, unlike a morphogenetic field, not only the form and habits of a living being, but also its dynamic creative behaviour and creative development, in function of its environment. If you would try to work here with the rather static concept of the field, as we know it from physics, you would completely get out of the concrete and living nature and would go into a generalizing abstraction. The concept of morphogenetic fields could then be justified only as an abstract, scientific theory. However, in order to come in living nature to an experienceable field a fundamental transformation of the physical field concept would be necessary in the way as Gurwitsch demanded. Then you could state "The soul is a field".

Is such an animation of the field concept at all possible? - Actually, there have already been some approaches in the past that may lead the field concept to a living and emotionally experienceable form.

**Spheres, atmospheres and fields**

The term field was preceded by the term active sphere, sphaera activitatis. Spheres initially had quite an intense connection to the spiritual experience of people. Much like atmospheres which we can still feel, for example, in some churches, at a sunset or in talks, spheres, for example, the planetary spheres, also had a connection to the experience and the destiny of a person. Spheres were first seen as areas of influence of spiritual powers. Later, also the area of influence of a magnet was called sphaera activitatis.

The term atmosphere arose explicitly in the 17th century, although the terrestrial shell of air had already been described in detail by Aristotle as evaporations of earth and water. You could say the spiritual sphere of a planet became more and more material and sensual. A little later, atmospheres were also seen as smellable evaporations or, in the transferred sense, as emitted qualities of a person, an object or surroundings. By this atmospheres became emotionally experienceable.

Atmospheres can especially be felt when you first enter a new environment, a new room. This may be an open landscape or a closed room. For example you can experience, the width, the sound of the sea, the bareness, the silence of the desert or the impenetrability, the mysterious background sounds of the jungle as very specific atmospheres. When you first enter a foreign flat you can immediately feel, for example, a warm and sheltered, a cool and sober or a wild and chaotic atmosphere. Also in a social context you can feel, for example, a cheerful, an oppressive or an aggressive mood or atmosphere. All this is very familiar to us, even if we often perceive it more unconsciously. We also know that we can influence a currently existing atmosphere. We can creatively arrange our garden, we can furnish an apartment in a new way, or we can try to change an oppressive atmosphere in a talk.

In recent years the experience of atmospheres has astonishingly even become subject to academic research. The German Philosophy Professor Gernot Böhme developed an aesthetic of atmospheres, based on the New Phenomenology which was formulated in the 1960s. Quite in the sense of the

French philosopher Henri Bergson he describes, how the external perception combines with an inner feeling, when sensing atmospheres. So the atmosphere or mood cannot be found in the external surroundings alone and also not without these only in an inner feeling. Only both together constitute an atmosphere. Usually it is difficult to describe an atmosphere in words. Mostly the experiencing of atmospheres disappears when you try to grasp them with terms. Rather you can represent them in an artistic way, for example, by a picture or a poem. Boehme describes them: »What is felt, is a vaguely spatially poured out quality of feeling.«[11] Such a spatially poured out quality of feeling you might call an atmospheric field.

Böhme awards qualities not only to surroundings. He also interprets the quality of single objects as a sum of emitted qualities like form, colour, smell or sound which cause in total a certain atmosphere of an object. He describes such aesthetic qualities with the term affective qualities (German: Anmutung). You might speak of a field of affective qualities.

**Morphogenetic fields as spatially poured out quality of will**

By perceiving atmospheres or affective qualities you practice an artistic, sensitive cognitive attitude which also is required towards living nature. Sensing and guessing the essential inner quality of a living being also requires the connection of external perception and internal feeling. If the formation of a certain atmosphere, for example in a community becomes a habit, you can speak of an atmosphere, which lives there and by this you attribute a certain liveliness to an atmosphere.

Strictly speaking, living morphogenetic fields should not only be associated with the area of feelings, but above all with the area of will, because living nature always is something active and creative working. If Böhme calls an atmosphere a spatially poured out quality of feeling, you would have to call a living morphogenetic field a spatially poured out quality of will. However, this has to do with the concept of the physical field just as little as the free acting of a human being with the mechanical operation of a machine.

Although the former experience of spheres was initially in the background of the development of the concept of the field, the physical field concept, nevertheless, has primarily developed from physical observations, which were interpreted mechanistically. The field theories of modern physics have nothing more to do with the experience of spheres or atmospheres which became finally clear since James Clerk Maxwell. His abstract field equations cannot describe living nature what in the end also became clear to the Russian embryologist and founder of the morphogenetic field theory Alexander Gurwitsch. Starting from the physical field an animation of the field concept is not possible. However, if fields are internally experienced like spheres or atmospheres as a spiritual or mental reality, they may lead to a new perception of living nature.

Besides Gernot Bohme's aesthetics of atmospheres possibly also Lili Fischer's aesthetic field research or Bert Hellinger's family constellation, which he understands as a field effect, may help to come to a lively understanding of morphogenetic fields. However, this will not be discussed here further more.

Soul or field as vividly creating entity?

Soul, entelechy, formative drive - many different terms have been coined since ancient times to describe a creating principle of life. Goethe and Bergson warned against fixating too much on a specific terminology and thinking to have solved the question of living nature by this. Thereby you would only satisfy the needs of the understanding, which is not able to regard a principle of life in

another way than as a skilled foreman or a blueprint. Such a plan would then be interpreted causally or finalistic and would not leave any freedom for the creativity of the living. Actually, living nature could only be grasped by its presence or as Bergson says by the duration of its nature and by its creative approach to the circumstances of its environment. Terms and concepts only counteracted against such an intuitive grasping. Hence, Goethe's maxim was: "Don't look for anything behind the phenomena - they themselves are the teaching."[12]

You may of course still consider a scientific concept for a principle of the living to be necessary and helpful to connect to current science. The question then would be whether such a scientific concept should be build up on fields or on a soul.

Fields fulfil, as shown, the main criteria of a vital principle. The problem here, however, is to emanate too much from inanimate physical fields and by this try to build a theory of life on something inanimate. In this way you may perhaps generally be able to explain the morphogenesis of an organism on solidifying habits as creating fields, the nature and the constant creativity of an individual living organism, however, cannot be seized in this way.

The soul is the epitome of the individual and of the living. It is characterized by the nature of a living being and by individual creativity, change and development. The soul is thereby virtually predestined to enable an experience of the creative living and an understanding of its subjectivity. Here the revolutionary challenge, however, is to introduce the activity of a soul in a materialistic-mechanistic science.

In spite of all rejections by orthodox science the concept of morphogenetic fields as a scientific theory probably can connect easier to the current natural science than the idea of a formative soul. On the other hand, for an experiencing understanding and a more practical scientific research of a vividly creating living it certainly would be more helpful to take up the Aristotelian doctrine of the soul and connect it with the artistic-scientific methodology of Goethe.

Rupert Sheldrake's concern, at heart, also is to animate nature again in the Aristotelian sense and to experience living nature with Goethe's scientific methodology. He often refers to Aristotle's doctrine of the soul, identifies Aristotle's vegetative soul with his morphogenetic fields [13] and describes how especially Goethe's writings on botany and the therein described holistic science gave the first impulse to him to develop his concept of morphogenetic fields. In his biography he writes: "I discovered that at the end of the eighteenth century and the beginning of the nineteenth Goethe had had a vision of a different kind of science, a holistic science that integrated direct experience and understanding. […] This filled me with great excitement, the idea that there could be a different kind of natural science."[14] From that moment on he was very invigorated by this prospect of such a new science. Though in the following time Sheldrake has moved away from this original impetus of direct experience and understanding towards an abstract scientific theory, however, his deeply held belief can be seen by his statement: "The soul is the animating principle, that which makes living things alive."[15]

Footnotes

1 In this text "the living" means the realm of vital and vitally forming forces.
Cf. Merker, Werner: Vom mechanistischen zum organischen Denken, Münster, 2015.

2 Gurwitsch, Alexander: Über den Begriff des Embryonalen Feldes, in: W. Roux' Archiv für Entwicklungsmechanik Sl, 1922, P. 393.

3 Sheldrake, Rupert: The Presence of the Past, London, 1988, P. 107.

4 Sheldrake, Rupert: Einführung, in: H.-P. Dürr (Hrsg.), Sheldrake in der Diskussion, Bern, München, Wien 1997, S. 18.

5 Sheldrake, Rupert u. Fox, Matthew: Die Seele ist ein Feld (engl: Natural Grace), München 2001.

6 Sheldrake, Rupert, Vox, Matthew: Natural Grace, London, 1996, P. 65.

7 Ibidem, P. 32.

8 Ibidem, P. 32.

9 Gilbert, William: de Magnete (Original 1600), London 1900, Buch 5, Kap. 12, p. 208.

10 Cf. Kranich, Ernst-Michael: Wesensbilder der Tiere, Stuttgart, 1995.

11 Böhme, Gernot: Atmosphäre als Grundbegriff einer neuen Ästhetik, Berlin, 2007, S. 292.

12 Goethe, Maxims and Reflections, No. 892.

13 Sheldrake, Rupert, Vox, Matthew: Natural Grace, London, 1996, P. 71.

14 Ibidem, P. 7.

15 Ibidem, P. 65.