

On Fields and Forms

A review of the book “The Presence of the Past” by Rupert Sheldrake

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Why does a man, whose genome differs minimally from that of a chimp become a man and not a chimp? How to explain the regeneration of injured tissue, how do organs get their specific forms and what are the mechanisms, that control these developments?

These and other questions, which are not or unsufficiently clarified up to now, are tried to be answered by the British biologist and author Rupert Sheldrake in “The Presence of the Past”.

It is a completely revised edition of the book which was first published in 1988.

Today we know a lot about genes and how the DNA codes for proteins, but we have little idea how the essentials of life finally join together to build each of the individual forms “and in relation to morphogenesis itself, it is most unlikely that the overall sequence of events is isomorphic with the genes.”

Of course Sheldrake does not deny the theory of inheritance, but he does not believe in the conventional explanation of the evolutionary basis of morphogenesis in terms of the inheritance of chemical genes. Instead he contrasts the mechanistic approach of biology with his “hypothesis of formative causation”.

In physics, fields play a significant role in the description of nature. There we talk quite naturally of gravitational fields that give things their weight as well as electromagnetic fields, which are responsible for the organization of material systems. Even without the possibility of direct observation no one seriously doubts their existence. Based on the existence of these physical fields Sheldrake maintains, that simultaneously with the formation of a new material structure – whether animate or inanimate – a field is generated, which influences the further development of this specific material structure and is in turn affected by the structure itself.

This certain field ensures, that a once chosen path is stabilized. That is, morphogenetic fields include a memory, which holds all previous developments of this certain structure and is thus cumulative. These fields are also “not transcendent forms, but immanent in organisms”.

Sheldrake does not tell us how and why these fields are emerging, but also “physics cannot explain the nature of the different kinds of fields in terms of anything else physical, unless it be in terms of a

more fundamental unified field, such as the original cosmic field.”

Since these fields already include the ultimate aim of the certain structure and hence are teleologically organized, they are in a certain way similar to the Aristotelian concept of entelechy. But due to its evolutionary character they differ clearly from the Platonic ideas, which are presented as eternal and uncreated.

In addition to these properties the fields are in contact with other fields independent of the temporal or spatial distance. Sheldrake calls this “morphic resonance”, which “differs from the kinds of resonance already known to science...”, because it “does not involve a transfer of energy from one system to another, but rather a non-energetic transfer of information.”

First the morphic resonance ensures the emerging of a new specific structure. In the following this structure is equipped with a certain potential. If this is an animal organism its structure and its field respectively is in resonance with the morphogenic field of the certain species. As soon as this potential has been realized, the morphic resonance ensures, that the certain structure of the organism is maintained. The continuity of each individual structure – while it does not matter whether it is an electron or a complex organism – is warranted by self-resonance “with its own past patterns of activity. All organisms are dynamic structures that are continuously recreating themselves under the influence of their own past states.”

In the Early 70s of the last century, the Chilean biologist Humberto Maturana coined the term autopoiesis to describe the self-organization and self-preservation of living systems. Sheldrake's idea of self-resonance thus could be understood as an autopoiesis-concept extended by the dimension of morphogenetic fields.

Since for example animals share the collective memory of their species, according to Sheldrake a once learned behaviour must be learned more quickly by all individuals of the certain species in the future. This also applies to the synthesis of not previously existing substances.

The more often a specific substance – e.g. an active ingredient – is synthesized, the easier and faster it should happen in the future all over the world. According to Sheldrake this has been in part confirmed by scientific surveys. Other scientists deny

that vehemently. In Sheldrake's homepage this crucial point is impressively illustrated by a dispute between him and the biologist Steven Rose.

Sheldrake is not content to apply his theory solely to the morphogenesis of forms, but he extends it consistently to other areas. Thereby the focus is on the memory, the process of learning as well as the organization of animal and human societies.

Apart from a few exceptions – one is the German physicist and bearer of the Right Livelihood Award Hans Peter Duerr – Sheldrake's theses evoked a storm of controversy in the scientific community. This is due firstly to the fact that biology – in spite of quantum physical knowledge – still moves within the mechanistic-reductionist paradigm; on the other hand it originates from the theory itself. To this day Sheldrake's theory in spite of many experiments is still lacking scientific evidence and some scientists generally deny the falsifiability - according to Karl Popper - of his theory.

Moreover the biologist and former member of the Royal Society fails to explain the emergence of the completely new, while his fields are distinguished precisely by the fact that they are of a more conservative and habitual nature and have the properties to stabilize a once chosen path. Sheldrake's explanation that aside from inherent goals or attractors morphic fields contain creativity itself, which “involves finding new ways of reaching these goals” is not really convincing at all. But in spite of these objections, Rupert Sheldrake is an intelligent and creative mind, who has succeeded in bringing a breath of fresh air to a partially gridlocked biological research, although his hypothesis is not originally his and has been represented by others before him.

If it wants to retain its credibility and not lapse into dogmatism and even worse fundamentalism instead, science must remain open to unconventional thinkers who are not consistent with the predominant paradigm. Such creative minds can in the best case provide the impetus needed by mainstream science, in order not to solidify in traditional ways.