

Morphic Fields

Conversation with Rupert Sheldrake
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C.O. Scharmer: Rupert Sheldrake, what underlying questions does your work address? And how have these questions evolved in your own life?

Rupert Sheldrake: The underlying question really concerns the nature of life. The conventional view is the mechanistic theory, that living organisms are nothing but complex machines. I became dissatisfied with that view at quite an early stage in my biological career. I think I became disillusioned with it at an emotional level through dissection, and through the fact that we killed all the animals we studied.

I.The Biology I Learned Involved Killing Everything First

I did biology because I loved animals. So the personal experience of finding that I was studying animals because I liked animals, and then finding that the kind of biology I learned involved killing everything first, and cutting it up—that was a kind of emotional shock. I didn't really articulate it, but it was an undercurrent. Then when I was an undergraduate I came across the writings of Goethe and his more holistic approach to science. This gave me the idea of the possibility of a holistic science, because it was the first time I'd come across that idea.

COS: How interesting. So Goethe was one of your sources of inspiration?

Rupert Sheldrake: Yes, the first. I hadn't heard of any other holistic writers when I came across Goethe. No mention of holistic ideas occurred in my biology course at Cambridge. So great was the impact of this that it made me doubt whether I really wanted to go on doing science at all. I began to feel that science as we know it had gone down the wrong path, that it was too narrow.

¹ The conversation with Rupert Sheldrake took place as part of a global interview project with 25 eminent thinkers on knowledge and leadership. The project was sponsored by McKinsey & Company and the Society for Organizational Learning (formerly the MIT Center for Organizational Learning). The interviews and the summary paper are accessible as free downloads from www.dialogonleadership.org.

I managed to take a year away from science. I got a fellowship at Harvard for a year where I studied philosophy and history of science. I was trying to get a broader view to find out what was going on. That was very helpful. I came across Kuhn's writings, and I came across the history of science and the perception that models of paradigms of reality change from time to time. I came to see that the mechanistic theory of life is not the truth—which is what it had been presented as in my education—but a model of reality which was useful up to a point, but which I thought we needed to go beyond. Much of my subsequent work has been trying to go beyond it.

II. Morphogenetic Fields: A Field Theory in Biology

At first, I worked at Cambridge for ten years on plant development, plant multigenesis, which is where I came across the idea of morphogenetic fields, the form-shaping fields. It seemed to me that we really needed a field theory in biology. Then I became aware of work on Gestalt psychology in social fields, and I saw that there was potential for much wider field theory. It wasn't until some years later that I began to work these ideas out in detail.

Intuiting the Whole at the Periphery: Studying Agriculture in India

After Cambridge I spent several years in India working in a practical capacity in an agricultural institute, where I was doing holistic research in the field. Agricultural researchers are inherently holistic. You have to take into account the whole plant, the farmers, the weather, the insects, pests, and so on. I did that partly because I wanted to be in India and partly because I wanted to work in agriculture. **These very low level sciences, the ones that are at the bottom of the pecking order of the sciences, are actually much closer to practical reality, and therefore they're forced to be more holistic, and I liked that.**

When I was in India I developed these ideas and wrote my first book, the first draft was in India, *A New Science of Life*, which came out in 1980. I tried to generalize the idea of morphogenetic fields, give it a new interpretation to put this field theory on an evolutionary basis. In it I'm trying to sketch out a practical framework for a holistic biology. Because I'm empirically minded, and I've spent most of my career doing experiments—I like doing experiments, I like designing experiments—through my time in India I came to appreciate the need for cheap and simple experiments that work in the real world. It's partly a theoretical endeavor and partly a practical endeavor to find simple experiments where one can actually open up new areas of inquiry.

COS: What is the relationship between morphic fields and the Goethean notion of *Urphänomen*²?

Rupert Sheldrake: Well, I take the Goethean notion to be rather Platonic than the notion of morphic fields. He was not an evolutionary theorist. He was at a pre-evolutionary theory. A lot of people were dealing with mythology and anatomy in the early 19th century. They were Platonists: they thought there were ideal forms for the different organisms. Goethe was not really a Platonist because he said that you could perceive or intuitively grasp this idea of form. But I think there's a strong platonic flavor to it nevertheless.

COS: In what sense would that be?

Rupert Sheldrake: Well, the idea that there's an archetypal form underlying the various manifestations of variations of leaves. It's as if there's a kind of platonic form of which these things are variations.

COS: Or that there is an underlying *attractor* to use another language.

Rupert Sheldrake: Well, yes. I don't think he would have used that language though. He was concerned with form, that relates him to the morphogenetic field tradition, because it's really dealing with the problem of form. Once you have the idea of forms and formative fields, there are two ways you can interpret them. Most biologists would interpret them in a kind of Platonic spirit: morphogenetic fields are fields, therefore they must be gotten by mathematics; therefore we should work out mathematical models of these fields. Many scientists tend to think once you've got a mathematical model for something, that mathematical model is a kind of eternal truth. Math doesn't develop, you see, it's usually conceived of in a platonic spirit by mathematicians. Many physicists and mathematicians are either implicit or explicit Platonists. And the people who've done mathematical modeling in more morphogenetic fields in biology are mostly mathematicians who've turned biology, bringing with them a kind of platonic conception.

The Development Of Form Is A Top-Down Process

I'm not a mathematician, I'm a biologist, first and foremost, and for me evolution is primary. If you have fields of living organisms or fields of social groups or fields of animal behavior, then these fields must have evolved. The evolution of fields then raises the question of how fields are inherited. Here there are two options. One was the conventional approach, and biologists would say all inheritance is genetic, except for the cultural inheritance in man. Therefore, the fields are nothing but programs in

² *Urphänomen* means: archetypal (or elemental) phenomenon.

the genes. It sort of collapses the fields into molecular mechanisms. **But the whole point of the field concept in biology is that you can't reduce form and the development of form to molecular mechanisms**, because the molecules alone can't explain it. The development of form is not a bottom-up process, it's a top-down process.

Morphic Resonance

The third approach, my approach, is to say that the fields are real but they evolve. Therefore, they have to have a kind of memory within them, which is the process I call morphic resonance. The difference, I think, from Goethe's approach is that it's evolutionary. The Steiner people, the anthroposophists, who follow Goethe, have something called etheric formative forces, which are a bit like a field theory. But they're ambiguous about how the fields evolve. Whenever I've asked Steinerians, do you conceive all these fields as evolving? They usually haven't thought about that. Insofar as Steinerian theorists try to understand these fields, they try to understand them in terms of projective geometry, a kind of mathematical modeling. They have their own kind of mathematical modeling. But that, again, takes one back into this platonic pole of thought.

III. On the Nature of Morphic Fields

COS: What is the nature of the reality of morphic fields? What really constitutes a morphic field as such?

Rupert Sheldrake: Well, it's a difficult question even for the known fields of physics. If you say, "What constitutes a gravitational field as such? Or an electromagnetic field as such? Or a quantum field as such?" you run into big problems. Because we have our descriptions of fields, and in the case of those fields we have mathematical models of the fields which enable you to make predictions. But what is the field in itself? Well, this is something physics hasn't answered, because the attempt to find a unified field theory, for example, super-string theory, is an attempt to find a yet more fundamental field in terms of which these other fields can be explained by the rolling up of spatial dimensions.

Then you could say, well, what does the super-string field consist of in itself? The closest one could come is to some kind of pattern in space or space-time. When Einstein was asked, "What do the fields consist of? Are they made of matter?" He answered no, matter is made of fields and energy. Maxwell's attempt to say what the fields consist of was to make a mechanical model of them in terms of subtle matter, the ether. But Einstein regarded ether as superfluous. That left the fields as a free-floating ontological status. The fields just are. They have their own kind of reality. But what is it? That's an unsolved question.

When we come to the nature of morphic fields, it's not going to be easier to answer what they consist of. The question is in the known field of physics, what decades of research and thousands of skilled and highly intelligent people have worked in this area, and they still don't know what they are in themselves. So I would say that **regarding morphic fields, one can say something about their properties. They're probabilistic in the way they work, they're within and around the systems they organize. They have attractors in them. You can model many of their properties in terms of attractors, things which draw the system towards a particular form or goal or end state or end cycle or end structure. The morphic resonance is non-local in the sense that I'm suggesting that some of their systems come in from another one's cross-space or turn. The fields organize systems in a nested hierarchical way,** the field of molecules into the fields of the atoms. The fields of the atoms include those of subatomic particles, and so on. The field of the society includes the organisms, those include organs, those include tissues. It's a **nested hierarchy** of organization of nature, which all holistic world views recognize. Insofar as each whole is more than the sum of the parts and is organized, I'd suggest, by morphic field, then the fields themselves have this hierarchical organization.

COS: Does that mean that the causal arrow is only in one direction, from the larger to the lower parts and levels? Or would the causal relationship be in both directions?

Rupert Sheldrake: It's in both directions. The whole contains these parts and is obviously influenced by them. So it's a two-way causal relationship. In some ways, this theory of mine fits with a variety of holistic views, like Arthur Koestler's notion of holons. In some ways it fits with quantum physics. It's closer to quantum physics than anything else. When I discussed these fields with David Bohm, he had very little problem in seeing that there was a need for a concept such as this in biology. He would then tackle them in terms of implicate orders or quantum potentials. He had two or three different approaches to these fields. But I would think that these fields are closer in respect to quantum field theory than anything else in physics.

COS: Are these morphic fields something that you invented and developed on the conceptual level? As David Bohm said, there is a need for such a concept. Or is it something that you experienced with your own senses?

Rupert Sheldrake: Well, to start with, I didn't invent the concept of morphogenetic fields, it was already there in biology since the 1920s. When I was working in developmental biology, I found this concept to be very valuable. Actually, I found a much clearer statement of the whole concept, not in the works of von Bertalanffy and Waddington and the theorists of biology, but in the work of Driesch. I read the works of Hans Driesch, the famous German embryologist, and I found his arguments for the existence of a holistic organizing factor to be extremely powerful in arguments in terms of regeneration, the regulation of embryonic growth, and so on. I found these arguments overwhelmingly powerful. They showed something must be there, which was later called a morphogenetic field. I found that, although there was a general

recognition of a need for this concept, no one knew what they were or how they worked.

In part, I came to it through the unsolved problems of morphogenesis, which I spent many years working on in plants. And partly, I think I had a direct vision of these fields in relation to social groups. **Sometimes watching flocks of birds flying in the sky and seeing they way they all turn together, it was almost as if I could see a field around them.** I remember once I was looking out my windows in Cambridge, where I was a fellow, and there was a party of choir boys walking past the King's College. They were walking two by two. One choir boy was left behind. He was tying his shoelace. He was terribly disturbed not to be in this group. Then he ran and got back into his place. And you could feel the whole group coalesce together. It had a form, he felt a real need to be in the right place in it. So it was partly seeing it in human groups and in animal groups. It's only more recently that I come to think about actually feeling these fields. I've just in the last few months developed a new set of experiments designed to test these fields through the actual feeling of them.

COS: Can you say more about that?

A New Set of Experiments

Rupert Sheldrake: Yes, I can briefly outline them. This is not something I've published yet. I've just developed the method, but it's something I've tried out so far in about 50 experiments. And this has to do with the field between two people. This is the simplest form of social field. Say I'm talking to you. It's a common experience: you're talking in the street and someone comes along. It's considered rude to walk between two people, you walk around them, because there seems to be something in between them, a special space. But I think it's a field, you see. So in the experiment I have two people stand opposite each other, looking at each other silently. And a third person, blindfolded, walks along a corridor-like space, and as part of this, they pass the two people facing each other. They cut through this field, you see. They're blindfolded. Can they feel when they're going between two people? The answer is most people can.

COS: Wonderful.

Rupert Sheldrake: It's a very simple experiment. What I've found with this experiment is that most people can feel the field. I can feel it myself. But I haven't yet eliminated the obvious sort of skeptical things, how do you know it's not just body heat, and so forth. So I've got a number of control experiments I'm planning at the moment to test this, where you can eliminate the chance of body heat, have people looking at you only through windows. You have a long corridor with glass panels or windows. You can do it through glass where the radiation, infrared radiation would be reduced or eliminated.

IV. Morphic Resonance and Precognition

COS: In your work you developed the idea of morphic fields based on memory of the past.

Rupert Sheldrake: Yes.

COS: Do you think another type of field exists which would be a memory of the future? Or which would be about how the future comes into the present rather than just how the past comes into the present?

Rupert Sheldrake: Well, I think the future has an influence on the present in several different ways. I'm not sure that I'd call it a field or not. Because the influence from the past is not a field in my theory, it's a resonance.

COS: Okay, then let me rephrase my question. In terms of your notion of resonance, do you think there could be another type of resonance which would be about the coming into presence of the future?

Rupert Sheldrake: Well, if there is, I don't think it works in the same way as morphic resonance, which is really a habit principle. I don't think that it's future habits that have an influence. If there is an influence in the future it's not of the same kind as from the past. That, at least, is my hypothesis. If you have an indefinite influence in the future, unlimited by space or time, that is totally untestable, because we don't know what's going to happen in the future. All my tests to this day are based on an accumulative pattern of influence from the past. None of those tests would work if the influence were equally from the future. The reason that I think there may be an influence in the future is simply empirical. There seems to me to be good evidence for precognitive dreams, for various kinds of presentiment or precognitive premonition. This has to do with the range of phenomena that animals and people exhibit. I have a section on it in my book.

COS: Yes, I saw that.

Rupert Sheldrake: It's on animals' precognitions. Some premonitions may have physical explanations, others may depend on premonitions. It's not an area where I have any particularly well-developed theory. The morphic resonance theory explains patterns, habits, and memories, but it's not a theory that explains influences of the future. So either one would need to modify and extend the morphic field theory, the morphic resonance part of it, to deal with the future, or one would have to modify one's notion of time and their present. But those are not theoretical areas I've spent much time looking at.

V. On The Coming-Into-Being Of Morphic Fields

COS: What is the process of coming-into-being of morphic fields? What is the “production mechanism” through which they come into being?

Rupert Sheldrake: Well, once a pattern has occurred then the theory says it will tend to occur more rigidly the second time, as long as what happens the second time is similar to what happened the first time. The open question is, what does cause a pattern to evolve in the first place, what creates the very first pattern? And here I leave the question open. I think that the way new fields come into being can be explained in several different ways or in several different models. One is a bottom/up model that as newer creativity wells up from a lower level, a higher lever emerges. This is a kind of imagined synthesis from lower levels by a kind of upwards leap. The materialists will always say that this is due to chance.

The other kind of model, the top/down model, where the new fields emerge either from the higher level may have a field which helps originate new species within it. So you may have a higher level field which can give rise to lower level ones within it through some kind of creative capacity within the field. Or there may be creative principles in the universe. **There must be creative principles in the universe, but these may not depend on existing fields at.** They may be a kind of creative intelligence or consciousness or many creative intelligences or consciousnesses at work in the universe, corresponding to traditional ideas of genius, angels, gods, devas, and ultimately, a divine creative source. I happen to believe there is a divine creative source. But I think the question of creativity in evolution is not really a scientific question, it's a metaphysical question. And my theory of morphic resonance really only deals with repetition, not with origination.

VI. Social Fields

COS: What relevance might your work have for human social reality, which would be organizations and society? Do you see an applicability of these concepts to the everyday social experience that we have?

Rupert Sheldrake: Well, I think they have a theoretical role to play. I think to understand any society we have to understand how the members of the individuals are linked together into that social group. Many traditional models of society have the organism as the metaphor. The whole society's like an organism, or a superorganism. This is also used in biology in relation to insect societies, like wasps and bees. So if you have an organism, the whole society is like an organism, or the family is like an organism, or the nation is like an organism, or the team is like an organism, or corporation is like an organism. The very name, corporation, implies it's a whole body. Then I would say that the morphic field concept is a theoretical basis for understanding what it is about these social groups that are more than just the

collection of individuals within them. The morphic field concept gives some notion as to how they work, how they link together in the present through sort of spatial interactions, and because of **morphic resonance, it means that each social group has a kind of memory. It means there's an invisible presence of the past in any social group.**

In traditional societies this is explicitly recognized by the attention and honor given to the ancestors as an invisible presence within the social group. Rituals are very much concerned with connecting the present members of the group with the group in the past, to original primal events. In religious rituals, they are things like Passover, holy communion. In secular events, they are things like the Thanksgiving dinner in American or various secular celebrations of national days or republic days. So I think that the nation fields make sense of social groups in that way.

What I'm doing at the moment is exploring the empirical facts of these. Some people would say, well, you might like to call it a field, we'll call it a structure. They'll call it an organization. These are just different words for pattern of relationships. These are just different words, and they're sort of metaphors. **But no, I think the field concept is more than a metaphor. I think it involves actual invisible connections.** And in order to show empirically that this is so, one has to show that communication can still occur when all sensory avenues of communication are removed. Which is why I've become interested in telepathy. I think telepathy involves an influence between members of a social group. Perhaps all cases of animal and human telepathy which I studied depend on social bonds. Most forms of human telepathy – for example telephone telepathy, when you know who's going to call and the phone rings – occur between friends, colleagues, husbands and wives, parents and children, brothers and sisters. **They don't occur between strangers very much, there has to be an emotional or social bond for telepathy to work.** The kind of telepathy I studied in animals, dogs knowing when their owners are coming home, for example, depends on their being a strong bond between the dog and the person. The dog doesn't know when other people are coming, or at least it doesn't react to it – but particular people with whom there's a strong bond, it seems to pick up an influence, their intention, at a distance. In the social area, I think that --

COS: Developing this form of knowing really is the critically enabling condition, right?

Rupert Sheldrake: I think so, I'm not sure. This is what I'm investigating—the natural history of telepathy. Because I think it's very relevant to social bonds, and I think that the telepathic connections enable one to distinguish a field theory from other theories that just depend on ordinary physical, chemical, and linguistic interactions. **It suggests that fields are real in the sense that some kind of interconnectedness exists, which could even work at a distance.**

COS: The bonds.

Rupert Sheldrake: The bonds, yes. I think the bonds depend on the field, the major fields, if you like.

COS: One obvious place we can see fields in the social world is when we look at the way people conduct conversations, right? And we also can see certain attractors. We have the “talking nice” style, we have the discussion style, we have the dialogue mode. We can really see the different field logics of conversation. People can choose which one to operate from. If that is true, a given group could choose amongst different fields of field logics in which they could operate. Have you seen that elsewhere, that in one group there could be more than one field or pattern in which they could operate?

Rupert Sheldrake: Certainly this something I’ve thought about a bit. It is something I’ve even explored practically with Ralph Abraham and Terence McKenna. We did two books of trialogues, which were three-way conversations, and our first book of trialogues is called *Trialogues. At the Edge Of the West*.

One of the areas that I think is most interesting from this point of view is sports, in team activities. There are sports teams that contain fifteen people, like rugby teams, a dozen people, like cricket or soccer teams. There are sports with different numbers of people in the teams. There are doubles, like in tennis, a team of two. You can find in the range of sports areas where people have to cooperate in a field-like way. Michael Murph’s book *The Psychic Side Of Sport*, he interviewed football players and other sportsmen who were playing team games, and found there were many examples of seeming telepathy that were reported. When a team was working together harmoniously, there was a kind of rather mysterious way in which they would be coordinated that seemed to go beyond the normal senses. I think the advantage of looking at sports is you’re not dealing principally with linguistic communication. We’re dealing with something much more fundamental. They’re running around throwing balls to each other and stuff. This is bodily coordination. It’s much closer to the animal model where a lot of group dynamics are to do with coordinated movement and coordinated activity. So I think in sports we see these fields in a very fascinating and interesting way. I think that that’s an area where more research would shed a lot of light on the nature of groups. The advantage of different sports is each sport sets up its own rules, each kind of team has its own kind of field. We’ve already got a whole number of experiments working in sports with decades or centuries of historical influence, and I would say morphic-resonance and collective memory is built into each of these sports.

COS: But the phenomenon that you were just about to describe—when these teams are operating at their peak performance, that would be something which you couldn’t really fully explain with morphic resonance, right? Because what they are doing is not just based on the experience of the past, but they are sort of operating from a different place.

Rupert Sheldrake: The morphic field is the spatial. It gives spatial coordination in the present or around the present. Morphic resonance is the memory that gives the field its basic structure. So really what's important in the team is the field itself, the morphic field, coordinating them all together. Just as in a turning flock of birds, it's the field that matters. The field has a general structure given by its morphic resonance from the past, but it is the communication through the fields which I think is important there.

COS: I see.

Rupert Sheldrake: And it's through these fields that you get something like telepathy. **I would say that there's something like telepathy going on in these teams.**

COS: On a collective level.

Rupert Sheldrake: Yes.

VII. Morphic Fields and The Four Aristotelian Causes

COS: How would you position the concept of the morphic field in terms of the four Aristotelian causes? Would that be equal with *causa finalis*? Or would that rather be both *causa formalis* and *causa finalis*?

Rupert Sheldrake: Well, both, actually. In terms of the development of the plant, the cell of the plant was both the formal and the final cause. It gave the plant its form and also attracted its mature form, which was final cause. The full title of my hypothesis is "the hypothesis of formative causation." Formative causation is a direct allusion to formal causes. I think that it's precisely the lack of formal causes in mechanistic science that make it incapable of dealing with any of these problems in organizational form. Mechanistic science in the 17th century confined itself to *causa materialis* and *causa efficiens*. It meant that most of the fundamental problems of biology are insoluble in those terms and only with something like a formal cause can we actually think about and solve these problems. I think it's very interesting that in modern science of dynamics, final causes have been reinvented in the form of attractors.

COS: Of attractors?

Rupert Sheldrake: Attractors.

COS: Why would that be?

Rupert Sheldrake: Well, an attractor by its name attracts. An attractor is a state in the future towards which a system is drawn.

COS: I see. I would have thought of attractors as *causa formalis*. Because they represent a body of principles against which a system gravitates.

Rupert Sheldrake: They are a combination of both formal and final causes, because they're an end towards which the system moves. Aristotle said the soul motivated organisms by attraction. Newton talked about gravitational attraction. The French hated it because they said that to use the word attraction is completely animistic, it's something only organisms can do. This is not a mechanistic term. The term attractor or attraction has always had this finalistic ring to it, and I think the way in which attractors have been reinvented, it's the end towards which something moves. It's essentially the same things as what Driesch meant by entelchy, that which has the end within itself, which draws things towards the whole. **So in modern science essentially, if you read Driesch on entelechy, just change the work entelechy to attractor and it's the same thing.**

COS: I see. Entelechy is really also something in between *causa formalis* and *causa finalis*, right?

Rupert Sheldrake: Yes, exactly. And so is Aristotle's concept of the soul.

COS: Yes. Could you conceive of a future field theory that would take into account all four Aristotelian causes? Say, for social reality formation?

Rupert Sheldrake: Yes, I don't see why not. I mean, existing field theories take them into account, even electromagnetic field theories --

COS: Take all four causes into account?

Rupert Sheldrake: Well, the problem with electromagnetic fields is it's not exactly the status of attraction. If you had a magnet, and as it attracts things towards it, the field is an attractive field or a repulsive field with a magnet. And if you hold something near a magnet and let it go, it actually moves towards the attracting pole. Now is that an attractor? Is it a final cause? It's pulling it, it's pulling it from the front, it's not pushing it from behind. I think that field theories provide to some degree a final cause through the attractor. They provide efficient causes insofar as they contain energy or bind things with energy. **I think a field theory, particularly a developed morphic field theory, or a social field theory, would in fact include all the causes.** It doesn't deny the material constituents or the efficient causes, the energetic causes.

VIII. Morphic Fields are Local

COS: Okay. My second to last question: the field is something which has a boundary, right? So it is something which has an inside and an outside. How does that relate to the principle of non-locality? Do you know what I mean?

Rupert Sheldrake: Yes. I think it relates to the principle of non-locality in your question of what is part of the same system. In quantum non-locality, for something to be part of the same system, they have to be part of the same system to start with. For example, two photons that come from the same atom move apart at the speed of light and are non-locally connected. But that's because, according to quantum theory, they're still part of the same system. They're not equally linked to a lot of photons in the universe, but only to the system of which they've been a part to start with.

COS: So you have boundaries of that system, but they're just non-local.

Rupert Sheldrake: No, they're local. **Morphic fields are local; morphic resonance is non-local.** Morphic fields are local in the sense that the morphic field around a cat or around an oak tree is within and around that organism. The morphic field in a social group is within and around that group. However, if one member of the group travels somewhere else, then he's still part of that group. They still remain part of that group. So it's local in the sense that it doesn't apply to anyone, anywhere. It applies to this group which have been a coherent whole in the past. When one member travels away, they still remain part of the same system as in quantum theory. They're non-separable, they're entangled, they're non-local. But non-local doesn't mean with no differentiation equally present all over the universe. In quantum theory it doesn't mean that, nor do I mean that when I'm talking about morphic field effects.

COS: What do you consider the most significant questions for future research?

Rupert Sheldrake: You mean by me or by anyone?

COS: No, no, by you, and particularly in respect to the domain we have been talking about.

Rupert Sheldrake: Well, I'm still mainly trying to find experimental methods of exploring these fields. I'm trying to demonstrate that there really are morphic fields, or fields of a nature that science doesn't at present include. People might call them by different names. I'm concerned with demonstrating the existence of these phenomena, and to find simple experiments whereby one can explore their nature more fully. Unless we have more empirical data about what's going on with these fields, it's hard to build convincing detailed theoretical models.

So one is to explore the nature of the fields in space, which is some of these experiments I'm now doing in telepathy. **The other is to explore the nature of the fields in time. In other words, how does the morphic resonance component influence work across time? Is there indeed a cumulative memory of nature as I proposed?** And if one finds experiments that give consistence results, then you can change variables and investigate what affects them, then get more empirical data. Which would help in model building. I'm not mathematically inclined, and I have no wish to build mathematical models myself. If those fields of inquiry were compared with magnetism, then I would think of what I'm doing more like Faraday's

investigation of electricity and magnetism and their interrelationships. But I'm certainly no Maxwell. Maxwell came later and gave a theoretical formulation to all this.

I think that morphic field theory is not a particularly well-developed area. That's partly because we're dealing with phenomena that people haven't thought about much or investigated. **These organizational problems, these structural problems have been rather eliminated from mechanistic science. They didn't fit into this system of explanation.** So there's been very little theoretical or empirical inquiry. We're very behind here. This is like a new field of research just beginning. It's still in its infancy, like electromagnetic field theory was in the early 19th century. But I think it could develop a great deal more. So I think we're still at the stage of building the foundations, which is establishing the nature of the fields through theoretical modelling. You need something of a theoretical model, but I think at the moment we need more empirical data so we can build up better theoretical models.

IX. The Power of Intention

COS: And the role of intention? Wouldn't that also be one significant domain of research in social fields?

Rupert Sheldrake: Yes. This is one of the things I'm looking into at the moment. You see, **when a dog knows when his owner is coming home, I think it's the affects of the owner's intentions. The dog is feeling the intent. Another thing I'm investigating is the sense of being stared at. The feeling that somebody's looking at you from behind.** That's to do with attention, and probably with intention, as well. I think the mind is not confined to the brain, but it extends around the brain. The direction in which the mind reaches out from the brain to touch things in the environment depends on the intention, the kind of directional part of the mind. I think that's underlying the feeling of being stared at. That's why I'm so interested in that phenomenon and empirically investigating it. Have you seen my book *Seven Experiments*?

COS: Yes, I have.

Rupert Sheldrake: Well, my current research is really looking more to intention, the power of the gaze, human telepathy, fields between people, and the detection of these fields. I'm really looking empirically at these phenomenon in the human realm. And what underlies that inquiry is a model of the mind, the extended mind, to do with the notion that the mind reaches out beyond the brain.

COS: And beyond the physical organization.

Rupert Sheldrake: Yes, beyond the physical organization of the body. One aspect of it would be the social mind, if you like, or the group of the social field of which we

are part. This has theoretical and practical implications. For example, Bert Hellinger's work on family field care, family therapy. You must know of his work.

COS: Yes.

Rupert Sheldrake: It's very interesting. He works with families as fields. I've had several dialogues and discussions with him. He's the closest to what I'm doing that I've come across in terms of the application of social field theory to social groups. The first thing he does is something other family therapists do. You arrange the different people who represent different members of the family on a stage, so you can see the spatial relationships between them. Then he investigates these relationships and part of it is an exploration of what's going on in the family. It's not just a theoretical model on paper, there are actual people standing there. Then he asks the people standing there how they feel in that position, and you become part of the field. You said, have I experienced fields, I have. When people do this, you actually feel that you're part of that family field and you're standing in for a brother or father or something. You feel the field and the awareness of the people of the field is part of the thing. He thinks that these family fields have an inherent memory, that the structure of the field depends on what happened in previous generations in the family. Morphic resonance fits very well with that aspect. So I would say the closest application of these ideas I've ever come across is in Hellinger's work. You have a big advantage being German because his work is hardly known in the English-speaking world. It's very well known in Germany though.

COS: Thank you very much for the conversation.

Rupert Sheldrake: You are most welcome.

X. Summary

Sheldrake's work concerns morphic fields. Like the known fields of physics, morphic fields connect things at a distance. They differ from the known fields of physics in that they evolve and contain a kind of memory. Says Sheldrake (1999): "My interest in these ideas first developed while I was doing research on the development of plants, at Cambridge University. How do plants grow from simple embryos into the characteristic form of their species? How do their flowers develop in such different ways? These are all questions to do with what biologist call *morphogenesis*., the coming-into-being of form (Greek: *morphe* = form; *genesis* = coming into being)."

The naïve approach to that problem, says Sheldrake, is to say that all morphogenesis is genetically programmed. However, all cells of the body contain the same genes. In your body, the same genetic program is present in your eye cells, liver cells, and the cells of your arm, etc. Says Sheldrake: "If they are all programmed identically, then how do they develop so differently?"

Sheldrake uses an architectural analogy. In a city street, there are buildings of different designs, but what makes them different is not the building materials. They could all be made of chemically identical bricks, concrete, timber and so on. If demolished and analyzed chemically, they might be indistinguishable. What makes them different, says Sheldrake, are the architects' plans according to which they were built. These plans do not show up in any chemical analysis.

In biology, the invisible blueprints that underlie the form of growing organisms have been called *morphogenetic fields*. Morphogenetic fields, according to Sheldrake, are based on the following three features: First, morphogenetic fields are a new kind of field, so far unrecognized by physics. Second, like the organisms that they shape, they evolve. They have a history, and contain an inherent memory given by the process I call morphic resonance. Third, they are part of a larger family of fields called morphic fields.

These three principles are the basis of what Sheldrake calls the hypothesis of formative causation. "In this hypothesis, I suggest that in self-organizing systems at all levels of complexity there is a wholeness that depends on a characteristic organizing field of that system, its morphic field. Each self-organizing system is a whole made up of parts, which are themselves whole at a lower level. At each level, the morphic field gives each whole its characteristic properties, and makes it more than the sum of its parts.

"Morphic fields are regions of influence in space-time, located within and around systems they organize." They guide the systems under their influence towards characteristic goals or end-points. The British biologist Waddington gave the name *chreode* to the canalized pathways of change organized by morphogenetic fields. The mathematician Rene Thom has made mathematical models of morphogenetic fields in which the end-points towards which systems develop are defined as *attractors*. In the branch of mathematics known as dynamics, attractors represent the limits towards which dynamical systems are drawn. They provide a scientific way of thinking about ends, purposes, goals, or intentions.

The most controversial feature of this hypothesis, says Sheldrake, is the proposal that morphic fields themselves evolve. "The means by which information or an activity pattern is transferred from a previous to a subsequent system of the same kind is called morphic resonance... Any given morphic system, say a giraffe embryo, 'tunes in' to previous similar systems, in this case previous developing giraffes. Through this process each individual giraffe draws upon, and in turn contributes to, a collective pool of memory of its species. In the human realm, this kind of collective memory is closely related to what the psychologist C.G. Jung called the 'collective unconscious'."

Sheldrake summarizes the hypothetical properties of morphic fields with the following six points:

- They are self-organizing wholes
- They have both a spatial and a temporal aspect, and organize spatio-temporal patterns of vibratory or rhythmic activity.
- They attract the systems under their influence towards characteristic forms and patterns of activity, whose coming-into-being they organize and whose integrity they maintain. The ends or goals towards which morphic fields attract the systems under their influence are called attractors.
- They interrelate and coordinate the morphic units or holons that lie within them, which in turn are organized by morphic fields. Morphic fields contain other morphic fields within them in a nested hierarchy. Or holarchy.
- They are structures of probability and their organizing activity is probabilistic.
- They contain a built-in memory given by self-resonance with a morphic unit's own past and by morphic resonance with all previous similar systems. This memory is cumulative. The more often particular patterns of activity are repeated, the more habitual they become.

The implication of morphic fields according to the hypothesis of formative causation, are that “morphic fields extend beyond the brain into the environment, linking us to the objects of our perception, and making us capable of affecting them through our intention and attention.”

XI. Bio

Rupert Sheldrake studied Natural Sciences at Cambridge and Philosophy at Harvard. He took a PhD in Biochemistry at Cambridge and was a Research Fellow of the Royal Society and a Fellow of Clare College, Cambridge. The author of four books and over fifty papers in scientific journals, he is married, has two sons, and lives in London.