

SCIENCE TOYS FOR CHRISTMAS

DISCOVER

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THE COMET IS COMING!

**Saving Young
Leukemia Victims**

**Watching the
Brain at Work**

Do Protons Decay?



Cynthia

Magician or Scientist?

Rupert Sheldrake is a soft-spoken plant physiologist, a former faculty member at Cambridge University, the discoverer of some important plant hormones, and the center of a new controversy in the world of science.

At Cambridge, Sheldrake tired of trying to understand plants by the conventional laboratory methods. So he moved to India, worked at a crop research institute in Hyderabad, and then took leave to live in a hut on a riverbank and ponder one of the great unsolved problems of biology: the genesis of form. The results of his meditation were a new theory, a book (*A New Science of Life*), and new-found fame (some would say notoriety).

How do organisms "know" what form to take? Why do most people have ten fingers and most elephants a trunk? The usual assumption is that three-dimensional form is somehow encoded in, and ordered up by, an organism's DNA. Dissatisfied with the inability of genetics to explain how that works, Sheldrake developed his alternative theory.

What he proposes is a set of "morphogenetic fields," analogous to gravity and electromagnetism, that influence the shapes that both living and inanimate things assume. Perhaps, he says, some kind of "resonance" allows existing forms to influence the shapes of future ones, even at great distances. Having taken that great leap of faith, Sheldrake finds it easier to take another: resonance, he says, might also account for animal instinct, learning, and even such human behavior as eating, sleeping, and writing magazine articles.

Sheldrake presents no theoretical basis for the morphogenetic fields, and no proof that they exist. As evidence, circumstantial at best, he points to some experiments done at Harvard in the 1920s, when rats were trained to escape from a water tank by one ramp and not the other. When scientists in Scotland and Australia tried the same thing, they found that, inexplicably, their rats were much quicker to learn the trick than the Harvard rats had been. Had their learning been made easier by a world-girdling morphogenetic field, generated when the Harvard rats were trained? Sheldrake reports a similar phenomenon in chemistry: in some instances, he says, after a chemist has formed crystals of a new compound for the first time, when other chemists in other laboratories try to repeat the process, the crystals form much more quickly. Again, he says, morphogenetic fields may be at work.

In his book Sheldrake suggests that well controlled experiments could prove or disprove his theory. He has since said, quite calmly, that he does not care whether his theory turns out to be valid or not.

Sheldrake's critics are not so calm. Lewis Wolpert, an embryologist at Middlesex Hospital Medical School in London, shot off a furious letter to the British magazine *New Scientist*, which had published articles by and about Sheldrake. "Sheldrake's ideas are just nonsense," Wolpert wrote, "and certainly do not qualify as science." He compared Sheldrake to Uri Geller, the spoon bender, and has accused him of "going mystic."

An even less temperate response came from John Maddox, the editor of *Nature*, which has printed many of the first reports of momentous scientific discoveries. In an unsigned editorial, Maddox called Sheldrake's book an "infuriating tract" and an "exercise in pseudo science" that compared unfavorably with *Mein Kampf* and ought to be burned. Sheldrake's ideas, he has said, would "lend comfort" to parapsychologists, astrologers, creationists, and the like. And what about the suggested experiments? They would be time-consuming and inconclusive, Maddox said, and no self-respecting agency would grant money for them.

In letters to *Nature*, some British scientists quickly rose to Sheldrake's defense. Maddox's attitude, they said, would rule out any theory not already accepted universally: general relativity, black holes, and, in their time, gravity and magnetism. If "self-respecting" granting agencies would lend money to test only ideas that are already proved, they said, what would be the point?

Even biologist Stephen Rose, admittedly skeptical about the theory, agrees that Sheldrake has put his finger on a crucial problem in biology (how organisms develop form), and has offered to test the theory in his department at England's Open University.

Sheldrake's ideas sound a little nutty, and do seem just the sort of thing that the mystics and parapsychologists of the world would embrace. But Maddox's response is uncomfortably reminiscent of the almost hysterical reaction of scientists to the moony astronomy theories of Immanuel Velikovsky—a reaction that won Velikovsky some undeserved public support.

Valid evidence with which to refute Sheldrake—as he himself points out—can only come from testing his ideas scientifically. If anyone wants to do that, let him get on with it.

