Rupert Sheldrake

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Alfred Rupert Sheldrake (born 28 June 1942) is an English author,[3] and researcher in the field of parapsychology,[4] known for his "morphic resonance" concept.[5] He worked as a biochemist and cell biologist at Cambridge University from 1967 to 1973[3] and as principal plant physiologist at the International Crops Research Institute for the Semi-Arid Tropics until 1978.[6]

Sheldrake's morphic resonance hypothesis posits that "memory is inherent in nature"[3][7] and that "natural systems, such as termite colonies, or pigeons, or orchid plants, or insulin molecules, inherit a collective memory from all previous things of their kind".[7] Sheldrake proposes that it is also responsible for "telepathy-type interconnections between organisms".[8] His advocacy of the idea encompasses paranormal subjects such as precognition, telepathy and the psychic staring effect[9][10] as well as unconventional explanations of standard subjects in biology such as development, inheritance, and memory.[11]

Morphic resonance is not accepted by the scientific community as a measurable phenomenon and Sheldrake's proposals relating to it have been characterized as pseudoscience. Critics cite a lack of evidence for morphic resonance and an inconsistency between the idea and data from genetics and embryology. They also express concern that popular attention paid to Sheldrake's books and public appearances undermines the public's understanding of science.[a]

Despite the negative reception Sheldrake's ideas have received from the scientific community, they have found support in the New Age movement,[25] such as from Deepak Chopra.[26][27]

Rupert Sheldrake

Rupert Sheldrake in 2008 at a conference in Tucson, Arizona

Born	28 June 1942 Newark-on-Trent, Nottinghamshire[1]
Nationality	British
Education	▪ PhD (biochemistry), University of Cambridge[2] ▪ Frank Knox Fellow (philosophy and history of science), Harvard University ▪ MA (natural sciences), Clare College, Cambridge
Occupation	Researcher, author, critic
Employer	The Perrott-Warrick Fund (2005–2010)
Website	www.sheldrake.org (http://www.sheldrake.org)

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Early life

Sheldrake was born in Newark-on-Trent, Nottinghamshire,[1] to Doris (née Tebbutt)[28] and Reginald Alfred Sheldrake (1903–1970) on 28 June 1942.[29] His father graduated from Nottingham University with a degree in pharmacy[30] and was also an amateur naturalist and microscopist. Sheldrake credits his father with encouraging him to follow his interest in animals, plants[8] and gardens.[31]

Although Methodists, Sheldrake's parents sent him to Worksop College, a Church of England boarding school.[1] Sheldrake says,

> I went through the standard scientific atheist phase when I was about 14 ... I bought into that package deal of science equals atheism. I was the only boy at my high Anglican boarding school who refused to get confirmed. When I was a teenager, I was a bit like Dawkins is today, you know: 'If Adam and Eve were created by God, why do they have navels?' That kind of thing.[3]

At Clare College, Cambridge, Sheldrake studied biology and biochemistry, and after a year at Harvard studying philosophy and history of science, he returned to Cambridge where he gained a PhD in biochemistry for his work in plant development and plant hormones.[3][8]

Career

After obtaining his PhD, Sheldrake became a fellow of Clare College,[32] working in biochemistry and cell biology with funding from the Royal Society Rosenheim Research Fellowship.[33] He investigated auxins, a class of phytohormones that plays a role in plant vascular cell differentiation,[34] and published a number of papers related to the topic.[35][36] A 2012 profile in *The Guardian* described the Sheldrake of that era as "one of the brightest Darwinians of his generation".[3] His development with Philip Rubery of the chemiosmotic model of polar auxin transport has been described as "astonishingly visionary".[37] Their work in the 1970s was confirmed in the 21st century.[37]

Sheldrake says that he ended this line of research when he concluded,

> The system is circular, it does not explain how [differentiation is] established to start with. After nine years of intensive study, it became clear to me that biochemistry would not solve the problem of why things have the basic shape they do.[34]

Having an interest in Indian philosophy, Hinduism and transcendental meditation, Sheldrake resigned his position at Clare and went to work on the physiology of tropical crops in Hyderabad, India,[8] as principal plant physiologist at ICRISAT from 1974 to 1978.[6][8] There he published a number of papers on crop physiology[38] and co-authored a book on the anatomy of the pigeonpea.[39]

Sheldrake left ICRISAT to focus on writing *A New Science of Life*, during which time he spent a year and a half in the Saccidananda Ashram of Bede Griffiths,[8][40] a Benedictine monk.[1] Published in 1981, the book outlines his concept of morphic resonance,[8] about which he remarks,

> The idea came to me in a moment of insight and was extremely exciting. It interested some of my colleagues at Clare College – philosophers, linguists, and classicists were quite open-minded. But the idea of mysterious telepathy-type interconnections between organisms and of collective memories within species didn't go down too well with my colleagues in the science labs. Not that they were aggressively hostile; they just made fun of it. Whenever I said something like, "I've just got to go and make a telephone call," they said, "Ha, ha, why bother? Do it by morphic resonance!"[8]

After writing *A New Science of Life*, he continued at ICRISAT as a part-time consultant physiologist until 1985.[6][8]

Since 2004,[41] Sheldrake has been a visiting professor at the Graduate Institute in Bethany, Connecticut,[40] where he was also academic director of the Holistic Learning and Thinking Program until 2012.[40] From September 2005 until 2010, Sheldrake was director of the Perrott-Warrick Project for psychical research.[32][42]

As of 2014, he is a fellow of the Institute of Noetic Sciences in California and a fellow of Schumacher College in Devon, England.[43]

Selected books

Sheldrake's books have received both positive and negative reviews, with some reviews being extremely negative regarding the scientific content of his work. In 2009, Adam Rutherford, deputy editor of *Nature*, criticised Sheldrake's books for containing research that was not subjected to the peer-review process expected for science, and suggested that his books were best "ignored".[22] Sheldrake was also called "a robust and eloquent defender of science" by Crispin Tickell in a 2012 review in the Financial Times.[44] A 1987 Guardian article referred to him as "required reading for New Agers".[45]

A New Science of Life

Sheldrake's *A New Science of Life: The Hypothesis of Morphic Resonance* (1981) proposed that through "morphic resonance", various perceived phenomena, particularly biological ones, become more probable the more often they occur, and that biological growth and behaviour thus become guided into patterns laid down by previous similar events. As a result, he suggested, newly-acquired behaviours can be passed down to future generations – a biological proposition akin to the Lamarckian inheritance theory. He generalised this approach to assert that it explains many aspects of science, from evolution to the laws of nature which, in Sheldrake's formulation, are merely mutable habits that have been evolving and changing since the Big Bang.[46]

John Davy wrote in *The Observer* that the implications of *A New Science of Life* were "fascinating and far-reaching, and would turn upside down a lot of orthodox science", and that they would "merit attention if some of its predictions are supported by experiment".[47]

In an article Sheldrake wrote for *The Guardian*,[48] he argued that morphic resonance explained the results of experiments on learning in rats, conducted by William McDougall and replicated by Francis Crew and Wilfred Agar, in which the inheritance of acquired characteristics had apparently been demonstrated. However, since the replications were carried out on unrelated rats, Sheldrake ruled out inheritance on the basis of genetic modification as the explanation. He concluded that "the hypothesis of formative causation is unlikely to be widely accepted unless it has a considerable body of evidence in its favour. But if experiments ... begin to yield results which support it then ... there would be good reason to pursue it further. Clearly its implications would be revolutionary."

In subsequent books, Sheldrake continued to promote his morphic resonance hypothesis. Several of these books, including a revised and expanded edition of *A New Science of Life*, published in 2009 in the United States under the title *Morphic Resonance: The Nature of Formative Causation*, present experimental evidence which he says supports his hypothesis.[11]

The morphic resonance hypothesis is rejected by numerous critics on many grounds, and has been labelled pseudoscience and magical thinking. These grounds include the lack of evidence for it and its inconsistency with established scientific theories. The idea of morphic resonance is also seen as lacking scientific credibility

because it is overly vague and unfalsifiable. Furthermore, Sheldrake's experimental methods have been criticised for being poorly designed and subject to experimenter bias. His analyses of results have also drawn criticism.[b]

The Presence of the Past

In his next book, *The Presence of the Past: Morphic Resonance and the Habits of Nature* (1988), Sheldrake expanded on his morphic resonance hypothesis and marshalled experimental evidence which he said supported the hypothesis.[7] The book was reviewed favourably in *New Scientist* by historian Theodore Roszak, who called it "engaging, provocative" and "a tour de force".[54] When the book was re-issued in 2011 with those quotes on the front cover, *New Scientist* remarked, "Back then, Roszak gave Sheldrake the benefit of the doubt. Today, attitudes have hardened and Sheldrake is seen as standing firmly on the wilder shores of science", adding that if *New Scientist* were to review the re-issue, the book's publisher "wouldn't be mining it for promotional purposes".[55]

David Jones, reviewing the book in *The Times*, criticised the hypothesis as magical thinking and pseudoscience, saying that morphic resonance "is so vast and formless that it could easily be made to explain anything, or to dodge round any opposing argument ... Sheldrake has sadly aligned himself with those fantasists who, from the depths of their armchairs, dream up whole new grandiose theories of space and time to revolutionize all science, drape their wooly generalizations over every phenomenon they can think of, and then start looking round for whatever scraps of evidence that seem to them to be in their favour". Jones argued that without confirmatory experimental evidence, "the whole unwieldy and redundant structure of [Sheldrake's] theory falls to Occam's Razor".[19]

The Rebirth of Nature

Published in 1991, Sheldrake's *The Rebirth of Nature: The Greening of Science and God*[56] addressed the subject of New Age consciousness and related topics.[57] A column in *The Guardian* said that the book "seeks to restore the pre-Enlightenment notion that nature is 'alive'", quoting Sheldrake as saying that "indeterminism, spontaneity and creativity have re-emerged throughout the natural world" and that "mystic, animistic and religious ways of thinking can no longer be kept at bay".[58] The book was reviewed by James Lovelock in *Nature*, who argued that "the theory of formative causation makes testable predictions", noting that "nothing has yet been reported which would divert the mainstream of science. ... Even if it is nonsense ... recognizing the need for fruitful errors, I do not regard the book as dangerous".[59]

Seven Experiments That Could Change the World

In 1994, Sheldrake proposed a list of *Seven Experiments That Could Change the World*, subtitled "A do-it-yourself guide to revolutionary science". He encouraged lay people to conduct research and argued that experiments similar to his own could be conducted with limited expense.[60]

Music critic of *The Sunday Times* Mark Edwards reviewed the book positively, arguing that Sheldrake "challenges the complacent certainty of scientists", and that his ideas "sounded ridiculous ... as long as your thinking is constrained by the current scientific orthodoxy".[61]

David Sharp, writing in *The Lancet*, said that the experiments testing paranormal phenomena carried the "risk of positive publication bias", and that the scientific community "would have to think again if some of these suggestions were convincingly confirmed". Sharp encouraged readers (medical professionals) to "at least read Sheldrake, even try one of his experiments – but pay very close attention to your methods section". Sharp doubted whether "a bunch of enthusiastic amateurs [was] going to persuade sceptics", and noted that "orthodox science will need a lot of convincing".[62]

Science journalist Nigel Hawkes, writing in *The Times*, said that Sheldrake was "trying to bridge the gap between phenomenalism and science", and suggested that dogs could appear to have psychic abilities when they were actually relying on more conventional senses. He concluded by saying, "whether scientists will be willing to take [Sheldrake] seriously is ... [a question] that need not concern most readers. While I do not think this book will change the world, it will cause plenty of harmless fun."[63]

Dogs That Know Their Owners are Coming Home

Seven Experiments contained the seed of Sheldrake's next book, *Dogs That Know When Their Owners Are Coming Home* (1999), which covered his research into proposed telepathy between humans and animals, particularly dogs. Sheldrake suggests that such interspecies telepathy is a real phenomenon and that morphic fields are responsible for it.[64]

The book is in three sections, on telepathy, on sense of direction, including animal migration and the homing of pigeons, and on animal precognition, including premonitions of earthquakes and tsunamis. Sheldrake examined more than 1,000 case histories of dogs and cats that seemed to anticipate their owners' return by waiting at a door or window, sometimes for half an hour or more ahead of their return. He did a long series of experiments with a dog called Jaytee, in which the dog was filmed continuously during its owner's absence. In 100 filmed tests, on average the dog spent far more time at the window when its owner was on her way home than when she was not. During the main period of her absence, before she started her return journey, the dog was at the window for an average of 24 seconds per 10-minute period (4% of the time), whereas when she was on her way home, during the first ten minutes of her homeward journey, from more than five miles away, the dog was at the window for an average of five minutes 30 seconds (55% of the time). Sheldrake interpreted the result as highly significant statistically. Sheldrake performed 12 further tests, in which the dog's owner travelled home in a taxi or other unfamiliar vehicle at randomly selected times communicated to her by telephone, to rule out the possibility that the dog was reacting to familiar car sounds or routines.[65] Sheldrake also carried out similar experiments with another dog, Kane, describing the results as similarly positive and significant.[64]

Before the publication of *Dogs That Know When Their Owners Are Coming Home*, Sheldrake invited Richard Wiseman, Matthew Smith, and Julie Milton to conduct an independent experimental study with the dog Jaytee. They concluded that their evidence did not support telepathy as an explanation for the dog's behaviour,[66] and proposed possible alternative explanations for Sheldrake's conclusions, involving artefacts, bias resulting from experimental design, and post hoc analysis of unpublished data.[53][67] The group observed that Sheldrake's observed patterns could easily arise if a dog were simply to do very little for a while, before visiting a window with increasing frequency the longer that its owner was absent, and that such behaviour would make sense for a dog awaiting its owner's return. Under this behaviour, the final measurement period, ending with the owner's return, would always contain the most time spent at the window.[53] Sheldrake argued that the actual data in his

own and in Wiseman's tests did not bear this out, and that the dog went to wait at the window sooner when his owner was returning from a short absence, and later after a long absence, with no tendency for Jaytee to go to the window early in the way that he did for shorter absences.[68]

Reviewing the book, Susan Blackmore criticised Sheldrake for comparing the 12 tests of random duration – which were all less than an hour in duration – to the initial tests where the dog may have been responding to patterns in the owner's journeys. Blackmore interpreted the results of the randomised tests as starting with a period where the dog "settles down and does not bother to go to the window", and then showing that the longer the owner was away, the more the dog went to look.[65]

The Sense of Being Stared At

In 2003 Sheldrake published *The Sense of Being Stared At*, which explored telepathy, precognition, and the "psychic staring effect". It reported on an experiment Sheldrake conducted where blindfolded subjects guessed whether persons were staring at them or at another target. Sheldrake reported subjects exhibiting a weak sense of being stared at, but no sense of not being stared at,[69][70] and attributed the results to morphic resonance.[71] Sheldrake reported a hit rate of 53.1%, describing two subjects as "nearly always right, scoring way above chance levels".[72]

Several independent experimenters were unable to find evidence beyond statistical randomness that people could tell they were being stared at, with some saying that there were design flaws in Sheldrake's experiments,[9][23][73] such as using test sequences with "relatively few long runs and many alternations" instead of truly randomised patterns.[74][75] In 2005, Michael Shermer expressed concern over confirmation bias and experimenter bias in the tests, and concluded that Sheldrake's claim was unfalsifiable.[76]

David Jay Brown, who conducted some of the experiments for Sheldrake, states that one of the subjects who was reported as having the highest hit rates was under the influence of the drug MDMA (Ecstasy) during the trials.[77]

The Science Delusion (*Science Set Free*)

The Science Delusion was published on 1 January 2012 in the UK, and in the US on 4 September 2012 as *Science Set Free: 10 Paths to New Discovery*. It summarises much of Sheldrake's previous work and encapsulates it into a broader critique of philosophical materialism, with the title apparently mimicking that of *The God Delusion* by one of his critics, Richard Dawkins. In an interview with *Fortean Times*, Sheldrake denied that Dawkins' book was the inspiration for his own, saying, "The title was at the insistence of my publishers, and the book will be re-titled in the USA as *Science Set Free* ... Dawkins is a passionate believer in materialist dogma, but the book is not a response to him".[78]

In the book Sheldrake proposes a number of questions as the theme of each chapter which seek to elaborate on his central premise that science is predicated on the belief that the nature of reality is fully understood, with only minor details needing to be filled in. This "delusion" is what Sheldrake argues has turned science into a series of dogmas grounded in philosophical materialism rather than an open-minded approach to investigating

phenomena. He argues that there are many powerful taboos that circumscribe what scientists can legitimately direct their attention towards.[79]:6–12 The mainstream view of modern science is that it proceeds by methodological naturalism and does not require philosophical materialism.[80]

Sheldrake questions conservation of energy; he calls it a "standard scientific dogma",[79]:337 says that perpetual motion devices and inedia should be investigated as possible phenomena,[79]:72–73 and has stated that "the evidence for energy conservation in living organisms is weak".[79]:83 He argues in favour of alternative medicine and psychic phenomena, saying that their recognition as being legitimate is impeded by a "scientific priesthood" with an "authoritarian mentality".[79]:327 Citing his earlier "psychic staring effect" experiments and other reasons, he stated that minds are not confined to brains and remarks that "liberating minds from confinement in heads is like being released from prison".[79]:229 He suggests that DNA is insufficient to explain inheritance, and that inheritance of form and behaviour is mediated through morphic resonance.[79]:157–186 He also promotes morphic resonance in broader fashion as an explanation for other phenomena such as memory.[79]:187–211

Reviews from outside of the scientific community were often positive. Philosopher Mary Midgley writing in *The Guardian* welcomed it as "a new mind-body paradigm" to address "the unlucky fact that our current form of mechanistic materialism rests on muddled, outdated notions of matter".[81] She also stated that Sheldrake's "analogy between natural regularities and habit" could be found in the writings of CS Peirce, Nietzsche, William James and AN Whitehead.[81] In another review, Deepak Chopra commended Sheldrake for wanting "to end the breach between science and religion".[27] Philosopher Martin Cohen in *The Times Higher Educational Supplement* wrote that "Sheldrake pokes enough holes in such certainties [of orthodox science] to make this work a valuable contribution, not only to philosophical debates but also to scientific ones, too", although Cohen noted that Sheldrake "goes a bit too far here and there".[82]

In a mixed review, Bryan Appleyard writing in *The Sunday Times* commented that Sheldrake was "at his most incisive" when making a "broad critique of contemporary science" and "scientism", but on Sheldrake's "own scientific theories" Appleyard noted that "morphic resonance is widely derided and narrowly supported. Most of the experimental evidence is contested, though Sheldrake argues there are 'statistically significant' results". Appleyard said "it is certainly highly speculative" and "I simply can't tell whether it makes sense or not".[83]

Other reviews were less favourable. *New Scientist*'s deputy editor Graham Lawton characterised *Science Set Free* as "woolly credulousness" and chided Sheldrake for "uncritically embracing all kinds of fringe ideas".[84] A review in *Philosophy Now* called the book "disturbingly eccentric", combining "a disorderly collage of scientific fact and opinion with an intrusive yet disjunctive metaphysical programme".[85]

In the media and in public

Sheldrake has received popular coverage through newspapers, radio, television and speaking engagements. The attention he receives has raised concerns that it adversely affects the public understanding of science.[4][16][17][22] Some have accused Sheldrake of self-promotion,[22] with one commenting, "for the

inventors of such hypotheses the rewards include a degree of instant fame which is harder to achieve by the humdrum pursuit of more conventional science."[17]

On television

An experiment involving measuring the time for subjects to recognise hidden images, with morphic resonance being posited to aid in recognition, was conducted in 1984 by the BBC popular science programme *Tomorrow's World*.[11] In the outcome of the experiment, one set of data yielded positive results and another set yielded negative results.[86]

Sheldrake was the subject of an episode of *Heretics of Science*, a six-part documentary series broadcast on BBC 2 in 1994.[87] On this episode, John Maddox discussed "A book for burning?", his 1981 *Nature* editorial review of Sheldrake's book, *A New Science of Life: The Hypothesis of Morphic Resonance*. Maddox said that morphic resonance "is not a scientific theory. Sheldrake is putting forward magic instead of science, and that can be condemned with exactly the language that the popes used to condemn Galileo, and for the same reasons: it is heresy."[86] The broadcast repeatedly displayed footage of book burning, sometimes accompanied by audio of a crowd chanting "heretic".[86] Biologist Steven Rose criticised the broadcast for focusing on Maddox's rhetoric as if it was "all that mattered". "There wasn't much sense of the scientific or metascientific issues at stake", Rose said.[88]

Debating and lecturing

Sheldrake debated biologist Lewis Wolpert on the existence of telepathy in 2004 at the Royal Society of Arts in London.[89] Sheldrake marshalled evidence for telepathy while Wolpert argued that telepathy fits Irving Langmuir's definition of pathological science and that the evidence for telepathy has not been persuasive.[90] Reporting on the event, *New Scientist* said "it was clear the audience saw Wolpert as no more than a killjoy. (...) There are sound reasons for doubting Sheldrake's data. One is that some parapsychology experimenters have an uncanny knack of finding the effect they are looking for. There is no suggestion of fraud, but something is going on, and science demands that it must be understood before conclusions can be drawn about the results".[89]

In 2006, Sheldrake spoke at a meeting of the British Association for the Advancement of Science about experimental results on telepathy replicated by "a 1980s girl band", drawing criticism from Peter Atkins, Lord Winston, and Richard Wiseman. The Royal Society also reacted to the event saying, "Modern science is based on a rigorous evidence-based process involving experiment and observation. The results and interpretations should always be exposed to robust peer review."[91]

In April 2008, Sheldrake was stabbed by a man during a lecture in Santa Fe, New Mexico. The man told a reporter that he thought Sheldrake had been using him as a "guinea pig" in telepathic mind control experiments for over five years.[92] Sheldrake suffered a wound to the leg and has since recovered,[92][93] while his assailant was found "guilty but mentally ill".[94]

In January 2013, Sheldrake gave a TEDx lecture at TEDxWhitechapel in East London roughly summarising ideas from his book, *The Science Delusion*. In his talk, Sheldrake stated that modern science rests on ten dogmas which "fall apart" upon examination and promoted his hypothesis of morphic resonance. According to a

statement issued by TED staff, TED's scientific advisors "questioned whether his list is a fair description of scientific assumptions" and believed that "there is little evidence for some of Sheldrake's more radical claims, such as his theory of morphic resonance". The advisors recommended that the talk "should not be distributed without being framed with caution". The video of the talk was moved from the TEDx YouTube channel to the TED blog accompanied by the framing language called for by the advisors. The move and framing prompted accusations of censorship, to which TED responded by saying the accusations were "simply not true" and that Sheldrake's talk was "up on our website".[95][96]

In November 2013, Sheldrake gave a lecture at the Oxford Union outlining his claims, made in *The Science Delusion*, that modern science has become constrained by dogma. Sheldrake argued that these dogmatic constraints are particularly evident in physics. Despite the fact, he said, that scientists around the world consistently get different measurements for such "constants" as the gravitational force or the speed of light, they insist that the variation is attributable to experimental error or they "make up" proportions of dark energy and matter, assuring that the variations they've observed can be made to fit into the established paradigm. "What if the laws of nature vary throughout the day," Sheldrake asked.[97]

Criticism

A variety of responses to Sheldrake's ideas have appeared in prominent scientific publications.

Sheldrake and theoretical physicist David Bohm published a dialogue in 1982 in which they compared Sheldrake's ideas to Bohm's implicate order.[98] In 1997, physicist Hans-Peter Dürr speculated about Sheldrake's work in relation to modern physics.[99]

Following the publication of *A New Science of Life*, *New Scientist* sponsored a competition to devise empirical tests for morphic resonance.[54] The winning idea involved learning Turkish nursery rhymes, with psychologist and broadcaster Sue Blackmore's entry involving babies' behaviour coming second.[21] Blackmore found the results did not support the theory however Sheldrake disagreed,[21] and detailed the experiments in his next book, *The Presence of the Past*.

In 2005, the *Journal of Consciousness Studies* devoted a special issue to Sheldrake's work on the sense of being stared at.[23] For this issue, the editor could not follow the journal's standard peer review process because "making successful blind peer review a condition of publication would in this case have killed the project at the outset".[100] The issue thus featured several articles by Sheldrake, followed by the open peer-review to which Sheldrake then responded.[23] Writing in *Scientific American*, Michael Shermer rated the peer commentaries, and noted that the more supportive reviews came from those who had affiliations with less mainstream institutions.[23]

Sheldrake and developmental biologist Lewis Wolpert have made a scientific wager about the importance of DNA in the developing organism. Wolpert bet Sheldrake "a case of fine port" that "By 1 May 2029, given the genome of a fertilised egg of an animal or plant, we will be able to predict in at least one case all the details of the organism that develops from it, including any abnormalities." Sheldrake denies that DNA contains a recipe for morphological development. The Royal Society will be asked to determine the winner if the result is not obvious.[101]

"A book for burning?"

In September 1981, *Nature* published an editorial about *A New Science of Life* entitled "A book for burning?"[3][16] Written by the journal's senior editor, John Maddox, the editorial said

> ... Sheldrake's book is a splendid illustration of the widespread public misconception of what science is about. In reality, Sheldrake's argument is in no sense a scientific argument but is an exercise in pseudo-science ... Many readers will be left with the impression that Sheldrake has succeeded in finding a place for magic within scientific discussion – and this, indeed, may have been a part of the objective of writing such a book.[16]

Maddox argued that Sheldrake's hypothesis was not testable or "falsifiable in Popper's sense", referring to the work of philosopher Karl Popper. He said Sheldrake's proposals for testing his hypothesis were "time-consuming, inconclusive in the sense that it will always be possible to account for another morphogenetic field and impractical".[16] In the editorial, Maddox ultimately rejected the suggestion that the book should be burned.[16] Nonetheless, the title of the piece garnered widespread publicity.[2][22][24] In a subsequent issue, *Nature* published several letters expressing disapproval of the editorial,[102][103][104][105] including one from physicist B. D. Josephson, who criticised Maddox for "a failure to admit even the possibility that genuine physical facts may exist which lie outside the scope of current scientific descriptions."[102]

In 1983, an editorial in *The Guardian* compared the "petulance of wrath of the scientific establishment" aimed against Sheldrake with the Galileo affair and Lysenkoism.[106] Responding in the same paper, Brian Charlesworth defended the scientific establishment, affirming that "the ultimate test of a scientific theory is its conformity with the observations and experiments" and that "vitalistic and Lamarckian ideas which [*The Guardian*] seem to regard so highly have repeatedly failed this test".[107]

In a letter to *The Guardian* in 1988, a scientist from Glasgow University referred to the title "A book for burning?" as "posing the question to attract attention" and criticised the "perpetuation of the myth that Maddox ever advocated the burning of Sheldrake's book".[108] In 1999, Maddox characterised his 1981 editorial as "injudicious", saying that even though it concluded that Sheldrake's book

> ... should not be burned ... but put firmly in its place among the literature of intellectual aberration. ... The publicists for Sheldrake's publishers were nevertheless delighted with the piece, using it to suggest that the Establishment (*Nature*) was again up to its old trick of suppressing uncomfortable truths."[2]

An editor for *Nature* said in 2009 that Maddox's reference to book burning backfired.[22]

In 2012, Sheldrake described his experiences after publication of Maddox's editorial review as being "exactly like a papal excommunication. From that moment on, I became a very dangerous person to know for scientists."[3]

Sheldrake and Steven Rose

From 1987 to 1988 Sheldrake contributed several pieces to *The Guardian*'s "Body and Soul" column. In one of these, he wrote that the idea that "memories were stored in our brains" was "only a theory" and "despite decades of research, the phenomenon of memory remains mysterious".[109] This provoked a response by Professor Steven Rose, a neuroscientist from the Open University, who criticised Sheldrake for being "a researcher trained in another discipline" (botany) for not "respect[ing] the data collected by neuroscientists before begin[ning] to offer us alternative explanations", and accused Sheldrake of "ignoring or denying" "massive evidence", and arguing that "neuroscience over the past two decades has shown that memories are stored in specific changes in brain cells". Giving an example of experiments on chicks, Rose asserted "egregious errors that Sheldrake makes to bolster his case that demands a new vague but all-embracing theory to resolve."[24]

Sheldrake responded to Rose's article, stating that there was experimental evidence that showed that "memories can survive the destruction of the putative memory traces".[110] Rose subsequently responded, asking Sheldrake to "get his facts straight", explaining the research and concluding that "there is no way that this straightforward and impressive body of evidence can be taken to imply that memories are not in the brain, still less that the brain is tuning into some indeterminate, undefined, resonating and extra-corporeal field".[111]

In his next column, Sheldrake again attacked Rose for following "materialism", and argued that quantum physics had "overturned" materialism, and suggested that "memories may turn out to depend on morphic resonance rather than memory traces".[112] Philosopher Alan Malachowski of the University of East Anglia, responding to what he called Sheldrake's "latest muddled diatribe", defended materialism, argued that Sheldrake dismissed Rose's explanation with an "absurd rhetorical comparison", asserted that quantum physics was compatible with materialism and argued that "being roughly right about great many things has given [materialists] the confidence to be far more open minded than he is prepared to give them credit for".[113]

They subsequently agreed to and arranged a test of the morphic resonance hypothesis using chicks. Sheldrake published his paper stating that the results matched his prediction that day-old chicks would be influenced by the experiences of previous batches of day-old chicks. "From the point of view of the hypothesis of formative causation, the results of this experiment are encouraging" and called for further research.[114] Rose published separately, stating that morphic resonance was a "hypothesis disconfirmed".[17] He also made further criticisms of morphic resonance, and stated that "the experience of this collaboration has convinced me in practice, Sheldrake is so committed to his hypothesis that it is very hard to envisage the circumstances in which he would accept its disconfirmation".[17] Rose requested Professor Patrick Bateson FRS to analyse the data, and Bateson offered his opinion that Sheldrake's interpretation of the data was "misleading" and attributable to experimenter effects.[17]

Sheldrake responded to Rose's paper by describing it as "polemic" and "aggressive tone and extravagant rhetoric" and concluding that "The results of this experiment do not disconfirm the hypothesis of formative causation, as Rose claims. They are consistent with it."[115]

In academic and popular culture

Between 1989 and 1999 Sheldrake, psychonaut Terence McKenna and mathematician Ralph Abraham recorded a series of discussions exploring diverse topics relating to the "world soul" and evolution.[116] These also resulted in a number of books based on these discussions: *Trialogues at the Edge of the West: Chaos, Creativity and the Resacralization of the World* (1992), *The Evolutionary Mind: Trialogues at the Edge of the Unthinkable* (1998), and *The Evolutionary Mind: Conversations on science, imagination & spirit* (2005). In an interview for the book *Conversations on the Edge of the Apocalypse*, Sheldrake states he believes the use of psychedelic drugs "can reveal a world of consciousness and interconnection" which he says he has experienced.[117]

Sheldrake's work was amongst those cited in a faux research paper written by Alan Sokal and submitted to *Social Text*.[118] In 1996, the journal published the paper as if it represented real scientific research,[119] an event which has come to be known as the Sokal affair. Sokal later said he had suggested in the hoax paper that "the 'morphogenetic field' – a bizarre New Age idea proposed by Rupert Sheldrake – constitute[d] a cutting-edge theory of quantum gravity. This connection [was] pure invention; even Sheldrake makes no such claim."[118]

Sheldrake has been described as a New Age author[45][120][121] and is popular among many in the New Age movement who view him as lending scientific credibility to their beliefs,[25][86] though Sheldrake does not necessarily endorse certain New Age interpretations of his ideas.[25] Psychic Sylvia Browne, while channelling her spirit guide "Francine", said that morphic resonance carries emotional trauma and physical ailments from past lives which may be released through affirmations.[122]

In the 2011 "Miracle Day" season of *Doctor Who* spinoff *Torchwood*, morphic resonance is given as the reason that all humans have suddenly become immortal.[123]

The morphogenetic field plays a large role in the Nintendo DS game *Nine Hours, Nine Persons, Nine Doors*. Experiments in the game's back story involve putting pairs of siblings under extreme circumstances and trying to get them to telepathically send puzzle answers to each other in order to survive.[124]

Origin and philosophy of morphic resonance

Among his early influences Sheldrake cites *The Structure of Scientific Revolutions* (1962) by Thomas Kuhn. Sheldrake says that the book led him to view contemporary scientific understanding of life as simply a paradigm, which he called "the mechanistic theory of life". Reading Kuhn's work, Sheldrake says, focused his mind on how scientific paradigms can change.[8]

Although there are similarities between morphic resonance and Hinduism's akashic records,[125] Sheldrake says that he first conceived of the idea while at Cambridge, before his travel to India where he later developed it. He attributes the origin of his morphic resonance idea to two influences: his studies of the holistic tradition in biology, and French philosopher Henri Bergson's book *Matter and Memory*. He says that he took Bergson's concept of memories not being materially embedded in the brain and generalised it to morphic resonance, where memories are not only immaterial but also under the influence of the collective past memories of similar organisms. While his colleagues at Cambridge were not receptive to the idea, Sheldrake found the opposite to be true in India. He recounts his Indian colleagues saying, "There's nothing new in this, it was all known millennia ago to the ancient rishis." Sheldrake thus characterises morphic resonance as a convergence between Western and Eastern thought, yet found by himself first in Western philosophy.[7][126]

Sheldrake has also noted similarities between morphic resonance and Carl Jung's collective unconscious, with regard to collective memories being shared across individuals and the coalescing of particular behaviours through repetition, described by Jung as archetypes.[7] However, whereas Jung assumed that archetypal forms were transmitted through physical inheritance, Sheldrake attributes collective memories to morphic resonance, and rejects any explanation of them involving what he terms "mechanistic biology".[11]

Lewis Wolpert, one of Sheldrake's critics, has described morphic resonance as being an updated Drieschian vitalism.[15][127]

Full list of books

- *A New Science of Life: the hypothesis of formative causation*, Los Angeles, CA: J.P. Tarcher, 1981 (second edition 1985, third edition 2009). ISBN 978-1-84831-042-1.
- *The Presence of the Past: morphic resonance and the habits of nature*, New York, NY: Times Books, 1988. ISBN 0-8129-1666-2.
- *The Rebirth of Nature: The greening of science and God*, New York, NY: Bantam Books, 1991. ISBN 0-553-07105-X.
- *Seven Experiments That Could Change the World: a do-it-yourself guide to revolutionary science*, New York, NY: Riverhead Books, 1995. ISBN 1-57322-014-0.
- *Dogs that Know When Their Owners are Coming Home: and other unexplained powers of animals*, New York, NY: Crown, 1999 (second edition 2011). ISBN 978-0-307-88596-8.
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- *The Science Delusion: Freeing the spirit of enquiry*, London: Coronet, 2012. ISBN 978-1-4447-2795-1.
- *Science Set Free: 10 Paths to New Discovery*. Random House (Deepak Chopra books imprint), 2012. ISBN 978-0770436704.

With Ralph Abraham and Terence McKenna:

- *Trialogues at the Edge of the West: chaos, creativity, and the resacralisation of the world*, Santa Fe, NM: Bear & Co. Pub., 1992. ISBN 0-939680-97-1.
- *The Evolutionary Mind: trialogues at the edge of the unthinkable*, Santa Cruz, CA: Dakota Books, 1997. ISBN 0-9632861-1-0.
- *Chaos, Creativity and Cosmic Consciousness*, Rochester, VT: Park Street Press, 2001. ISBN 0-89281-977-4.
- *The Evolutionary Mind: conversations on science, imagination & spirit*, Rhinebeck, NY: Monkfish Book Pub. Co., 2005. ISBN 0-9749359-7-2.

With Matthew Fox:

- *Natural Grace: dialogues on creation, darkness, and the soul in spirituality and science*, New York, NY: Doubleday, 1996. ISBN 0-385-48356-2.
- *The Physics of Angels: exploring the realm where science and spirit meet*, San Francisco, CA: HarperSanFrancisco, 1996. ISBN 0-06-062864-2.

With Kate Banks:

- *Boy's Best Friend*, New York, NY: Farrar, Straus and Giroux, 2015. ISBN 9780374380083.

Personal life

Sheldrake reports "being drawn back to a Christian path" during his time in India, and currently self-identifies as Anglican.[1] Sheldrake is married to therapist, voice teacher and author Jill Purce. They have two sons.[40]

See also

- Fritjof Capra
- Hundredth monkey effect
- Noosphere
- Philosophy of science
- Synchronicity
- Lyall Watson

Notes

a. Sources:
   - pseudoscience[12][13][14][15][16][17][18][19][20]
   - lack of evidence[10][21][22][23][24]
   - inconsistency with data from genetics and embryology[15]
   - undermines the public's understanding of science[4][16][17][22]

b. Sources:
   - pseudoscience[12][13][14][15][16][17][18][19]
   - magical thinking[16][19][49]
   - lack of evidence[10][21][22][23][24]
   - inconsistency with established scientific theories[15][19][50]
   - overly vague[16][17][19][51]
   - unfalsifiable[16][17][23]
   - experimental methods poorly designed and subject to experimenter bias[9][50][52]
   - analyses of results have also drawn criticism[17][53]

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External links

- Official website (http://www.sheldrake.org/)
- Rupert Sheldrake (http://www.imdb.com/name/nm0791102/) at the Internet Movie Database
- BBC3 radio interview with Rupert Sheldrake (http://www.bbc.co.uk/iplayer/episode/b018nsjk/Belief_Rupert_Sheldrake/) *Belief* with Joan Bakewell, BBC Radio 3, 2 January 2012. (30 minutes)
- RFI radio interview with Rupert Sheldrake (http://www.rfi.fr/emission/20131108-1-on-reenchantait-science) *Autour de la question* with Jean-Yves Casgha, Radio France Internationale, 8 November 2013. In French with Sheldrake speaking English and being simultaneously translated. (19.5 minutes).

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