Prayer: A Challenge for Science

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Since ancient times, a strong and pervasive belief in the efficacy of prayer–for the living and the dead–reinforces the notion that consciousness is not limited to the physical body. Not only do traditions throughout the world share a belief that prayers may in some way help (or invoke help from) deceased ancestors, many cultures throughout history have believed that prayer can bring about changes in the physical circumstances of the living.

If prayer affects things in the physical world, its effects should be measurable, and science should be able to investigate it. There is a very scattered literature on this, but when you bring it all together as Larry Dossey has done in his recent book, Healing Words (HarperSanFrancisco, 1993), you see there is quite a large number of interesting experiments with challenging results. Out of 131 controlled experiments on prayer-based healing, more than half showed statistically significant benefits. One of the best known is a double blind study of 393 patients in the coronary unit at San Francisco General Hospital. In this experiment, 192 patients, chosen at random, were prayed for by home prayer groups, the others were not. The prayed-for patients recovered better than the controls, and fewer died.

In order to make sense of these data on the efficacy of prayer, science will have to change its underlying assumptions about the nature of causality. Currently, the standard view is still purely mechanistic–notwithstanding all the recent talk about chaos and complexity theory. When applied to the life sciences, chaos and complexity theory–even with the help of highly sophisticated computer modeling–still explain the world in terms of mechanical causes involving known physical and chemical processes.

The data from empirical studies of prayer, as well as from the large literature reporting psi research in telepathy, clairvoyance and psychokinesis, seriously challenge the mechanistic view. Some other causal agent besides the mechanics of electrochemical interactions is required to make sense of the observed phenomena.

Holistic thinkers generally divide into two main categories. The majority want to have holism on the cheap. They want a holism which doesn't conflict with science as we know it. Instead of exploring the possibility of new causal factors, they prefer to explain holism in terms of complexity and self-organization of conventional mechanical forces, modeled with sophisticated mathematics and the latest computer techniques. Nothing essentially different from physical and chemical interactions is considered to account for the properties of living systems.

The other group of holists, a minority among which I include myself and Larry Dossey, think that there is more to it than just what we know about chemistry and physics and clever mathematical models. My view is that there are other causal factors in nature, processes that make actual differences–causes in nature which bring about new kinds of effects that we have to take into account in order to understand our experience and the world. These new causal factors are involved in things like paranormal phenomena, prayer and healing.

The whole thrust of my morphic resonance theory is to say there is more to nature than just the standard forces in physics. And what's more these other agents are at the very heart of the way things are organized in chemistry, in life, and in consciousness.

Prayer and Mental Fields

How might prayer fit in with the scientific view of things? I shall focus on two broad categories of prayer: petitionary and intercessory. In petitionary prayer we ask for something for ourselves; in intercessory prayer we pray to a higher power for the benefit of other people (either living or dead).

In praying for other people and for ourselves we ask a higher power to bring about a particular result. For me, this is what distinguishes prayer from positive thinking. Positive thinking involves nothing more than one's own mind, one's own desires and wishes, but petitionary and intercessory prayer are put in the context of a higher power. For this reason positive thinking does not fit into the category of prayer–even though it is often confused with it.

Whether petitionary or intercessory, prayer clearly poses a challenge to the mechanistic view of the world. According to this view, there is no way that thoughts going on in your head, which at most create small electrochemical disturbances barely detectable a few inches from your head even by highly sensitive apparatus, could affect someone or something at a remote distance.

If you were practicing positive thinking or some of the more specifically directed forms of petitionary prayer, you could resort to explanations in terms of telepathy, or if it were a prayer affecting physical objects, you might say it was psychokinesis. But such explanations serve only to replace one set of explanations which lie outside the scope of modern mechanistic science with another set. There is nothing in mechanistic science that could allow mere thoughts inside my mind, whether cast in the form of prayer or as positive thinking, to affect things at a distance. It just can't happen.

The key to understanding prayer as a scientific phenomenon requires, in my view, getting away from the idea of the mind as somehow inside the brain. If we think our minds are confined to our brains–the standard view–then since what goes on in our brain occurs in the privacy and isolation of our own skull it can't affect anyone else. However, I see minds being field-like in nature (part of my general view of morphic fields), and I see mental fields as the basis for habitual patterns of thought. Mental fields go beyond, through, and interface with the electromagnetic patterns in the brain. In this way mental fields can affect our bodies through our brains. However, they are much more extensive than our brains, reaching out to great distances in some cases.

As soon as we have the idea that the mind can be extended through these mental fields, and over large distances, we have a medium of connection through which the power of prayer could work. We are no longer dealing with a purely mechanical system in the brain, with absolutely no way of connecting the brain and the observed effect–for if that were the case the phenomenon of effective prayer would have to be dismissed as delusion or coincidence. With a mental field, however, we have a medium for a whole series of connections between us and the people, animals and places we know and care about–with the rest of the world, in fact. When we pray, those extended mental fields would be the context in which prayer could work non-locally.

Non-Localized Mind

Clearly, this does not amount to a fully articulated scientific theory of prayer; it is highly speculative. But, I believe, it is also very clear that we need to have a much broader view of how the mind is extended beyond the brain. We need a theory of what I call the "extended mind" as opposed to the conventional scientific view of the "contracted mind" holed up inside the skull. This view of a contracted mind came from Descartes in the seventeenth century. It is a model of consciousness which separates our minds from the whole world around us into a small region in the brain–a model of the mind which plainly contradicts direct experience. For

example, when you see this page in front of you, you experience it as being outside you, not inside your brain. To say that this and all your other perceptions are located in your brain is a theory, not an experience.

It is important, however, not to envisage the extended mind as some amorphous field, a kind of undifferentiated Universal Mind. I don't think we should make a large leap from the concept of a contracted mind to a boundless universal mind. Such a jump isn't helpful scientifically.

My idea of morphic fields is that even though they are extended and non-local in their effects, they are still part of our individual and collective mind, but not to be equated with some ultimate Universal Mind. The morphic fields are not God. They are non-local in the sense that they can spread out over immense distances (as, for instance, gravitational fields do), so that if I were praying about somebody in Australia from my home in London the morphic field would carry the information and the prayer could work. But my mental field wouldn't usually spread out to Mars, for example, because there is nothing connecting me to someone on that planet. If someone I knew had traveled there on a spaceship, then there would be a link. For morphic fields to have a mental connection I believe there has to be something that links you to the other person. Even if you have never met the other person, I believe just knowing their name or something about them seems to be enough to establish a connection, though this connection is likely to be weaker than that between people who know each other well.

You could picture it something like this: When two people come into contact and establish some mental connection (perhaps experienced as affection, love, even hate) their morphic fields in effect become part of a larger, inclusive field. Then, if they separate from each other it is as if their particular portions of the morphic field are stretched elastically, so that there remains a "mental tension" or link between them. There has to be something like this that relates the two people.

Nested Sets of Morphic Fields

Morphic fields are organized in nested hierarchies (see below) . For example, there are morphic fields surrounding the atoms in our bodies, which are within the higher level morphic fields of molecules, organelles, cells, organs and limbs, all of which exist within the morphic field associated with the entire body. The body field, in turn, would be within the field of relationships that constitute a family, within a larger social group. Societies, in turn, are embedded within ecosystems, and ecosystems within the planetary system, "Gaia". And by extrapolation, we could extend the series of nested morphic fields until we reach out beyond planetary, solar system and galactic limits to encompass the entire universe.

Even Einstein's space-time field of gravitation is a universal, cosmic field holding everything together and linking the entire universe, in fact, making it a uni-verse. It does the same thing as the World Soul or Anima Mundi of neo-Platonic philosophy. It embraces the whole cosmos. There are levels upon levels of morphic fields within fields, within which we are embedded. Human life is embedded in vastly larger fields of organization. To what degree they are conscious still remains in the realm of speculation. But I would assume that higher-level fields are not less, and probably more, conscious than we are. I would think they are more conscious than we are not simply because they are larger in size, but because they are more inclusive, contain more complexity, and encompass more possibilities.

I think that is one way of interpreting traditional doctrines about super-human intelligences, or cosmic intelligences, usually thought of in Christianity as the hierarchy of the angels. The word "angel" normally conveys the image of a good-looking youth with wings; but that's simply a pictorial representation. The traditional doctrine behind that image, however, is of a super-human intelligence. And if the solar system and galaxy have intelligence, then one might be an

angel and the other an archangel. In some traditional Christian doctrines there are, for instance, nine hierarchies of angels or levels of intelligence. And I would see these as equivalent to intelligences, minds or organizing fields at different levels of complexity. The galactic angels, for instance, would embrace or include those of solar systems, which in turn would include those of planets.

This is a description of a cosmos which has intelligence at every level, not a view that sees consciousness as something that emerged from unconscious matter. Conscious intelligence was there to start with. The place to look for it is not going to be in atoms or quanta (although there may be some kind of consciousness there), but in solar systems and galaxies and in the whole cosmos. There may be all these different levels of imagination, intelligence, and mind throughout the whole of the cosmic organization. All traditional doctrines that I know of have recognized something of that kind.

Notes & References

1. For an extended discussion of these theories, see R. Sheldrake, A New Science of Life: The Hypothesis of Formative Causation (Tarcher, 1981), and The Presence of the Past: Morphic Resonance and the Habits of Nature (Vintage, 1988).

Opening Up To The Numinous

As a scientist I wasn't always interested in prayer. In fact, in earlier days I believed it was all nonsense. I was an atheist; God had no room in my scientific education. After graduating from Cambridge, I thought I had outgrown childish belief structures like religion, and that rational science was the way forward. I had a typical secular-humanist atheistic worldview for a long time, well into my thirties. And this, of course, is the worldview that most of my scientific colleagues still have. They regard religion as a relic from a superstitious age. In that context, prayer is completely meaningless, except insofar as people believe in it they may derive some psychological benefit–a kind of "placebo effect".

Then in 1968 I visited India, and all the materialist assumptions I took for granted just didn't seem to work any more. What struck me most was the experience of being immersed in a culture that worked in an entirely different way to what I had been accustomed. In this exotic culture, the idea of what we might call "other realms"–the supernatural or spiritual–was simply taken for granted by practically everybody. There was a palpable sense of another dimension to life, everywhere you looked, and everywhere you went.

As an atheist, of course, my initial reaction was to think they were deluded in their beliefs. Yet on the other hand, these beliefs produced a fascinating culture. Even people living in the extremes of poverty seemed to have more joy in their lives than most people I knew who lived in the lap of plenty. I was touched deeply by the natural human warmth, and the quality of the people and of their way of life. According to the materialist beliefs I had, poverty equaled misery; wealth and good medical attention meant, if not happiness, then at least a much better quality of life. In India I saw it wasn't as simple as that. The people there were poor beyond the comprehension of most Westerners, yet everywhere they walked about with the most radiant smiles. Walk along a street in London, Paris or New York and you see mostly harried, worried faces. That difference impressed me very deeply.

The contrast between the sense of inner joy and peace I experienced all around me in India compared with the tense way of life in the West was so striking that I decided to investigate meditation. For about four years I did various forms of Hindu practice. This didn't conflict with my scientific attitude because meditation didn't challenge my whole scientific worldview. On the contrary, I could approach my study of meditation in a truly scientific spirit. Its appeal is

that you do it and see if it works. It's empirical. You sit, you calm your breath and you observe what happens. I started with Transcendental Meditation which sounded scientific in that it was supposed to lower lactose levels in the blood, have beneficial effects on the circulation, and calm brain activity. I found that meditation did indeed work. I experienced within myself that calm I was seeing all around me in India.

As a scientist I wasn't troubled. I could understand meditation by explaining to myself that it wasn't opening me up to other realms of consciousness, but that it was simply changing the physiological state of my brain. To say that breathing in a particular way and doing a particular kind of mental activity could affect my mental and physical state did not challenge my worldview.

Nevertheless, although I could follow Hindu practices, India was such a completely different civilization and culture that there was no way I'd ever be an Indian. I began to have a sense that I would need to recover my own tradition if I were to share in the deep perceptions and peace that I saw in the people around me.

Furthermore, after living there a while, I also saw the shadow side of the Hindu tradition, which I hadn't seen in my earlier brief visit. There is a fatalistic lack of concern for other people that was alien to me. That view was at variance with my more optimistic, progressivist Christian culture.

In India I came face to face with the realization that rooted in the Christian tradition is the sense that you can, and should, help other people; we can aim for some better state of affairs on Earth, for the whole of society. When I talked with my Indian friends and colleagues, it became very clear that I had this view deep within me. I realized that this sense didn't come from Hindu philosophy, nor from my atheistic outlook. Instead, I saw it came from a deeply embedded Christian view of the world that I carried with me unwittingly. In fact, I realized this partly because in conversation with my Indian friends they would frequently point out that so much of what I was expressing was a Christian view. The repeated revelation of this, even to an avowed atheist, was difficult to ignore.

I spent some time living in Father Bede Griffith's ashram, and I found that coming back to a Christian path made sense to me. I began praying and discovered that it was more helpful to me than meditating. I would say that meditation involves a kind of separation between the practice and the rest of one's life; it is going into another space altogether. You could say that contemplative prayer would have the same effect. But for me, ordinary petitionary and intercessory prayer, such as the "Lord's Prayer", links the events of my daily life directly with my practice. I pray about what I've done that day and what's coming up the next day. It's a matter of bringing the very fabric of one's life–relationships, work, and personal concerns–into the context of the spiritual life.

How Do Mental Fields Work?

My hypothesis of morphic resonance and morphic fields has grown out of the notion in developmental biology of "morphogenic fields". This idea dates back to the 1920s in the work of biologists A. Gurwitsch and Paul Weiss. In modern developmental biology these fields are usually regarded as heuristic devices, or as mathematical abstractions with no causal effect. By contrast, I interpret them to be causal fields with an inherent memory given by morphic resonance; in other words I regard them as one kind of morphic field. Other kinds of morphic fields include behavioral fields, responsible for coordinating instinctive or learned behavior, mental fields, responsible for organizing mental activity, and social fields, responsible for organizing social groups.

If fields are the medium of mind then what you have in the brain is an interface between one kind of field and another kind of field. All organization in the body has morphic fields underlying it. Morphic fields in the brain interact with electromagnetic (EM) fields in the brain. However, the nature of this interaction is indirect. Rather than morphic fields working directly through the electromagnetic field, they interact through both affecting the same thing–in this case, physical activity within the brain.

I am not saying that there is a linear-type causal relationship between brain-electromagnetic-morphic fields. I regard mental fields as one kind of morphic field that affects the brain, shaping its activity, and this affects the EM field associated with the brain.

Here you've got fields acting on fields: morphic fields surrounding all the cells, tissues and organs of the body, as well as in molecules and cell membranes, and indeed in quantum-matter fields. This is contrasted with the more usual view of the spirit-matter dichotomy–where mechanical matter and ineffable spirit interact in some kind of quasi-miraculous way. If you say that the spirit acts on the EM field, you've got a problem of miraculous intervention.

On the other hand, if everything in nature is organized by fields, and if mental fields are a more subtle kind of field, you've got no sharp dichotomy–you've got fields acting through fields at all levels of reality. So the mind-body problem ceases to be a sharp dichotomy.