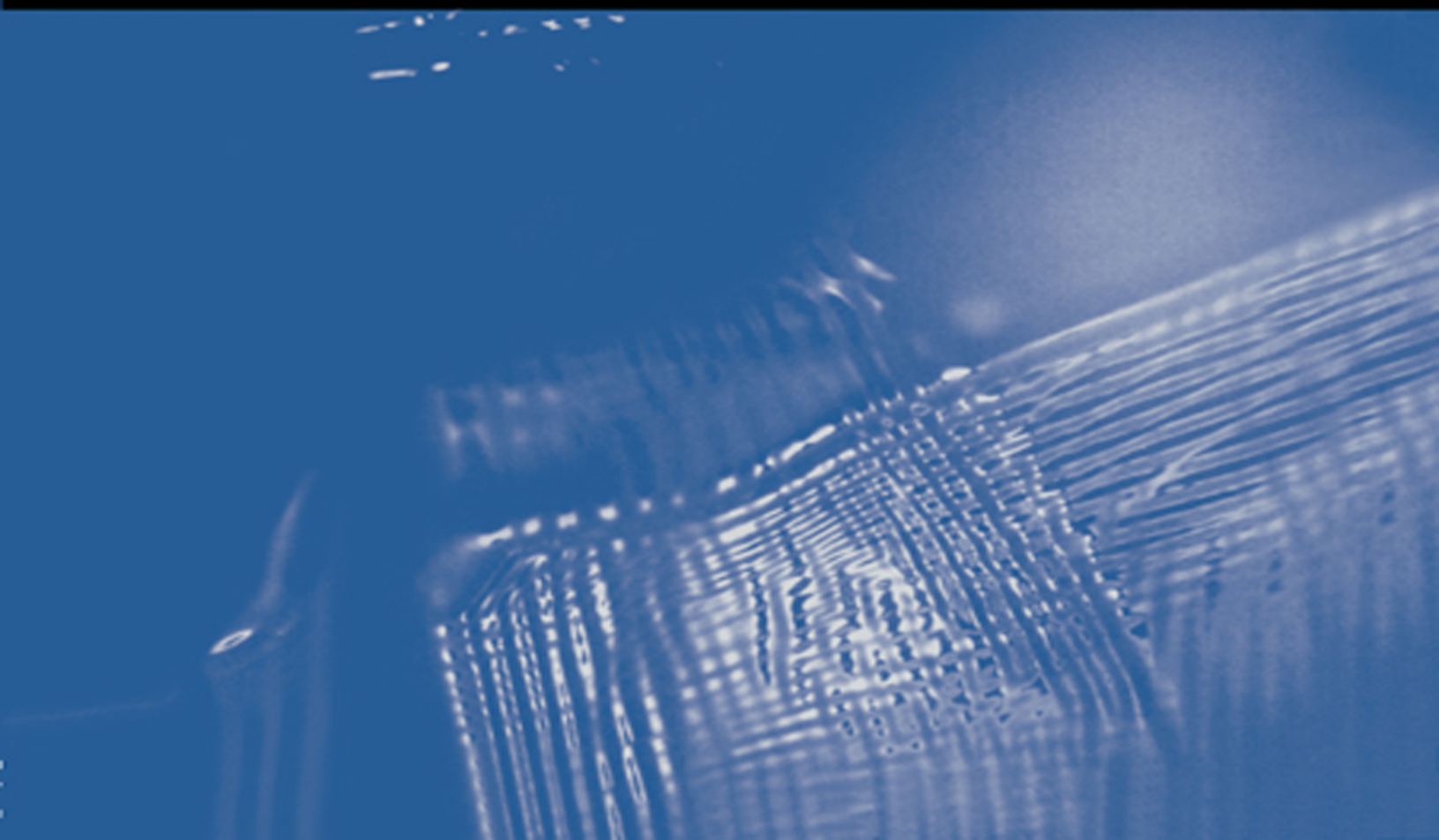
DAVID BOHM

Unfolding Meaning

A Weekend of Dialogue



Unfolding Meaning

'... to think differently – this thought must enter deeply into our intentions, actions, and so on – our whole being.'
David Bohm in 'The Implicate Order: a new approach to reality'

In *Unfolding Meaning*, David Bohm, one of the most provocative and original thinkers of our time, argues that there are other ways of thinking to bring about a different, more harmonious reality. Our fragmented, mechanistic notion of order derives from the modern conception that our earth is only part, not – as it was with the Greeks – the centre, of the immense universe of material bodies. The implications of this idea permeate modern science and technology today and also our general attitude to life.

The dialogue develops as an attempt to find another way of thinking; it is an exercise in unfolding some of the vagaries of thought, by forty-four peole who gathered to meet with Professor Bohm to consider with him some of his ideas on a number of subjects: from implicate order to soma-significance, from fragmentation to wholeness.

The late **David Bohm** was Emeritus Professor at Birkbeck College and a fellow of the Royal Society. His work in physics had led him to propose the idea of quantum potential, a means by which the view of universal, unbroken wholeness, implicit in relativity theory, might be understood in the context of the more abstract, fragmentary approach of quantum mechanics. Moreover, he was interested in the philosophical implications of quantum and relativity physics. He wrote many books including *Wholeness and the Implicate Order* and *Thought as a System* (both published by Routledge).

Unfolding Meaning

A Weekend of Dialogue with David Bohm

David Bohm

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CONTENTS

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Teachers often comment that they learn as much from their students as they actually impart, but seldom does this seems to be the case from the point of view of the student. Occasionally though, a flow of increased understanding does take place between teacher and student. This tends to happen when the separation between those roles breaks down and a flow of dialogue imbued with mutual respect takes place. Then a true collaboration occurs, and the result is something greater than might have come from the more usual, simple transference of information.

Professor David Bohm is one of those rare men who recognizes and enjoys this way of working — or, as he would put it, participating in a dance of the mind. It has been a great privilege to have had the opportunity of sharing his thoughts and his company.

I would like to take this opportunity to thank his wife Sarah Bohm whose enthusiastic encouragement helped to make the event upon which this book is based, such an enriching experience. I would also like to thank Peter Garrett, the European co-ordinator of The Foundation of Universal Unity, (now the Emissary Foundation International) for organizing the event; the staff and management of the Three Ways Hotel for their remarkable care and skill in providing a setting that facilitated the smooth flow of our deliberations; Cliff Penwell, Mynda Itzigsohn, and especially Lesley Wilson and Tuli Corbyn for their efforts in helping to transcribe the very complicated conversations on the taped recordings, and Lindsay Rawlings for his contribution of the cover design and photograph for this edition.

Also David Bohm wishes to acknowledge the immense value of earlier discussions with J. Krishnamurti and with Dr. P. de Mare among others.

Donald Factor

INTRODUCTION

by

Donald Factor

Ideas, concepts and theories are the stuff of thought, and thought affects the world in pervasive ways. What we think about reality can alter our relationship to it, just as what we perceive in the world around us can alter our thoughts. Thought is the ground upon which our understanding rests. With thought we see the world and in a continuing process learn to interact with that world. We can look beyond our raw perceptions and alter the course of our actions. We can solve problems; we can create new products, technologies, ways of dealing with our environment and with one another.

But much of what we think remains hidden from our conscious awareness. Within our minds we carry a record of past experience, of lessons learned, of incidents and details long forgotten. Our thoughts are coloured and conditioned by such limits as our language and our culture. We interpret our experience through a mixture of conscious and unconscious memories, imaginings and desires, and with these we organize our world. Often our thoughts, when acted upon, lead to unexpected and sometimes unimagined results. They seem to contain unrecognized implications of meaning of which we knew nothing, and that appear in spite of what we might have thought was our complete understanding. How then might we evaluate our thought? How might we discover whether or not our most cherished ideas are in fact valid and relevant to the circumstance before us? What do our thoughts mean?

This book is a record of an experiment in unfolding some of the vagaries of thought — an experiment conceived and developed during the course of a weekend of conversation between forty four people who gathered to meet with Professor David Bohm and to consider with him some of his ideas on a far-ranging list of subjects. All had some familiarity with his work and an interest in looking further

into its implications. Many had attended various conferences, seminars and workshops where a leader, or an invited expert, either taught or guided the participants toward an increased understanding of his or her area of expertise. This weekend turned out to be very different.

David Bohm is Emeritus Professor of Theoretical Physics at Birkbeck College, The University of London. His work in physics has been predominantly concerned with the problem of motion and process which relativity physics deals with but quantum theory does not. Out of this interest he proposed the idea of a quantum potential, a means by which the view of universal, unbroken wholeness, implicit in relativity theory, might be understood in the context of the more abstract, fragmentary approach of much of quantum mechanics. His theory of the implicate order, an approach whereby implicit potentials can be seen to unfold out of a universal, unbroken field into explicit phenomena before being re-enfolded, has provided a new and valuable interpretation of quantum mechanics, and has provided a basis not only for new insights in physics but also for a whole range of other subjects.

For many years Professor Bohm has been especially interested in the philosophical implications of quantum and relativity physics, and with discovering a metaphor that might make their meanings accessible to a general public unfamiliar with the mysteries of higher mathematics. His feeling has been that this is important because the mechanistic world-view that seems to dominate contemporary science and society has led to a state of increasing fragmentation, both within the experience of individual human beings and in society as a whole. The fact that this world-view is incomplete, and that it has not been widely recognized as such, has caused it to become bound up within a broad area of misunderstanding deriving largely from a misunderstanding of science in general, but also — and more importantly — from a general confusion regarding the nature of thought and of its relationship to reality.

He has suggested that thought is, by nature, incomplete. Any thought, any idea, any theory, is simply a way of seeing,

a way of viewing an object from a particular vantage point. It may be useful, but that usefulness is dependent upon particular circumstances — the time, the place, the conditions to which it is applied. If our thoughts are taken to be final, to include all possibilities, to be exact representations of reality, then eventually we run up against conditions where they become irrelevant. If we hold to them in spite of their irrelevance, we are forced either to ignore the facts or to apply some sort of force to make them fit. In either case fragmentation is the result.

Professor Bohm's writings on universal wholeness, and his proposals concerning the implicate order have begun to have an influence on diverse disciplines. His ideas are central to what has become known as 'the holographic paradigm'. These ideas, which are explained and discussed in the main text of this book, have provided a new way of understanding a great many phenomena ranging from some of the problems of quantum physics to health care, social organization, religion, and the workings of the human mind itself.

In order to provide an opportunity to inquire more deeply into some of his thoughts, The Foundation of Universal Unity invited Professor Bohm to spend a weekend discussing these thoughts with a group of people of varying ages, nationalities and professional background. The intention was to discover if, by careful attention, a new and more fruitful vision of the possibilities for a greater harmony in the individual and in society might arise.

On the 11th of May, 1984, the group gathered at a small, country hotel in the Cotswold village of Mickleton, Gloucestershire, England. Professor Bohm, accompanied by his wife Sarah, arrived seeming tired and preoccupied. This was to be his first experience of such a gathering. He had come prepared to give three talks, and to then develop his ideas with the group through question and answer sessions. As the weekend unfolded, though, a very different experience began to emerge both for Professor Bohm and for all the participants.

The sessions developed an atmosphere of contained, mutual concern for the revelation of deeper insights. A spirit

of friendship and respect between all those present emerged, and this quickly grew into a harmonious field where proposals of many sorts could be collectively investigated in safety and allowed to expand into new levels of understanding. A dialogue developed in which each participant was able to put aside his own views and listen to those of others. It became increasingly clear that no point of view was in itself complete, and that a collective process of thought was the means by which understanding could be enriched. This fact became the focus of the group's attention. No conclusions were reached nor were any programs initiated; rather the appreciation of a continual unfoldment of new insights revealed through friendly conversation was seen to be the means by which an increase of harmony might appear.

When such a process is translated into print it tends to take on the appearance of a finished product. The atmosphere out of which it emerged disappears, leaving only the arguments by which the various speakers hope to win agreement. Abstracted from the context of their creation the ideas stand naked, vulnerable to judgement, to criticism, to mere acceptance or rejection. This of course, is one reason for preserving ideas in print. As Professor Bohm suggests in the course of these discussions, 'Ideas must be vulnerable.'

The ideas considered in these pages should be seen as part of a work in progress. They represent a slice of a creative process and they are presented not as conclusions but as an example of one way that new ideas might be raised, inquired into, and allowed to unfold further. They also introduce a new phase of Professor Bohm's work, one in which the interactions between a group of individuals provide the focus of energy in which new meanings might be perceived, and where in his terms both the content and context of thought enfold each other, and unfold into new meanings and insights.

In a conversation between forty five people there is much apparent clumsiness. People do not share their thoughts aloud in perfect sentences of a sort that the reader of a book might ordinarily demand. There are many false starts, many

incomplete proposals. Often in the course of these sessions, questions were raised, or statements made, that seemed irrelevant; but just as often, these opened the way to new and deeper levels of understanding. In attempting to document the proceedings I have tried to preserve as much as possible the flavour of the event. I have opted for a balance that might make the ideas intelligible, while preserving something of the flow of interaction between the participants that was central to the experience. I have used the term 'Question' to mark the contributions by participants other than David Bohm, although only in the early stages of the dialogues did they particularly tend to take the form of questions. As the conversations progressed they became, simply, parts of the emerging whole.

I have only been able to include here the dialogues in which the entire group was present. In addition to these main discussions there were other sessions in which the larger group split into three smaller groups, and of course there were numerous more intimate conversations over meals, and so on.

THE IMPLICATE ORDER
A NEW APPROACH TO REALITY

Professor Bohm: Throughout history there has been a succession of world views; that is, general notions of cosmic order, and of the nature of reality as a whole. Each of these views has expressed the essential spirit of its time, and each of them in its turn, has had profound effects on the individual, and on society as a whole, not only physically, but also psychologically and ethically. These effects were multiple in nature, but among them, one of the most significant is notions of universal order.

I'll begin by giving two examples of world views that are of key importance in this discussion. The first of these is the ancient Greek notion of the earth at the centre of the universe, and the seven concentric spheres in the heavens in an order of the increasing perfection of their natures. Together with the earth, they comprised a totality that was regarded as an integral organism, with activities they regarded as meaningful.

As suggested, especially by Aristotle, each part had its proper place in this organism, and its activity was seen as an effort to move toward that proper place and to carry out its appropriate function. Man was thought to be of central importance in this whole system, and this implied that his proper behaviour was to be regarded as correspondingly necessary for the over-all harmony of the universe.

Now in contrast, in the modern view the earth is a mere grain of dust in an immense universe of material bodies — stars, galaxies, and so on — and these, in turn, are also constituted of atoms, molecules, and structures built out of them, as if they were parts of a universal machine. This machine, evidently, does not constitute a whole with meaning — at least, as far as can now be ascertained. Its basic order is that of independently existent parts interacting

blindly through forces that they exert on each other.

The ultimate implications of this view of universal order are, of course, that man is basically insignificant. What he does has meaning only in so far as he can give it meaning in his own eyes, while the universe as a whole is basically indifferent to his aspirations, goals, moral and aesthetic values, and, indeed, to his ultimate fate. It is clear that these two views will, in the long run, have very different implications for our general attitude to life, which can be profound and far reaching. For example, man tends to feel much more at home with an organic point of view — organismic.

Toward the end of this talk I'll discuss some of these implications in more detail. But for the present I'll merely call attention to the fact that a mechanistic notion of order has come to permeate most of modern science and technology, and for this reason has begun to affect the whole of life.

Now it's in physics that the mechanistic world-view obtained its most complete development, especially during the nineteenth century when its triumph seemed almost complete. From physics, mechanism has spread into other sciences and into almost all fields of human endeavor — that is, the mechanistic attitude. So some examination of the form that mechanism has taken in physics is called for if we are to understand what has by now become a more-or-less dominant world view which deeply affects all of us. In this examination the correctness and necessity of mechanism has to be evaluated and criticized, especially with regard to whether or not the actual state of knowledge in physics continues to sustain and support this view, as well as to whether or not alternative views are possible.

I'll begin by listing the principal characteristics of mechanism to make this idea more clear, and contrast its main features with those of an organismic type. Now firstly, the world is reduced as far as possible to a set of basic elements. Typically, these have been taken as particles, such as atoms, electrons, protons, quarks, and so on. But you can also add various kinds of fields that extend continuously

through space, such as electromagnetic and gravitational. Secondly, these elements are basically external to each other, not only in being separate in space but, more important, in the sense that the fundamental nature of each is independent of that of the other. Therefore the elements don't grow organically as parts of a whole, but rather, as I suggested earlier, they may be compared to parts of a machine. The forms are determined externally to the structure of the machine in which they're working. Now finally, as I also pointed out earlier, the elements interact mechanically, and are therefore related only by influencing each other externally — for example, by forces of interaction that do not deeply affect their inner natures.

In contrast, in an organism, the very nature of any part may be profoundly affected by changes of activity in other parts, and by the general state of the whole, and so the parts are basically internally related to each other as well as to the whole. Of course in a mechanistic view the existence of organism is admitted since it is obvious. But it is assumed, in the way I just described, that ultimately you can reduce it all to molecules such as DNA and proteins, and so on. So eventually the organism is a convenient way of talking about a lot of molecules. They may even say that some new properties and qualities have emerged, but they are always implicit in the molecules. In addition, it's admitted that this goal of a complete mechanistic description is yet to be fully achieved, as there is much that is still unknown. So it's essential for the mechanistic-reductionist program to assume that there is nothing that cannot eventually be treated in this way.

Of course, there is no way to prove this assumption. So to suppose that this assumption holds without limit is bascially an article of faith which permeates the motivation of most of modern science and gives energy to the scientific enterprise. This is a modern counterpart of earlier faith in religious belief based on more organismic types of view, which also in their time gave energy to vast social enterprises. That is, we have not lost the age of faith; we have really changed from one faith to another. And faith is, according to Teilhard de

Chardin, just holding the intelligence to a certain world view — that's his definition of faith.

Now how far can this modern faith in mechanism be justified? Of course, there is no question that it works in a very important domain. It has brought about a revolution in our mode of life. Indeed, during the nineteenth century, as I said, there seemed to be little reason to doubt this faith, because of what appeared to be several centuries of successful application leading to vast vistas in the future. Therefore it's hardly surprising that physicists of the time commonly had an unshakable confidence in the correctness of this whole thing. And I may illustrate this by referring to Lord Kelvin, one of the leading theoretical physicists of the time, who expressed the opinion that physics was more-or-less complete in its development. He therefore advised young people not to go into the field, because further work in it would only be a matter of refinements in the next decimal points.

He did however mention two small clouds on the horizon. These were the negative results of the Michaelson-Morley experiment, and the difficulty in understanding black-body radiation. Now we have to admit that Lord Kelvin was at least able to choose his clouds properly, because these were precisely the points of departure for the radical revolution in physics brought about by relativity and quantum mechanics, which overturned this whole conceptual structure. Now this clearly illustrates the danger of complacency about our world views, and makes it evident how necessary it is to constantly have a provisional, inquiring attitude toward them. That is, in some sense, we have to have enough faith in our world-view to work from it, but not that much faith that we think it's the final answer, right?

I couldn't here go into a detailed explanation of how all this took place — this change in view — but I'll give now, beginning with relativity, a brief, non-technical sketch.

I can start by saying that relativity introduced a number of fundamentally new concepts regarding space, time and matter, which are quite subtle. The main point for our purposes here is that the notion of separate and independent particles as basic constituents of the universe had to be given

up. The basic notion instead was the idea of the field that spread continuously through space. Out of this you had to construct the notion of a particle. I could illustrate these ideas in terms of the analogy of a flow of fluid such as a vortex. Now within this fluid there is a recurrent, stable pattern. You may abstract it in your mind as a vortex, though there is no vortex. There is nothing but a flowing pattern of water. But a vortex is a convenient word to describe that pattern.

Now if you take two vortices close together, they modify each other producing a different pattern, and eventually, if you bring them together, they merge into one vortex. So you can see, there is an inherent interaction of these patterns, but the basic reality is unbroken wholeness in flowing movement. Separate entities such as vortices, are relatively constant and independently behaving forms abstracted by the mind from the whole in perception and in thought.

This was of course, well known to nineteenth century physicists, but it was generally thought that real fluids such as water were constituted of myriad elementary particles which flowed only in an approximately continuous way, like grains of sand in the hour-glass. The reality underlying the microscopically observed fluid was considered to be a structure of discrete, mechanical elements in the form of particles. But on the basis of the theory of relativity Einstein gave arguments showing that such elementary particles would not be consistent with the laws of physics as developed in his theory. So instead, he proposed a set of continous fields pervading all space, in which particles would be treated as relatively stable and independent structures in limited regions in which the field was strong. Therefore each particle is explained as an abstraction of a relatively independent and stable form, as with the vortex, spread out through space with no breaks anywhere. The universe is seen as unbroken wholeness in flowing movement.

This approach contradicted in an important way the assumption of separate, elementary particles as constituents of the universe, that had been characteristic of the mechanistic view. But still, this theory retained some of the