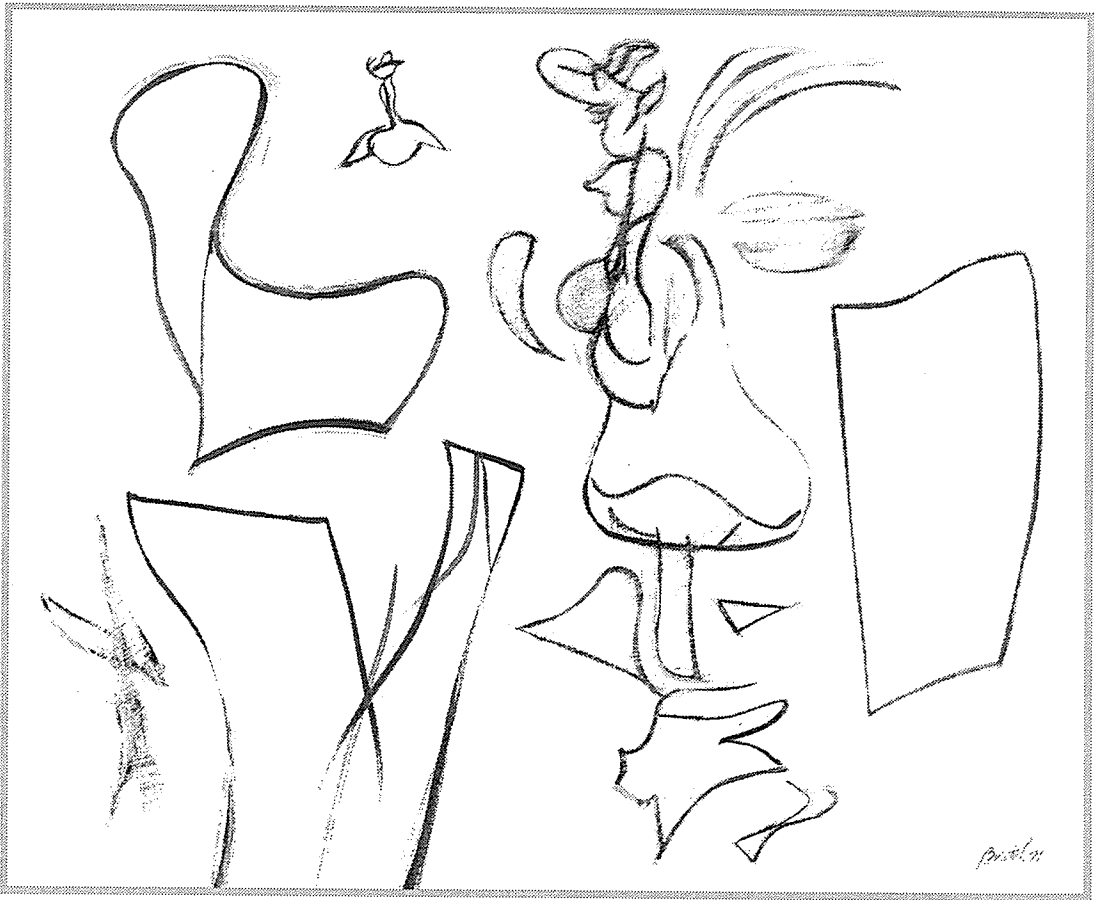


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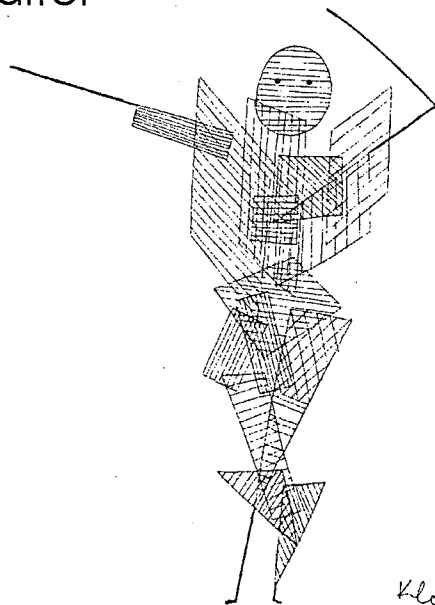
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a word from our managing editor

We have two very interesting articles for you this year: Geoffrey Chew's "*Reflections on Reality Inspired by an Event Model of Evolution*" and "*Mind and its Wholeness*" by Arleta Griffor, reprinted from an out-of-print British publication, *The Search for Meaning*.

We had planned to also include an article on "link theory" by Tom Etter and had delayed this issue in hopes of doing so. Unfortunately, it has still not been released for publication and we as we are well past our press deadline, we have decided to publish it in our next issue. In its place we have a new short piece by Tom on "*Theories of Psi*."



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We regret to announce that the ANPA West 14 Conference will not take place this year. We are currently preparing a proposal for a grant to make possible the next year's conference and an amplified publication of the ANPA West Journal, both in print and on line.

We greatly appreciate your continued support and will let you know as soon as we have any news.

Reflections on Reality Inspired by an Event Model of Evolution¹

Geoffrey Chew

A few months ago, when Doug Powers called to ask whether I might be willing to participate in this dialogue with Daniel Matt, I had just uncovered an intriguing mathematical representation of the universe through its event history — a model I had been seeking throughout the last decade. Without pausing to consider the practicality of explaining my new toy to the audience here tonight, I enthusiastically accepted Doug's invitation. Subsequently I have made a huge effort to find a way of justifying to you to my enthusiasm over a mathematical model, but I have failed. The model depends too heavily on quantum mechanics. No way has yet been found to make sense, using ordinary language, out of quantum mechanics. So what you will hear from me tonight will be poetry inspired by a mathematical model. I shall not try to be systematic but will throw at you an assortment of poetic speculations about reality that seem in the spirit of the evening. Although many of the ideas have been expressed long ago by thinkers much wiser and far more gifted in poetic expression, embellishments suggested by my model may prove entertaining to you.

A central theme of my poetry tonight is "event history". To a certain extent the notion of "event" parallels the notion of "particle". Both notions are *discrete*, in contrast to continuous concepts

such as distance or time. One can speak neither of $3\frac{1}{2}$ events nor of $3\frac{1}{2}$ particles. Only integer numbers make sense. "Event" and "particle" both are familiar words in everyday language and both associate with a notion of "scale".

A bacterium and a baseball are particles of certain scale, albeit different scales. The earth is a larger-scale particle. A distant galaxy viewed through the Hubble telescope also displays attributes that allow characterization as a "particle," although on a still-larger scale. The feature shared by these examples is "spatially-localized energy with some degree of permanence." (Remember equivalence of energy and mass.) Consider now "events". World War II may be described as an event on the scale of years. Titanic sinking was an event on the scale of hours. Murder by gunshot to the head is an event on the scale of seconds.

If particle scale is sufficiently lowered, quantum-mechanical effects alter the meaning of "particle," but the term continues to be used. We refer to an electron as a particle even though electrons exhibit bizarre quantum features not shown by baseballs. We even refer to those crazy quarks as "particles". Stable localization of energy continues to be the common feature.

Similarly, if *event* scale is sufficiently lowered, quantum-mechanical effects alter the meaning of "event" without forcing abandonment of the

name. When a neutron suddenly ceases to exist — a process called “radioactive decay” -- an “event” has occurred at a certain scale. Energy *transfer*, localized *both* in space and in time, is described by the term “event,” whatever the scale.

At higher scales the meaning of event is usually taken to include specification of the particles between which energy is transferred. In the event of a baseball being hit by a bat, energy is transferred from bat to ball. When neutrons decay, energy is transferred to electrons and neutrinos. But the meaning of “event” provided by my model requires no reference to particles. The energy transferring event idea stands on its own! Indeed, at the *lowest* scale admissible by the mode} for events there can be no meaning for particles. In poetic language, this scale associates with “big bang.” I am referring to an event scale first appreciated by Max Planck.

At the dawn of the 20th century it was recognized by Planck, the discoverer of quantum mechanics, that a combination of gravitational constant, velocity of light and the quantum constant uncovered by Planck, defines a time scale 43 orders of magnitude below that of seconds. All models of big bang, including mine, recognize meaninglessness for time intervals that are small on Planck’s time scale. Absence of meaning stems from quantum-mechanical superposition leading to “Heisenberg uncertainty”. Dick Feynman often said, “If you are comfortable with quantum superposition, you do not understand quantum mechanics.” As remarked in my introduction, I cannot tonight remedy this dilemma. With the language available to me, cannot provide you with any understandable explanation of Planck’s limiting scale.

In poetic language to be repeated later with variations, my model represents elementary particles, such as electrons or quarks, through *patterns* of huge numbers of “gentle” events that individually are at Planck-scale but that collectively build stable patterns defining a much larger scale².

The notion of “gentle event,” meaningful at any scale, is crucial to creation and maintenance of an “identity” such as a particle. The adjective “gentle” describes energy transfer so small as not to inhibit identity development and perpetuation. Violent events, such as neutron decay or suicide by jumping off the Golden Gate Bridge destroy identity by large energy transfer.

I am using the vague but suggestive term, “identity,” to characterize a certain prominent feature of our universe -- a feature typified by the term “particle” — as well as by the broader term “object” but even more general than object. An “identity” is “localized” and is identifiable through “perception” by other identities. *Your identity* constitutes an important example. A degree of stability is an implicit aspect of identity. Creation and maintenance of identity at various scales through gentle events is a major sub-theme of my poetry

I have come to appreciate the spirit of such poetry to be embedded in Buddhism and during the late twenties to have found Western expression in Whitehead’s celebrated treatise on “Process and Reality”. Whitehead reasoned that “object” and, more generally, “identity” derives meaning from “actions” (nouns derive meaning from verbs) and that “observations” of objects amounts to other actions. Objective reality flows from “process” Whitehead knew

about quantum mechanics and may well have been influenced by the notion of *discrete* quantum event, such as the emission of a photon that *suddenly* changes the state of the emitting system. In any case it is possible to associate Whitehead's "process" with a sequence of discrete events. The model I have been pursuing might be described as a quantum-cosmological version of Whitehead's "reality" through process.

An instance of identity maintenance through gentle events, an example of which my colleague George Weissmann is particularly fond, is provided by particle detection in a device known as bubble chamber. Appearance of a *string* of bubbles in the chamber leads physicists to declare that a particle has been detected. Each bubble manifests an event in which *the* particle collides gently with an atom, knocking off a few loosely-bound electrons that stimulate bubble formation. *The* particle continues almost unaltered to the next bubble-generating event. A single bubble cannot be interpreted as evidence of *the* particle; a string of bubbles is required. Particle identity is evidenced by an event *pattern* sustained through gentleness of ingredient events.

Violent events that destroy identity, even though attention grabbing, are much rarer than gentle events. Our conversation tonight is a fine example of gentle event on the scale of hours. You and I are being slightly altered by the conversation but we maintain our separate identities and the "gentle event" is hardly recognized as such. On the other hand, if one of you were to pull out a gun and shoot

me, the "violent event" would make headlines.

Gentle events not only can perpetuate identity but are capable of *creating* new identity. Biological examples abound and chemistry overflows with illustrations of "synthesis" -- transformation of particle combinations into new identities. A bottom-line question is: Can electrons, quarks and other particles called "elementary" be understood as patterns of gentle Planck-scale events? My model indicates an affirmative answer: Gentle Planck-scale events in a sense create "something" out of "nothing".

Having placed great emphasis on distinction between "gentle" and "violent" events, something needs to be said about the associated difference between "tiny" and "huge" transfers of energy. The distinction, however (which involves *energy* scales), depends on quantum mechanics. You will have to accept on faith that quantum mechanics distinguishes high from low energy transfer in an event of prescribed time scale. Let me now recite to you a model-inspired saga of 3 scales.

The first event of all -- big bang -- occurred at Planck-scale and in total absence of localized identity or, indeed, of meaning for space. A huge pattern of subsequent gentle Planck-scale events led from "nothing" to "something": an "elementary-matter" manifestation of stable identity accompanying a *second* event scale far above Planck-scale. This second level I call *particle scale*.

Further along the historical chain of events came development of *objective reality* -- i.e.,

shared memories of observation of one identity by *other* identities. The objectively-real universe emerged from huge patterns of observation-interpretable particle-scale gentle events — stable patterns (like George Weissmann’s bubble strings) that established a third scale as far above particle scale as particle scale is above Plank scale. This third level I call *observer scale*.

Memory of observation resided in slight, observation-induced, alteration of the event pattern identifying “observer”. Because the scale associated with “identity” lay so far below that associated with “observation,” different observers could agree that they had observed the *same* identity. Einstein could confidently assert that, “the moon is really there.” At this third level, as a component of objective reality, event-based meaning emerged for “physical space” and “geometry”. You will correctly guess from the name assigned to this third level that “observer scale” embraces time intervals accessible to (human) physical measurement. Observer scale might perhaps be called “scientific scale”. Science predicated on objective reality is carried out at this level. (To the extent that science is a human invention, the term “human scale” might be considered appropriate. I prefer, however that my poetry not suggest a distinguished status in the universe for homo sapiens.) Although science makes inferences about scales both below and above its own scale, “scientific knowledge” stems from measurement at observer scale.

Accompanying a *smallest* meaningful event scale (Planck) there is a *largest* meaningful scale, set by the age of the universe. I am talk-

ing about *Hubble* scale.

Roughly one human generation after Planck’s discovery of energy quantization, the astronomer Hubble, by measuring the redshift of distant galaxies, found the universe to be expanding. The observed rate of expansion implies that, in describing our present universe, events whose scale is larger than tens of billions of years -- the Hubble scale — have no meaning. Meaningful event scales necessarily lie between those of Planck and of Hubble. In our present universe, however, these limiting scales differ by 60 orders of magnitude. From our human location roughly in the middle of the allowed scale range, both lower and upper limits usually seem infinitely remote. Tonight’s poetry, nevertheless, is inspired by *finiteness* of universe.

Because Hubble scale is 26 orders of magnitude larger than observer scale, there is ample room in our present universe for important event scales *beyond* those on which science is based. There may be importance for patterns of large-scale gentle events interpretable *neither* as identity *nor* as awareness of *other* identities. Perhaps certain of these patterns relate to the phenomenon loosely called “self consciousness”. Energy transfers in such events would be so tiny as to elude physical measurement. Self-consciousness would be inaccessible to a science based on objective reality. Future elaboration of my 3-scale saga may eventually speak of “consciousness scale”.

Let me now turn attention to a pair of detailed inferences from the model’s mathematical structure:

(a) Each event is a source or sink of radi-

tion that *at particle scale* is identifiable with electromagnetism. Any detailed theory of objective reality based on the model promises to invoke electromagnetic signals connecting particle-scale events. Few scientists would find this surprising. To the extent that “sensory apparatus” is understood, mechanisms are all electromagnetic. It is unclear whether radiation should be called “electromagnetic” when attached to events at scales beyond “observers,” but according to the model there is some relation thereto. Associating “soul” with self-consciousness, a religious viewpoint may find unacceptable that consciousness relates to electromagnetism. I personally have no problem with an electromagnetic event-pattern representation of my soul. I remind you that according to the model, for a universe so young its Hubble scale falls *below* observer scale, no meaning is to be expected for objective reality, consciousness or “soul”. Such notions require an “old” universe. (On the other hand, with further aging of our universe, concepts presently unimaginable may develop meaning.)

(b) The event-based model finds Einstein’s general relativity based on single-time space-time geometry, although accurate at intermediate scales (including observer scale), fails not only at particle scale and below but at Hubble scale. Although it is a good approximation in an “old” universe to treat time as continuous, the event-based model leads to two distinct meanings for time:

- There is local reversible time, corresponding to that of physics, which relates to the approximate stability (permanence) of

matter. Matter stability reflects cyclic patterns of events in *physics time*. Cyclic patterns are *reversible*.

- Expansion of universe in the event-based model is, on the other hand, *irreversible*. *Cosmological* time in the model is different from physics time, a feature that promises to resolve long-standing puzzles surrounding “physical” interpretation of quantum mechanics.

The model yields a relation between universe age and redshift differing by 50% from that of general relativity (a redshift translated by standard cosmological model into a universe age of 10 billion years is translated by the event-based model into 15 billion). Other novel and verifiable Hubble-scale predictions follow from finiteness of the model’s “physical” space-time. Even without further development, the event-based model can be tested by deep-space astronomy.

Having thrown at you tonight far more than you can reasonably be expected to absorb, I apologize and thank you for your patience. Clarity, I fear, has been displaced by enthusiasm.

Notes and References

1. Contribution to AHIMSA Dialogue, February 18, 1997
2. Although World War II might be described as a huge pattern of individual murders, the parallel is flawed because murder is not gentle and the collective pattern not stable. “Identity” was not created by the slaughter of World War II.

Theories of Psi

By Tom Etter

When a belief is widely held in the face of overwhelming evidence to the contrary, we call it a superstition. By that criterion, the most egregious superstition of modern times, perhaps of all time, is the “scientific” belief in the non-existence of psi. Dean Radin’s excellent new book “The Conscious Universe” is the best debunking of this superstition to date. If you really take in the parade of facts he presents, you will never again be a happy believer in the official mythology. Those of us who have already said goodbye to this form of happiness may be tempted to renew our hopes that research into the so-called paranormal may at last become respectable. I’m not holding my breath, though. Here’s what William James wrote in 1909:

Not long after Darwin’s ‘Origin of Species’ appeared I was studying with that excellent anatomist and man, Jeffries Wyman, at Harvard. He was a convert, yet so far a half-hesitating one, to Darwin’s views; but I heard him make a remark that applies well to the subject I now write about. When, he said, a theory gets propounded over and over again, coming up afresh after each time orthodox criticism has buried it, and each time seeming solid and harder to abolish, you may be sure there is truth in it. Owen and Lamarck and Chambers had been

triumphantly dispatched and buried, but there was Darwin making the very same heresy seem only more plausible. How often has “Science” killed off all spook philosophy, and laid ghosts and raps and “telepathy” away underground as so much popular delusion? Yet never before were these things offered us so voluminously, and never in such authentic-seeming shape or with such good credentials. The tide seems steadily to be rising, in spite of all the expedients of scientific orthodoxy.

Why was James’ optimism about the “rising tide” so wrong? The key wrong word in his over-confident statement is “theory”.

Those who think of parapsychology as something modern will be surprised to learn that the first society for the scientific study of psi was formed in the 18th Century by a philosopher of the enlightenment named Maimonades (not to be confused with Moses Maimonades, who lived in the Middle Ages.) His society collected data for 15 years, but finally dissolved itself with the statement that, although their data had fully convinced them of the reality of the phenomena they were investigating, collecting more data was pointless, since nothing resembling a theory was anywhere on the horizon.

Unfortunately, I don’t see that very much

has changed since this announcement. Most of the so-called theories today seem, if anything, worse than the turn-of-the-century speculations of first-rate minds like William James and Frederick Meyers. The problem is not that we lack a solution to some well-defined puzzle. The real problem is that science, as we know it, doesn't provide us with a *context* in which the puzzling data of psi make any kind of theoretical sense at all.

It has been truly said that today's science is based on 300-year-old philosophy, and today's philosophy is based on 300-year-old science. This creates an odd situation, since both science and philosophy have moved into a vastly larger world than anything that could have been imagined in the year 1700, and yet both are still trying to translate their new discoveries into the belief system of that more parochial age. The situation is much like that in the 16th century, when the blossoming spirit of the scientific age still had to express itself in the language of Medieval scholasticism.

What new conceptual system will take the place of today's scholasticism? What new language will give us the words we need for our new thoughts? All I have to say now is that this new system, whatever else it does, must make room for the following three ideas:

1) Causality is a special case of a more fundamental explanatory principle which is unchanged by reversing past and future.

2) Logical words like AND and OR are *relative*, like left and right or up and down.

3) The polarity of *subject* and *object* pervades all of nature.

Are these the hottest items off the Web page of the Delphic Oracle? No, they are actually some rather old technical findings of ordinary physics, translated into English. This says something about the "new" language, and of how assiduously we have avoided it. Let's look at these three findings in a bit more detail:

First, cause and effect. Note that these are perfectly good working words in everyday life, where they point to the possibilities for using certain events as means to others, and otherwise present no mysteries. [see von Wright ref]. However, the word "causality" has also been applied by philosophers to all kinds of other things, including Newtonian determinism. Remember, Newtonian determinism says that if we are given the exact position and velocity of every particle at some particular time, we can calculate these for all future times (and also for all past times, which is sometimes overlooked. Newton's laws are in fact symmetrical in past and future.) Never mind that this is already stretching the meaning of causality pretty far — what I want to point out here is that Newtonian determinism was given a more natural *a-causal* statement in the 18th century as the so-called principle of *least action*, which says that objects move from their *initial positions* to their *final positions* along paths that minimize a certain quantity called action. Note that in this formulation the *states* of the world no longer include velocities, and that motion is now determined only when we specify both the *first* state and the *last* state of a system.

It turns out that we can translate this least action principle into a law that applies to

random rather than mechanical processes, where least action now turns into *least improbability*. The resulting mathematical formalism does in fact transform common-sense causality into a new and more general explanatory principle — for one thing, it allows cause-and-effect to go backward in time. The math here was discovered in the 1960's by Helmut Schmidt, and independently a bit earlier by myself. It was this math that suggested Schmidt's experiments in backwards PK, whereas I eventually turned it into the link-theory interpretation of quantum mechanics.

It should be noted that the need to go beyond causality in thinking about psi has been recognized by many people, notably Jung and Pauli, and was the subject of a book by Arthur Koestler [ref.].

The relativity of AND and OR was discovered by von Neumann in the late 1920's in connection with his profound and definitive work on the foundations of quantum mechanics. The uncertainty principle says that you can't measure both position and momentum. The classical explanation for this is that measuring either one disturbs the other. What von Neumann discovered is that the real reason you can't say "position x AND momentum y" is that AND has a different meaning for the observer of x than it does for the observer of y, just as left and right have different meanings for observers facing in different directions.

A principle of relativity always raises the question of what is *not* relative, i.e., what is *invariant* under change of viewpoint. Von

Neumann, in the 1930's, tried to answer that question for AND and OR. I don't know how to explain it, but in so trying, the most brilliant mathematicians of our century made one of the stupidest mathematical mistakes one can possibly imagine: he simply piled all of the viewpoints into one heap and said "*There*, that *heap* is what is invariant." His heap was billed as a brave new invention called quantum logic. Needless to say, it was a complete flop, and has given logic a bad name in physics ever since. The answer that von Neumann missed has finally been supplied by NatComp physics, and it turns out to be beautifully simple and easily extended to the kind of math that will be needed for a theory of psi.

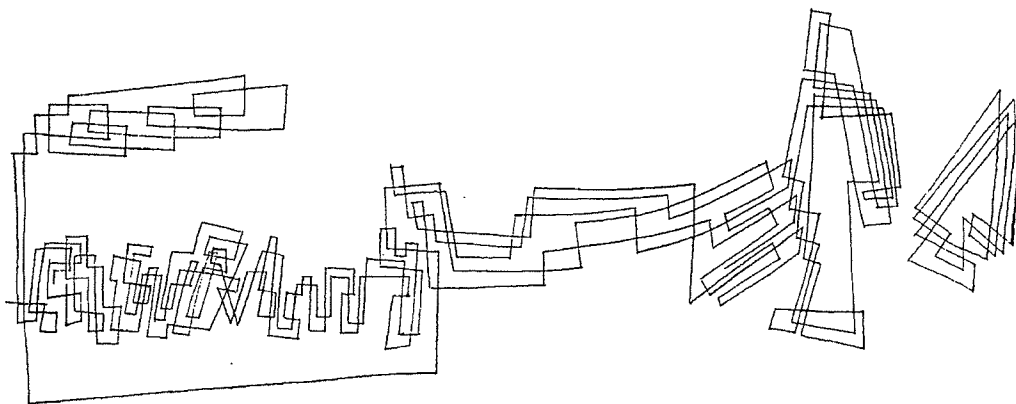
Finally, a very brief look at subject and object. That these concepts pervade physics is hardly news, since subjective change, i.e., change of viewpoint, is the key concept in all theories of relativity. In the middle of the last century, the mathematician Hamilton made the surprising discovery that subjective and objective change are indistinguishable in Newtonian mechanics. To put it another way, it is impossible to ever tell whether you are keeping a fixed viewpoint on a changing object, or you are changing your viewpoint on a fixed object. Hamilton's principle has come down into quantum mechanics intact, where it has leads to a number of useful mathematical techniques.

Another way to state Hamilton's principle is that you are free to change your viewpoint back and forth between that which sees all change as subjective and that which sees all

change as objective. But what if this “meta-change” of viewpoint were itself within the domain of Hamilton’s principle? Then it would have to have an objective counterpart! In quantum terms, this would mean that there is a two-state particle which is the “carrier” of the subject-object distinction. This particle, which has been called the *Janus particle*, would belong to all quantum objects, but its state would have to be unobservable, since if we could observe it, Hamilton’s principle itself would break down. It so happens that the existence of a particle with precisely these features is mathematically equivalent to a certain basic feature of quantum mechanics that has not been explained in any other way, namely the fact that probability amplitudes are complex numbers [ref.]. If this is really

the right explanation, then the subject-object polarity is a fundamental aspect of the structure of matter.

Link theory has shown how to view quantum mechanics as a large-number phenomenon within a universe subject to much more general laws. We can easily imagine the breaking of “Janus symmetry” in this larger universe, which would allow matter not only to contain the *polarity* of subject and object, but to contain actual subjects and objects! This would be the beginning of a real theory of mind. Such a theory would completely heal the Cartesian split between mind and matter, thereby presenting us with a myriad of hitherto undreamed of possibilities for mind-matter interaction. At this point, we would probably be ready to start on a real theory of psi.



K.H.

Mind and its Wholeness

Arleta Griffor

Reprinted from The Search for Meaning¹

In a previous paper I said that mind can be understood as the many-level activity of meaning. This would imply that creative perception of ever new meanings should be natural for the human mind. Such a perception, as Bohm suggests, plays a crucial role in maintaining the overall harmony of human existence. On the other hand, we do not see much harmony in the life of individual human beings or in society, and even less in the international context. It is apparent that the global threat of annihilation and misuse of the planet cannot be taken as a display of cosmic harmony.

We may therefore ask, why perception of new, creative meanings does not take place. What is blocking it, or interfering with it to the extent that it seems impossible to see it as having any significant place whatsoever in the overall order of human life? We do not seem to be inclined to consider seriously even its possibility. In this paper we will inquire into these questions with the help of Bohm's "meaning view".

Absolute Necessity, or the Trap Principle

The important point which Bohm makes is that the meanings which constitute the content of consciousness are limited.¹ There is obviously nothing wrong with that to the

extent that these meanings are not confused, and correctly inform our activity within a range of domains where they are relevant. This is actually what takes place in some areas of our technical, practical, and functional activity.

However, the limitation of meanings becomes very serious, if not destructive in its consequences, when we are not aware of it. What takes place in such cases is that meanings which may be relevant within certain limits, become confused when applied beyond these limits.

In the first place we are concerned here with general assumptions and presuppositions which constitute, as it were, a formative level of our activity. What is special about confused meanings at such a fundamental level is that once they are adopted, the whole of our activity becomes a kind of self-sustaining trap designed to defend them.

One form of such a trap is to hold rigidly to one's worldview. That is, to regard it, tacitly or explicitly, as a necessary truth about "how things really are". What takes place in such a case is that an absolute necessity is attributed to the meanings that are limited. In this way they appear to be unlimited and become a source of confusion. For since they are the "truth", everything else has to give way to them. They take on an absolute priority, or an absolute value, dominating one's thinking, percep-

tion, and activity in general. As Bohm writes:

This kind of trap is very difficult indeed to get out of. For the presupposition of absolute necessity operates before one can think reflectively. By the time one can think in this way that he must get out of the trap, he has been carried very far into it by the operation of the stored up presuppositions. It is generally already too late, because by then, one has begun to relieve his sense of uneasiness about what he is doing by means of various forms of self-deception. For example, one may invent false reasons (or rationalizations) that seem to justify not eliminating contradictions in his overall behavior, and he does this because the sense of necessity is so absolute that it will yield nothing, while everything else, including truth and observation of fact must give way to it.²

Such a “trap-principle”, consisting in attributing an absolute necessity to limited meanings, is quite a common contradiction. It operates not only in individual human beings, but also in social groups, and in society as a whole, becoming in this way a dominant factor in the generative order of society.

In society, the generative order is deeply affected by what has a very *general* significance. Indeed the generative order may be regarded as the *concrete activity of the general*. This takes the form of general principles, general aims, and generally accepted values, attitudes, and beliefs of all kinds that are associated with the family, work, religion, and country. In going from these general principles to

the universal, it is clear that the effect on the generative order will become yet more powerful. When a given principle is regarded as universally valid, it means that it is taken as absolutely necessary. In other words, things cannot be otherwise, under any circumstances whatsoever. Absolute necessity means “never to yield”. . . Over a limited period of time, certain values, assumptions, and principles may usefully be regarded as necessary. They are relatively constant, although they should always be open to change when evidence for the necessity of the latter is perceived. The major problem arises, however, when it is assumed, usually tacitly and without awareness and attention, that these values, assumptions, and principles have to be absolutely fixed, because they are taken as necessary for the survival and health of the society and fear all that its members hold to be dear. . . General principles, values, and assumptions, which are taken in this way to have absolute necessity, are thus seen as a major source of the destructive misinformation that is Polluting the generative order of society.³

It is clear that this kind of misinformation⁴ is destructive, because it is implicitly conflict. Individuals, social groups, and nations, entrapped in incompatible sets of basic presuppositions, cannot do otherwise than protect themselves against the threat which they represent for each other. This protection takes various forms, including, as was pointed out, self-deception, but also, all kinds of violence, and the recent development of nuclear weapons. In this way, the very means of pro-

tection bring about proliferation of further conflict.

The current state of fragmentation can be regarded as a byproduct of this general attempt to defend and maintain different fundamental meanings. In other words, fragmentation of human beings and society can be seen as the somatic result of the self-defensive activity of these meanings.

In my previous paper it was said that the world in which we live is for the most part shaped by meanings that make up the content of human consciousness. Insofar as this manmade world is fragmented, full of conflict and violence, we may suppose that the meanings which make up human consciousness are fundamentally confused. They are picked up by each individual through upbringing, education, tradition, culture, etc. The content of consciousness of the individual human being can be therefore regarded as a particular outcome of these general meanings. What follows is that the pattern of self-entrapping activity which these meanings entail, cannot be said to be something different from the activity of each human being. In this way, confused fundamental meanings seem to constitute the very essence of what we are, and it is only natural to protect the essence by all means, because if the essence is gone we are gone as well.

It is clear that the self-entrapping pattern of the mind's activity with its attendant conflict and disharmony, is nothing new. At least as far as the recorded history of mankind goes, there have always been attempts to bring harmony into human life. This suggests that con-

flict and disharmony were inseparable from human existence.

Historical Examples of Dealing with Misinformation

Concerning the historical attempts to bring about harmony, it is interesting to note that they were generally directed at somehow making human beings "see the whole". Typically, however, this has taken the form of providing an idea of the whole.

One form of these attempts were religious systems. They may be said not only to give an overall scheme of things in terms of their value and origin, but also to provide a set of rules for people to follow in order to fit their whole activity into the overall harmony.

Absolute value was given to God as a source of all that is. Misinformation was acknowledged as taking place on the "human level", but it was punished as a sin. To avoid sins meant in other words to hold to the correct information, and therefore, to maintain the overall harmony. In order to secure the credibility of the "original information" concerning the universal scheme of things, this information was regarded as a revealed truth coming out of the very source of all that is. To doubt this was a sin to be punished.

In this way, the whole structure was quite consistent. It could really bring about some limited harmony, insofar as it was generally accepted, and the "original information" was not confused. In fact, it has been working for several centuries, except that as a way of self-protection, other forms of religious meanings were constantly fought against. The

point, however, is that the “original information” eventually came to be questioned. “The whole” provided by religion had to be a solid ground which would enable human beings to know not only how to behave in their everyday life, but also how to think about the material universe. This latter question was settled by making Aristotle’s philosophy compatible with the religious meanings through replacing his “unmoved mover” with the Christian form of God. This added quite a substantial content to the overall religious scheme of things.

There was a certain danger in that as well. For in this way Aristotle’s view of the universe or at least its theological interpretation, became a part of the only admitted truth with regard to “how things are”. In other words, it became a necessary part of fundamental meanings which were to keep order in the life of human beings, if not in the whole universe. Thus, when Aristotle’s map of the universe came to be questioned, it was dangerous for the whole religious structure of meanings. It seemed that to question any part of the structure was to question the necessary and universal order arranged by God. In other words, to question was a sinful activity which had to be punished. Indeed, Giordano Bruno was sent to the stake, and Galileo was jailed, and that was part of the way to protect this particular form of the universal order.

Nevertheless, evidence kept accumulating, suggesting that something might be confused concerning the set of meanings provided by religion. To prevent a total chaos, which the collapsing of the religious meanings was be-

lieved to imply, attempts were made to provide a corrected version of “the whole”. Finally, the nature of the material was left to be dealt with by science, whereas what was non-material remained the concern of religion. In this way, the “original information” got divided into two parts. One part of it was based on revealed truth and belief in it, while the other was based on experiment and logic. The initial idea was that these two parts were not of equal status. The revealed truth was regarded as being of a higher quality than the truth of logic and experiment which was dependent on man.

What is also important to note is that this division in the “original meanings” went in the first place through man, splitting him into material body and non-material soul, and in the second place, through the whole universe, splicing it into material stuff and ensouled human beings. Since to be of nonmaterial quality was regarded as of a higher value than to be material, it is interesting to see that this may well have originated the process which at present manifests itself as ecological disaster. Of course, it is only one of the numerous consequences of this particular attempt to bring about harmony in human life. The corrected version of “the whole” made it possible for science to develop, since scientists were left to investigate matter without being sent to the stake when they came out with facts incompatible with religious meanings. However there was also a danger in that, although of a more subtle nature.

Descartes, who set out to elaborate in more detail the corrected version of “the whole”,

made it quite clear that there is very little need for non-material elements in the universe. He only needed God for designing the laws of nature, and for providing the universe with a certain amount of movement. All the rest he has shown to be possible for man to figure out by himself. There was also the problem of how to secure that part of the “original meanings” which was dependent on man. Since one could not any longer use Aristotle’s authority, Descartes came out with the notion that clear and distinct ideas are implanted in man by God. Consequently our knowledge of the universe was regarded as ultimately secured by God who provided *cogito* with clear and distinct, and therefore true, ideas concerning the world.

Although the role of the religious part of the “original meanings” was not big in Descartes’ structure, it was nevertheless crucial. However, it was almost inevitable that with this explicit decreasing of the non-material element, and the increasing content of science, the religious meanings could in time be overlooked altogether. Indeed, the amount of accumulated knowledge appeared at a certain moment large enough to provide man with a new notion of “the whole”, without non-material elements being involved. It was put explicitly in the form of mechanistic philosophy. In this philosophy the “original information” was based on the belief in the unlimited credibility of the mechanistic approach. This did not explicitly contradict the other belief in the revealed truth. However, since the highest value was given now to the methods of the mechanistic approach, religious “truths”, which could

not be subjected to this approach, were disregarded as a kind of illusion.

We can see that this form of “the whole” did not help very much in bringing about harmony in human life. Insofar as human beings obeyed physical laws, they participated in the kind of harmony which the mechanistic philosophy was concerned with. Furthermore, it was not clear how the “truth” of the mechanistic idea of the universe was secured. Descartes grounded in God the human ability to perceive the world in the correct way. But if God was an illusion, who or what was to secure the credibility of our ideas of the universe? They might be an illusion as well. On the other hand, the immense success of Newton’s physics at that time did not seem to be an outcome of illusion. Consequently, the next generative seed of “the whole” can be seen in Kant’s inquiry into the basis of human knowledge. He did not regard God as an illusion. But by looking more carefully into Descartes’ *cogito* he found that the *cogito* is the only author of the structure of the phenomenal world of experience. This obviously solved, or rather dissolved the problem of how human ideas and the external world are related. There were simply no two kinds of things in need of being related. The mind’s general forms of understanding, or as he ceded them the “categories” of the subject were entirely responsible for the structure of the phenomenal world.

To put it in modern terms, Kant’s claim was that the information content represented by the categories informed the phenomenal structure of the world. In other words, active in-

formation, contained in the subject's forms of understanding, organized unformed matter into the unified world of experience. However, Kant's version of "the whole" was not secured enough. There was no guarantee that the categories were not arbitrary, and even different for each subject. The issue was, what made the categories necessary and universal? Another important point was the rather limited competence of Kant's subject. The categories organized only the phenomenal world of nature. To put the issue sappy, Kant's "whole" did not seem total enough. Accordingly, it was subsequently improved by means of extending the range of the subject's competence. It culminated with Hegel who replaced Kant's subject with the absolute spirit. It is interesting to note that with Kant, Descartes' God became quite unnecessary with respect to the phenomenal universe which could manage to exist due to the subject's forms of understanding. However, through replacing the subject with the absolute spirit a new form of God returned to serve as the formative cause of the universe. Thus God, although first taken away, came back, as it were from another side, to secure again the necessity of the universal order.

There was a certain danger in that as well since the absolute spirit of Hegel was far more concrete than the non-material God of Descartes. Roughly speaking, the absolute spirit worked on a similar principle to Kant's subject in that it informed the structure of the world. However, the important difference was that it informed not only the world of nature, but the totality of what is, including human beings,

society, historical processes, etc. In other words, the absolute spirit unfolded as the whole of manifest existence.

There was a certain purpose in this objectification of the spirit, namely, to rediscover itself in the sense of its coming to self-consciousness in and through man. This teleological activity rendered absolute necessity to all finite forms of existence. In particular, it provided in this way the phenomenal world with a necessity to exist, which was evidently lacking in Kant's "whole".

However, necessity concerned here is not only the phenomenal structure of the world, but also all forms of existence extended in space and time. All finite forms were necessary "moments" of actualization of this immense process which dialectically progressed towards self-realization of the absolute spirit⁵

There was evidently a danger in this kind of "the whole". It was too total, there was no room for sin here. Whatever happened was regarded as a necessary "moment" of the universal order. Disharmony, conflict, confusion, violence and war, were all necessary aspects of the absolute harmony. Hegel's philosophy was in fact misused by some fascist "philosophers", and may have played its part in bringing about the historical series of disasters that have followed since.

The other issue was that, concerning Hegel's "whole", the "original information" (enfolded in the absolute spirit) was regarded not to be different from the actual world. After the spirit's self-actualization, which Hegel supposed had already been accomplished, knowing became equivalent with being. It may well

be so in some subtle sense, but looking superficially at the issue, one might suppose that there was a certain kind of excess concerning this kind of “the whole”. If a map is not different from the territory, one of these two things might appear rather unnecessary.

To be precise, the very source of the manifest order was the spirit’s striving towards self-realization, and in this way the manifest order could be understood as the absolutely necessary order. But it ought to be easily overlooked, or regarded as not very important. Therefore we should not be surprised that it actually was overlooked, or perhaps ignored, and subsequently Marx came out with the next “corrected” version of “the whole”.

In Marx’s “whole” the absolute spirit was taken away, and dialectic was replaced with dialectical materialism. Strangely enough even without the absolute spirit dialectical order remained in power over the manifest world. As we know, Marx’s “whole” got eventually actualized in the form of totalitarian social structures, bringing about the next series of divisions between groups of people and nations, with all the attendant conflict and destruction.

The Nature of the Challenge

The above discussion concerns only a small, though representative fragment of the human activity of dealing with misinformation. The basic pattern of this activity is, as could be seen, that one set of limited meanings which are taken to be unlimited, is replaced with another set of limited meanings with the same necessity attached to them. In consequence,

by trying to clear up one kind of misinformation, the very same thing is done again, that is another structure of misinformation is introduced. In this way, misinformation multiplies because new “necessary” meanings are superimposed on the old ones, making the structure of confusion more and more entangled. It is not surprising that the present state of the individual and society is the state of thoroughgoing fragmentation, being basically the result of these contradictory attempts *to clear up misinformation by creating more of it*. Insofar as the past meanings have been somatically actualized, they brought about the present form of social structures (including divisions into nations, religions, etc.), and the structure of our material environment. However, what is even more important is that these meanings became inbuilt into the content of our consciousness, being absorbed, as noted earlier, by each of us through education, tradition, culture, etc. In this way, misinformation of the past is active *now*, informing both the outward order of human life and inward order of consciousness. This order of consciousness, with all the conflict and destruction which it implies, seems to be the challenge that faces human beings at present.

As we pointed out, it is not a new situation, but its present display appears to have reached a critical point. It is almost evident that the historical pattern of trying to deal with misinformation cannot be repeated. Furthermore, contemporary approaches do not offer any solution either.

Science cannot help. It seems that in its striving to get more and more results, it has lost

the capability of understanding not only its own results, but also, why it is doing what it is doing.

Philosophy cannot help. Modern philosophers work with details of small questions which they manage to accept as having sense within a limited framework. However, they cannot decide whether the framework makes sense. The statement that the world is collapsing is regarded as too general to make sense. Old religions have lost their meaning (if they ever had any) and fight with each other out of a long tradition. New religions enter the same old pattern with a fresh hope.

Thought-cannot help, being basically part of the activity of accumulated meanings, nor can feelings, will, desires, beliefs, intentions, and plans, which are dominated by the same old meanings

Then. There are contemporary political attempts to bring about harmony. The only thing which distinguishes these attempts from past attempts, is that somehow on the way to protecting some basic meanings, human beings have managed to produce an amount of nuclear weapons capable of annihilating the life of the planet many times. Consequently, the first of these nuclear-based attempts is bound to be the last. This makes it more or less clear that the historical pattern cannot be repeated, unless we do not care about surviving as the human species, or about the life of the planet in general.

To put the whole matter simply, the present challenge cannot be met in terms of the actual order of the mind's activity. The issue is whether this order is the only possible order

of the mind's operation. In other words, is this order necessary in the sense of being built into us, so that we cannot do otherwise than to program ourselves in this ultimately destructive way?

Of course, if that is the case, there is no way out. But on the other hand, this would imply a rather strange state of affairs. It would force us to state, taking into account all that has been said thus far about nature, that except for man-made machines, the only mechanical order in nature is the order of consciousness. This would be an exact reversing of the Cartesian view. However, it may well be so, insofar as the present order of consciousness is, as well, man-made, and insofar as we assume that there is no way out.

Another way of looking is not to assume anything about the question. Yet the point is to see that to meet the challenge in a relevant way, means no less than to transform the order of consciousness. Whether there is actually such a possibility is another matter, but the urgency to consider it is evident.

In a sense, Bohm's view is a step in the direction of talking more seriously this possibility. The transformation of consciousness is far more compatible with his view than, for example, with Descartes' view of the universe. Though we should not take Bohm's view as the next set of "necessary meanings" (nor does he ever propose that it be taken this way), we may consider how his position maps the situation.

What is There to be Healed?

Bohm notes that humanity "has three princi-

pal kinds of dimensions the individual, the social, and the cosmic and each of these must receive its appropriate attention'.⁶ The cosmic dimension he explains,

. . . is concerned with human relationship to the whole, to the totality of *what is*. From the earliest times it has been considered crucial, for the overall order of the individual and society, that a harmonious relationship be established with this whole. Indeed it was commonly believed that such a relationship would serve to prevent or dissolve the various sorts of difficulties . . . in connection with destructive "misinformation" and with the tacit infrastructure of consciousness.⁷

Furthermore, an actual contact with the whole was thought to give the ultimate significance to human life in that it would enable man to see how his life fits into the universal context of all that is.

Human beings have always been trying to establish this contact. It is difficult to say how it got started, but since nothing has fundamentally changed since the beginning, we may well see the basic pattern of these attempts in the historical examples already discussed.

Thus, as we noted, an idea of the whole is introduced and articulated more or less explicitly. What eventually takes place a little later, is a sort of collapse of its credibility. That is, the limitation of the "original meanings" manifests as a failure of these meanings to produce an expected universal harmony. It is generally felt that "the whole" is not exactly what it was supposed to be. Consequently, it gives rise to attempts aimed at making "the whole" better

and more credible. The very concept of introducing "the whole" has not been questioned. What was questioned was its quality. Therefore the subsequent attempts concerned themselves only with improving the quality of "the whole".

As could be seen, this has taken various forms, like changing the content of "the whole" through, for example, adding or taking away the absolute spirit, extending the content by adding to it more knowledge in order to make it more universal, improving the means to make it more certain, etc.⁸ Although the content of "the whole" changed in this way, the basic principle remained the same, namely an absolute necessity attached to whatever would be its content.

To use Bohm's terms, by introducing "the whole", a certain information content enters the formative level of the mind's order. This content then determines the structure of the signa-somatic and soma-significant activity. Absolute necessity attached to the content turns this structure into a kind of self-enclosed trap. That is, one's whole activity consists in carrying out the somatic consequences of the meanings which make up the content, and in assimilating whatever is perceived in terms of these meanings.

What is the way out of the structure which is set up by a not quite viable set of meanings? As traditionally pursued, it is by means of setting up another structure. That is, by means of superimposing a new order on the old order of the mind.

Such an approach is evidently quite a relevant approach dealing with the material environ-

ment, where things can be improved by fitting them into a better kind of designed order. The question is whether this mechanistic approach can be extended into the realm of mind or meaning. We should also ask whether such an extension is not based on the same principle which is behind the failure of the original structure, namely applying meanings beyond the limits of their relevance. This clearly seems to be the case, and thus the traditional way of healing disharmony is in fact the very means of sustaining and perpetuating the confusion which it is supposed to heal. We may ask what has actually been accomplished in this whole endeavor of trying to heal disharmony, which has continued throughout the ages, or perhaps millennia of human existence? It seems that nothing special has been done, or rather, *nothing at all with regard to the very aim*. There are some byproducts of this activity, like the development of science and technology. But it is clear that the use of these byproducts is ultimately informed by whatever constitutes the basic meanings of mankind.

There is, however, one quite remarkable result of all this endeavor. This is the present somatic set-up of the brain, its basic pattern of activity, engraved into the brain cells through thousands of years of repetitive activity. The challenge to change the mind's order of activity involves, therefore, disentanglement of this somatic set-up of the brain.

The question arises whether this is possible. What seems to be implied by Bohm's view is that this somatic structure, like any other somatic structure, is not an independent form

of "substance", but rather it is a form of "subsistence". That is, *its apparent substantial nature is due to a constant activity of more subtle levels of meaning*. A change in these meanings would be therefore a change in the order of this somatic structure.

As has been noted in my previous paper, the overall structure of meaning is capable of unlimited extension. For the mind this implies that it may go beyond any level of meaning. That is, whatever structure of meanings constitutes the content of consciousness, the meaning of these meanings can be perceived. But such a perception is already a change in these meanings in the sense that it makes it possible to see whether they make sense.

Such a capability of going beyond any level of meaning has been called "intelligence". We may thus say that intelligence is the activity which is able to change the meanings, and therefore to affect the somatic set-up of the brain that is sustained by these meanings. This would entail a new order of the mind's activity in the sense that if this kind of perception takes place, the mind ceases to be dominated by the meanings in which its activity is entrapped. In other words, *the mind would enter another order which is informed by free, creative perception, or intelligence*.

What has been said here implies something different from replacing destructive meanings with some kind of "correct" meanings, which obviously be nothing new. Rather, the concern is a total shift at *the core* of the mind's order of activity, from the existing pattern of programming and reprogramming itself, to the order guided by intelligence. For that to

take place, perception has to be very profound indeed, so as to reach the generative source of the pattern. As Krishnamurti used to say, there has to be a *total* insight which can make it possible to see the very essence of the pattern, that is, its basic structure and origin. Such an insight seems to be the necessary step for the mind if it is to enter another order of activity. To put it differently, what is to be healed is not this or that set of confusions, but *the very way of healing* as it has been pursued from the beginning of mankind up to the present. Taking into account all of what the traditional way of healing entails, we may suppose that the notion of healing the mind by modification of its accumulated content is altogether misdirected. It may be said that by entering this pattern of activity, mankind has taken a “wrong turn,” as Krishnamurti and Bohm call it,⁹ which however, as they say, can be diverted through insight into its very origin. That would imply that the order of the human mind, as it is now, is not necessary, nor is it inevitable for human beings to go on with the “wrong turn.” In other words, the thought-created order of the human mind does not seem to be its only possible order. We may suppose that the mind that ceases to be dominated by accumulated meanings would be capable of free, creative perception. If it is not caught again at some stage -- that is, if perception is sustained — there seems to be no limit to its activity of going beyond any level of meaning. There is nothing fixed about such a mind, nor is its order limited in any arbitrary way. And that is already different from being bound by the necessity inher-

ent in the accumulated meanings, which is what the present activity of the mind is all about.

As was pointed out in my previous paper, the possibility of going into the meaning of meanings is inseparable from the whole signa-somatic and soma-significant activity. That is to say, it is not limited to any particular context, but is a key feature of the ordering and forming activity of the whole. That seems to imply that the order of the mind which is capable of sustained and intelligent perception is basically not different from the order of this whole signa-somatic and soma-significant movement. In other words, it is not different from the order of the universe.

All this suggests that it is possible for the human mind to participate in the universal order. One may suppose that if this possibility were actualized, the need to impose any additional, thought-created order on the mind would cease to exist. This means that the present structure of human consciousness would cease to exist, along with all the confusion and conflict that it entails.

A Step in a New Direction

One has to note that there is a traditional danger here of taking this whole discussed map as a description of “how things really are,” which is again an attempt to order the mind starting, as it were, from the wrong end. This, however, does not deny that the map can be viable up to a point. What we need to emphasize is that a rigid commitment to any map entails the notion of absolute necessity, and

that is bound sooner or later to bring about the same kind of confusion which was supposed to be cleared up by the map. This is an important point, since that is what usually seems to take place in human approaches to the issue of healing disharmony.

As we noted earlier, there are religious approaches which try to heal the situation by providing a view of the cosmic order, with all the rewards and punishments involved that are supposed to make human beings conform to this order. There are also philosophical approaches which, even if they do not involve rewards and punishments, nevertheless try to show that it is a logical necessity to accept a given view of the universal order. Both of these approaches are similar in that they aim at a modification of the accumulated meanings in the way which would make the activity flowing out of them more harmonious. The problem, however, is that none of these approaches have produced the expected harmony in human life. On the contrary; absolute commitment to different notions of the universal order has resulted in the proliferation of further fragmentation and conflict.

These approaches do not exhaust human attempts to deal with the situation. There is also another, more radical tradition. What it proposes is that instead of modifying the content of accumulated meanings, we should get rid of them altogether, because it is just these meanings that are regarded as the source of disharmony.

There are two main lines of this tradition. The one associated with Vedanta maintains that there is ultimately something ordered and

permanent in human beings, which is not different from the very essence of the universe. If it could only be uncovered, by getting rid of all the unnecessary accumulation of meanings, the human mind would become one with the cosmic order. Another line, namely Buddhism, goes a step farther. It claims that even this notion of something ordered and permanent in man, which is supposed to be covered up by misinformation, has to be taken away, because it is still a part of misinformation.

Although these approaches are not explicitly attached to any particular notion of the ultimate order whose nature, they say, cannot be articulated, they are evidently attached to their advocated ways of getting rid of all the superimposed orders. And so, they do not bring about much more harmony than the other approaches. Their commitment to different ways of thing to heal the situation entails the same notion of absolute necessity which entraps groups of people within a host of incompatible concepts, giving rise in this way to the same proliferation of divisions and conflicts.

Perhaps the kind of perception around which the formalized attempts to heal disharmony was built was not always bound by the accumulated meanings. For example, a few individuals whom religious traditions regard as their originators are reputed to have had quite different mode of perception from that of the ordinary mind. If that were an actual fact, we may suppose that in some cases perception might well have been free and creative.

If there were indeed such individuals their value

for the rest of humanity would be considerable if only an actual communication could be established with them. That is, if their perception could be shared, i.e., actualized as common for human beings. The question is, however, whether free, creative perception can be communicated, and what it would mean. Evidently, it is not a matter of conveying an idea or description which then becomes a part of the accumulated meanings.

Suppose that there is a perception that the overall order of consciousness does not make sense. Such a perception is strongly resisted by the self-defensive activity of the accumulated meanings. Usually this resistance takes the form of either ignoring whatever is pointed out as entirely irrelevant, which is the end of communication, or turning it into a belief, that is, into a fixed meaning superimposed on all the other meanings which make up consciousness, which is another form of escaping communication. In this way, communication is not only cut off, but the possibility of learning is denied, since absolute commitment to any belief holds the mind entrapped within a limited pattern.

How then can communication take place? Krishnamurti, for example, says that it is necessary to listen. However, the kind of listening he is referring to is not a case of accepting or rejecting whatever one hears according to whether it fits or does not fit one's idiosyncrasy. What seems to be implied is that the kind of listening which is called for is already a form of free perception in that it is not bound by the necessity inherent in the listener's idiosyncrasy. This means that it is already a change

in how the mind works, and that may eventually open the way to a more fundamental transformation of the mind's overall order of activity.

But suppose that there are no such individuals around, which quite generally appears to be the case. Then all that is left seems to be that we have to listen to each other. In fact, the very listening may be more important than the actual presence of an individual who apparently is no longer bound by the accumulated meanings. If there is no listening, whether such an individual is present or absent makes no difference. This presence may have a profound significance in some other sense, but considering the nature of the present challenge, something else seems to have a priority, since not so much time is left. Whatever potential of the mind would be represented by such an individual, there is a very small chance of its general actualization, if the rest of humanity remain as they are.

One may ask how the notion of listening to each other can be at all relevant in the situation when we all seem to be dominated by the same meanings. A significant insight into this question is given by Bohm's proposal to explore and experiment with what he calls "dialogue."

The term dialogue is derived from a Greek word, with *dia* meaning "through" and *logos* signifying "the word." Here "the word" does not refer to mere sounds but to their meaning. So dialogue can be considered as a free flow of meaning between people in communication, in the sense of a stream that flows between banks.¹⁰

As he emphasizes, dialogue is something different from an ordinary conversation or discussion where people argue from their fixed positions, and that leads either to confrontation or to agreement, if whatever may present a threat to any of the positions is not avoided altogether. In other words, an ordinary discussion does not lead beyond the meanings which constitute the participants' collective idiosyncrasy. It is thus seriously limited by the form of the "banks" represented by the various points of view of the participants.

What Bohm seems to suggest, using the metaphor of the stream, is that the flow of meaning involves both the stream and its banks. That is, a free flow is primary, and it is actualized as a constant two-way activity of the stream shaping the banks and the banks shaping the stream.

In dialogue it is necessary that people be able to face their disagreements without confrontations and be willing to explore points of view to which they do not personally subscribe. If they are able to engage in such a dialogue without evasion or anger, they will find that no fixed position is so important that it is worth holding at the expense of destroying the dialogue itself.¹¹

For that to be possible —

What is essential is that each participant is, as it were, suspending his or her point of view, while also holding other points of view in a suspended form and giving full attention to what they mean . . . Such a thoroughgoing suspension of tacit individual and cultural infrastructures, in

the context of full attention to their contents, frees the mind to move in new ways. . . The mind is then able to respond to creative new perceptions going beyond the particular points of view that have been suspended.¹²

It should be emphasized that what needs to be suspended in this way is the self-defensive activity of each participant's idiosyncrasy which prevents listening. If that takes place, the mind's activity ceases to be dominated by the accumulated content of meanings, and in this sense we may say that the mind begins to move in a new way.

Basically this is what is called for in the case of each individual: to be able to give attention to one's accumulated meanings, while suspending the necessity of carrying out their activity. This is what is required, if the mind is ever to be free of its self-created program. The content of dialogue provides, as it were, better conditions for that to take place. In a group of people with various backgrounds, it is easy to see that the commitment of others with all the destructive consequences involved is not different from one's own commitment, and that the absolute necessity inherent in all these commitments is in fact of a relative nature. In this way, the notion of "being right" loses its importance which in turn opens the way to the possibility of a creative response to the whole dialogue situation.

What is particularly important however is that by giving full attention to one's own and others' content of accumulation, suspending at the same time its activity, one's particular content ceases to be different from the collective

content of the group. In other words, one can see that what is going on in the group is a manifest display of the activity of one's own mind. This provides the participants with the possibility of learning about the "individual mind" as it is reflected in the "group mind" and vice versa. This movement of learning may lead to creative perception of a new meaning, which in the dialogue-context of no separation between the individual and collective mind would be a common meaning for all the participants.

Thus one aspect of the significance of dialogue is the creation of a new, common meaning shared by the whole group. As Bohm says, this may be called "microculture", insofar as "... in essence culture is meaning as shared in society." And here "meaning" is not only *significance* but also *intention*, *purpose*, and *value*.¹³

However, as was suggested, precondition of this creation of a common meaning is that the rigid socio-cultural commitments of the participants are dissolved. This brings out another significant aspect of such a creative dialogue. As was noted earlier, idiosyncrasy is a particular outcome of the general accumulation of meanings. In other words, the content of one's consciousness, that is, one's misinformation, commitments, ideas, etc., have their ultimate source in the general socio-cultural accumulation. Therefore dissolution of this general accumulation seems to be the necessary step in clearing up one's individual misinformation. Besides, it is evident that misinformation in the socio-cultural context is most destructive in its consequences.

Although it is very valuable to create a common meaning, it does not seem to be the ultimate end of dialogue. When both socio-cultural and individual misinformation is cleared up, it is only the beginning of a new order of the mind's activity. Then the mind participating in dialogue is actually participating in a creative movement of unfolding ever more subtle and new meanings, and as was suggested, there are no barriers to this movement. It might be that participation in this movement is the actual contact with the whole that human beings have always been seeking to establish.

Notes and References

1. Griffor, A., "Mind and its Wholeness," *The Search for Meaning*, The Aquarian Press, 1989: p. 178.
2. See, for example, Bohm, D., *Unfolding Meaning*, ed. D. Factor, Foundation House Publications, Mickleton House, 1985: p. 82.
3. Bohm, D., "Insight, Knowledge, Science and Human Values", *Teacher's College Records* 82, 380-402 p. 54.
4. Bohm, D., & Peat, F.D., *Science Order And Creativity*, Bantam, 1987: p. 238-9.
5. "It should be clear that by "misinformation" is meant a form of *generative information* that is inappropriate, rather than simply incorrect statements of fact. In a similar way a small "mistake" in DNA can have disastrous consequences because it forms part of the generative order of the organism and may set the whole process in the wrong direction." (ibid.: p. 237).

6. Hegel's extension of Kant's structure is in some respects similar to the extension of the quantum particle theory to the quantum field theory (as discussed in my previous paper). That is, manifest forms and the structure of their activity are regarded by Hegel as phases (i.e., moments) of the overall (dialectical) movement whose structure is "informed" by the information content of the absolute spirit (i.e., by what he calls "logos")
7. *ibid.*: p. 248.
8. *ibid.*: p. 251.
9. It is interesting to note that the concept of trying to make "the whole" more certain may have to do with what Heidegger points to as a change in the meaning of the notion of "truth" which took place over the ages.

That is, from the ancient notion of "aletheia" as unhiddenness or unconcealment, through the Medieval notion of "revealedness", to the modern notion of "certitude". Evidently, this requirement to guarantee the correctness of the idea of the whole by logical means is quite a modern one. The more ancient method of making the idea of the whole convincing, which we can see, for example, in the Old Testament, is for the most part violence, and occasionally, miracles.

10. See D.Bohm, & J.Krishnamurti, *The Ending of Time*, Victor Gollancz, London, 1985.
11. Bohm & Peat, *op. cit.*: p.241.
12. *ibid.*: p. 242.
13. *ibid.*: p. 243.
14. *ibid.*: p. 354.



A Closing Note

Pierre Noyes

When I learned today (November 14, 1997) that the ANPA West conference will not take place this year, it occurred to me that the paper enclosed with this issue as an Appendix might be of sufficient historical interest to reprint on this sad occasion. Since the date is 1970 and the title is "*The Terrestrial Revolution and the Necessity for Radical Social Change*", the connection to the Alternative Natural Philosophy Association, founded in 1979, requires a word of explanation.

Briefly, it was the political radicalization of the late 60's which allowed me to adopt new ways of thinking and in turn allowed me to be open to listening to Ted Bastin's seminar on the Combinatorial Hierarchy at Stanford in 1972. How that in turn led, eventually, to the founding of ANPA has been described in Section 1, "*Pre-ANPA Ideas: A personal memoir*" of my paper "*A Short Introduction to Bit-string Physics*" published in Proc. ANPA 18 (*Mereologies*, T.L.Etter, ed, ANPA, July, 1997).

The radicalization took root in me thanks to my taking a sabbatical at the Center for

Advanced Study in the Behavioral Sciences and attempting to put together my vague ideas on how to formulate a scientific world view adequate for the contemporary age. What struck me then was the way men's and women's ways of living on this planet were making inevitable an integration of all activities on the global surface in a manner that clearly has no evolutionary precedent during the entire 4 1/2 billion years our planet has existed. I called this process "The Terrestrial Revolution". The political component became critical because of what was going on at Stanford and at other campuses, and more abstractly because of the obvious inadequacy of current human institutions to deal with a crisis of this magnitude. It gained the temporary focus represented in this paper by my becoming acquainted with then contemporary movements for "non-violent revolution". The occasion was a conference organized by the Quaker Service on "Violence and Non-Violence as Methods of Social Change". Hence the enclosed paper. I hope you will find it of interest.

Alternative Natural Philosophy Association

Statement of Purpose

1. The primary purpose of the Association is to consider coherent models based on a minimal number of assumptions to bring together areas of thought and experience within a natural philosophy that is alternative to the prevailing scientific attitude. The combinatorial hierarchy, as such a model, will form an initial focus of our discussion.
2. This purpose will be pursued by research, conferences, publications, and any other appropriate means including the foundation of subsidiary organizations and the support of individuals and groups with the same objective.
3. The association will remain open to new ideas and modes of action - however suggested - which might serve the primary purpose.
4. The Association will seek ways to use its knowledge and facilities for the benefit of humanity and will try to prevent such knowledge and facilities being used to the detriment of humanity.

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