DynaPsych Contents

Soma- Significance: A New Notion of the Relationship Between the Physical and the Mental

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Note: The pictures for this paper have not yet been converted to electronic format -- Editor

The relationship between the physical and the mental has been widely considered under the term "psychosomatic." Here, "psyche" comes from the Greek word, meaning mind or soul and soma means the body . If we generalize soma to mean the physical, the customary usage of the term psychosomatic suggests two different kinds of entities, each separately existent, but with both in mutual interaction. In my view, such a notion introduces a split or fragmentation between the physical and the mental that does not properly correspond to the actual state of affairs. Instead, I wish to suggest the introduction of a new term soma- significance, to emphasize the unity of soma with significance (and ultimately with meaning, in all its implications and possibilities).

In this approach, meaning is being given a key role. However, any attempt at this point to define what is the meaning of meaning would evidently presuppose that we already know at least something of what meaning is, even if perhaps only non- verbally and subliminally. So we shall not attempt to begin with an explicit definition of meaning but rather, we shall as it were, unfold the meaning of meaning as we go along (taking for granted that everyone has some intuitive sense of what meaning is).

The notion of soma- significance implies that soma (or the physical) and its significance (which is mental) are not separate in the sense that soma and psyche are generally considered to be; rather they are two aspects of one overall indivisible reality. By such an aspect, we mean a kind of view or a way of looking. That is to say, it is a form in which the whole of reality appears (i.e., displays or unfolds), either in our perception or in our thinking. Clearly, each aspect reflects and implies the other (so that the other shows in it). Although we describe these aspects by using different words, we imply that they are both revealing the one unbroken whole of reality, as it were from different sides (rather as two different two- dimensional views of an object may reveal the single whole object as it is in three dimensions).

As an example of this relationship one can obtain a good illustration in physics for the ultimate unbroken wholeness underlying aspects, that are nevertheless distinguished, by contrasting the relationship of electrical poles (charges) and magnetic poles. Electrical charges are regarded as separately existent, each being attached, for example, to a particle that is at a distinct location in space. On the other hand, magnetic poles have no such separate existence but rather, are merely distinctions introduced into our thought for the sake of discussing what is basically one whole and unbroken magnetic field. For example, let us consider a bar magnet along with its field, with a north pole at one end and a south pole at the other, as shown in Fig. l.

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If this magnet is broken at an arbitrary point, a further pair of north and south poles appear, as shown in Fig. 2.

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Indeed, even before the magnet is broken, we may, as shown in Fig. 3, abstractly regard the plane of the cut as a superposition of north and south poles that cancel each other (so that when the bar is broken at this plane, the

north and south poles come apart and cease to superpose).

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If we further consider two such planes at arbitrary locations (as shown in Fig. 4),

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then the field in the region between the planes may be regarded as going from the north pole of one of them to the south pole of the other.

With the aid of the concept of opposing pairs of magnetic poles, we can clearly contribute in a significant way to our expression and understanding of basic relationships in the overall magnetic field. We are proposing to look at soma and significance in a similar way. That is to say, we regard them as two aspects introduced at an arbitrary conceptual cut in the flow of the field of reality as a whole. These aspects are distinguished only in thought, but this distinction helps us to express and understand the whole flow of reality.

To bring out how soma and significance are related, we first note that each particular kind of significance is carried by some somatic order, arrangement, connection, and organization of distinguishable elements. For example, the printed marks on this piece of paper carry a meaning, which is apprehended by the reader. In a television set, the movement of electrical signals, communicated to an electron beam, carries a meaning to the viewer. Modern scientific studies strongly indicate that such meanings are carried somatically by further physical, chemical, and electrical processes into the brain and the rest of the nervous system, where they are apprehended at higher and higher intellectual and emotional levels of meaning.

As this process takes place these meanings, along with their somatic concomitants, become ever more subtle. The world subtle is derived from the Latin sub- texere , signifying `woven from underneath , finely woven . The meaning is rarefied, delicate, highly refined, elusive, indefinable, intangible . The subtle may be contrasted with the manifest (which latter means literally what can be held in the hand). The next proposal is then that reality has two further key aspects, the subtle and the manifest, which are closely related to soma and significance. Thus, as has already been pointed out, each somatic form (such as a printed page) carries a meaning. This meaning is clearly more subtle than the form itself. But in turn, such a meaning can be grasped in yet another somatic form; electrical - chemical and other activity in the brain and the rest of the nervous system - which is evidently more subtle then the original somatic form that gave rise to it. This distinction of subtle and manifest is clearly only relative, since what is manifest in one level may be subtle on another.

A simple example may be given in terms of a television signal. The manifest object is picked up in the camera and transformed into a much more subtle set of electrical signals, which are in turn carried in a yet more subtle radio wave. Eventually, the wave is picked up by an antenna, to give rise to electrical signals again. These in turn go through the receiver, to come out as a manifest television image. Clearly, in this whole process, a certain content is constantly being transformed toward more subtle levels, and eventually back towards more manifest levels.

This sort of action may in principle go on to indefinitely deep and subtle levels of significance. For example, in physics, reflection on the meanings of a wide range of experimental facts and theoretical problems and paradoxes eventually led Einstein to new insights concerning the meaning of space, time and matter, which are at the foundation of the theory of relativity. Meanings are thus seen to be capable of being organized into ever more subtle and comprehensive overall structures that imply, contain, and enfold each other, in ways that are capable of indefinite extension.

In this whole process, we will, as has been seen, find that a certain content is first met in a given level and later in a different level. The relationship between these levels is then seen to be part of the essential content of yet another level. This structure continues indefinitely. And so, it is clear that no ultimate reduction is possible, in which any level of subtlety could be contained completely in another. As the level under consideration changes, the particular content of what is somatic (or manifest) and what is significant (or subtle) therefore has also to be

changing. For example, as shown below, a level that is mainly somatic (l) may have a significance (l), which is carried into the next more subtle level of soma(2), which has a further significance (2).

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Evidently, this may go on to yet higher levels. Nevertheless, it is clear that it is necessary for both somatic and significant poles to be present in each concrete instance of experience. It would be impossible, for example, to have all the content on the side of soma (or on that of significance).

We have thus far emphasized the significance of soma, i.e. that each somatic configuration has a meaning, and that it is such meaning that is grasped at more subtle levels of soma. This may be called the soma- significant relationship.

We now call attention to the inverse signa- somatic relationship. This is the other side of the same process, in which every meaning at a given level is seen actively to affect the soma at a more manifest level. The signa-somatic relationship is to be distinguished from the psychosomatic in that the latter is, as has already been pointed out, commonly regarded as between separate entities or substances. On the other hand, the former is, as has been mentioned earlier, between abstracted aspects or poles of one whole flow in a field. Each aspect (or pole) gives merely one side or the other of the flow. And here it is to be emphasized again that these aspects are only terms introduced into thought for the sake of expressing relationships in the flow, and are in no sense separately existent.

Consider, for example, a shadow seen in a dark night. If this signifies an assailant, to the person who sees it, then this meaning directly affects the soma of his body without having to be apprehended by a distinct psyche. In the previous examples, the conceptual cut into soma and significant poles was first introduced outside the human being. Here, we are beginning by introducing this cut inside him. The adrenalin will flow, the heart will beat faster, the blood pressure will rise, and he will be ready to fight, to run, or to freeze. If, however, it means to him a shadow , the somatic response is of course very different. It is clear that quite generally, the total physical response of a human being is both profoundly and directly affected by what physical and psychological forms mean to him. This meaning will vary, according to one's abilities, background of knowledge, conditioning, etc. Thus, if one suddenly finds something unexpectedly, it may mean a material object - with a certain somatic response, or a precious jewel with a much greater somatic response. If one later discovers that the jewel is only synthetic, the somatic response will decrease again, in accordance with this new meaning, even though the physical appearance is still the same as ever. Similarly, the content of a given page may mean ink on paper , or a message of great importance, with all its attendant signa- somatic activity.

Thus far, we have discussed only what may be called a normal or "healthy process of soma- signif icance. A similar approach may be made for diseases and disorders in the soma- significant flow. For example, normally a fast heartbeat is associated with the meaning of danger. But it can also mean physical damage to the heart. If a person takes it to mean this, the sense of danger is increased, and the heart beats still faster. This starts a runaway loop, in which the significance of the soma feeds back signa somatically, to change the soma in such a way as to increase the significance yet more. Somatic damage to the heart could ultimately result from this. It is evident that this typical form of a runaway feedback loop between the soma- signif icant and the signa- somatic is deeply involved in a wide range of neurotic disorders.

As a given meaning is carried into the somatic side in the ways described above, whether in healthy or in disordered processes, one can see that it still continues to be a kind of development of the original significance. For example, if something means danger, then not only adrenalin but a whole range of hormones will travel through the blood. According to modern scientific discoveries, these act like messengers (i.e. , carriers of meaning) from the brain to various parts of the nervous system or the rest of the body and around. In addition, there are the electrical signals carried by the nerves, which have a similar function. One can regard this whole process as a further unfoldment of the original significance into forms that are suitable for instructing the body to carry out the implications of what is meant.

From each level of somatic unfoldment of meaning, there is then a further movement leading to activity on to a yet more manifestly somatic level, until the action finally emerges as a physical movement of the body that affects the environment. So one can say that there is a two- way movement of energy, in which each level of significance acts on the next more manifestly somatic level and so on, while perception carries the meaning of the action back in the other direction. A particular pair of links in this chain is illustrated in Fig. 5.

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We emphasize here that nothing exists in this process of soma- significance, except as a two- vay movement between the aspects of soma and significance, as well as between levels that are relatively subtle and those that are relatively manifest. It is this over- all structure of meaning (a part of which appears in the diagram) that is grasped in every experience. A simple example is a pain reflex, as shown below.

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A pain stimulus is received by nerve coding. The sensory neurons carry the meaning in the form of an electro-chemical impulse. This is read in the brain as a sensation of pain, and this meaning acts signa- somatically through the motor neuron to lead to the contraction of the muscle, or to the activation of an appropriate gland.

In the higher integrative levels, a vast totality of sub- meanings comes together, as a perception of the meanings of whole sets of lower level meanings. And out of this eventually emerges liberation of hormones, arousal of emotions, and initiation of muscular action. All of this takes place in an unbroken flow of soma- significant and signa- somatic process.

One can see that ultimately the soma- significant and signa- somatic process extends even into the environment. Thus, meaning may be conveyed from one person to another and back through sound waves, through gestures carried by light, through books and newspapers, through telephone, radio, television, etc., linking up the whole of society in one vast web of some- significant and signa- somatic activity. And similarly, even simple physical action may be said to communicate motion and form to inanimate objects. Most of the material environment in which we live (houses, cities, factories, farms, highways, etc.) can thus be described as the somatic result of the ever- changing meaning that material objects have had for human beings over the ages. Going on from here, even relationships with Nature and with the Cosmos are evidently deeply affected by what these mean to us. In turn, such meanings fundamentally affect our actions towards them, and thus indirectly their actions back on us are influenced in a similar way. Indeed, insofar as we know it, are aware of it, and can act in it, the whole of Nature, including our civilization which has evolved from Nature and is still a part of Nature, is one movement that is both soma- significant and signa- somatic.

Some of the simpler kinds of soma- significant and signa- somatic activity are, as we have indeed already indicated in one of our examples, just reflexes that are built into the nervous system, or else, they may be instincts that express the accumulated experience of the species. But these comparatively simple reactions go on to ever finer and more variable responses. Even the behaviour of creatures as simple as bees can be seen to be thus organized in a very subtle way by a kind of meaning (in this case, through a dance indicating direction and distance of sources of nectar). With the higher animals, the sort of operation of meaning is much more evident. Gradually, through evolution, there has been a development of conscious awareness, and in man it is quite evident that meaning is most central and vital for such conscious awareness.

It is in these higher levels that soma- significant and signa- somatic activity show up most directly, in the fact that the word meaning indicates not only the significance of something to us, but also, our intention* toward it. Thus I mean to do something signifies I intend to do it. This double meaning of the word "meaning is not just an accident of our language, but rather, it implicitly contains an important insight into the over- all structure of meaning.

To bring this out, we first note that an intention generally arises out of a previous perception of meaning or significance of a certain total situation. This gives all the relevant possibilities and implies reasons for choosing which of these is better. As a simple example, one may consider the various foods that one may eat. The actual

choice may be made according to like or dislike, or it may depend also on the meaning of the knowledge that one has about the nutrient qualities of the food. More generally, such a choice, whether to act or not to act, may depend on the

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* A special case of intention is motive. A motive may be based on an emotional reaction, such as fear or pride, along with a fixed intellectual content that determines the meaning of this reaction. An intention may go much further, and even arise out of creative intelligence.

totality of significance at that moment*. The source of all this activity includes not only perception and abstract or explicit knowledge, but also what Polyani called tacit knowledge; i.e. knowledge containing concrete skills and reactions that are not specifiable in language (as for example is demonstrated in riding a bicycle). Ultimately, it is this whole significance that gives rise to the over- all intention, which we sense as a feeling of being ready to respond in a certain way. For example, when we see a situation meaning The door is open , an intention to walk through the doorway may be formed, if all the other subtle constituents of the total meaning show this to be possible or necessary or otherwise desirable. But if the meaning is The door is closed , this intention is not formed. We emphasize again, as is clear from this example, that each determination of intention must arise out of all the factors in any given total situation that we apprehend to be significant (or relevant). Some of these may be external and some internal to us. But in the process of somasignificance it is not possible to form and sustain intentions that do not grow out of this totality of significance.

It must be kept in mind, however, that most of the meaning in this process is implicit. Indeed, whatever we say or do, we cannot possibly describe in detail more than a very small part of the total significance that we may sense at any given moment. Moreover, when such significance gives rise to an intention, it too will be almost entirely implicit, at least at the beginning. For example, implicit in one's present intention to write or speak is a whole succession of words, that one does not know in detail until one has actually spoken or written them. Moreover, in speaking or writing, these words are not chosen one by one. Rather, many words seem to be enfolded in any given momentary intention, and these emerge in a natural order, which is also enfolded.

Meaning and intention are thus seen to be inseparably related, as two sides or aspects of one activity. In actuality, they have no distinct existence, but for the sake of description, we distinguish them (as we have done with soma and significance, and with the subtle and the manifest). Meaning unfolds into intention, and intention into action, which however, has significance, so that there is in general a circular loop of flow.

Intentions are commonly thought to be conscious and deliberate. In fact, one's ability consciously to choose or to determine his intentions is very limited. For the deeper intentions (including the intention to determine one's intentions) generally arise out of the total significance, in ways of which one is not aware, and over which one has no control. So, in fact, one does not usually know just what his intentions are. One discovers this by reflectively observing one's own actions. These, in fact, often contain what are felt to be unintended consequences. For example, one may offend another person unintentionally and this will lead one to say I didn't mean to do that . In action, what is actually implicit in what one means is thus revealed more fully.

However, to learn the full meaning of our intentions in this way can be very costly and destructive. What we can do instead is to display the intention along with its expected consequences, through the imagination and in other ways (e.g., by gestures, writing, miming, etc.). The word display means unfold , but for the sake of revealing something other than the display itself. As such a display is perceived,

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* Not acting on a certain meaning is still a kind of action that also depends on this totality of significance.

one can then find out whether or not one still intends going on with the original intention. If not, the intention is modified and the modification is in turn displayed in a similar way. This process can continue to ever greater

degrees of comprehensiveness and depths of inwardness (e.g., the display of the intention behind the act of display itself).

What is important here is that intention constantly changes, in the act of perception of the fuller meaning of its implications, and that the resulting action changes accordingly. Even perception itself is included within this over- all activity of meaning and intention. What one perceives is not the thing in itself (which is unkown or unknowable, if it has any meaning at all). Rather, no matter how deep or shallow one's perceptions may be, what one perceives is what it means at the moment. Intention and action then develop in accordance with this meaning.

A good example of the above is found in the process of seeing. Most of this is taken for granted, and we tend to suppose an inner area of some sort in our heads, perhaps like a cinema screen (except that it is made of brain cells) on which things are displayed. However, if a person's head is opened up, one finds only brain cells and no such screen . Nevertheless, the object observed seems to be a thing in itself (at least to our minds). In a very subtle way, the activity of the brain cells somehow yields a conscious display of the information carried by the senses, as modified and interpreted by our past knowledge of the perceived object. This display will of course then signa- somatically affect subsequent intentions and actions.

This view of soma- significant and signa- somatic activity fits in very well with the work of the well- known psychologist, Piaget, who has carefully observed and studied the growth of intelligent perception in infants and in young children. This led him to say that such perception flows out of what is in effect a deep initial intention to act toward the object. This action may initially be based partly on a kind of significance that objects have which is grounded in the accumulated instinctive response to the experience of the species, and partly on a kind of significance that is grounded in the past experience of the child itself. Whatever its origin may be, what this action does is to incorporate (or assimilate) its object into a cycle of inward and outward activity, in which no real break or division (such as soma and psyche) is

possible. Intention is implicitly in at least some degree of conformity with what the object is expected to be (however vague these expectations usually are, at the beginning). The resulting action comes back as a sense of the extent to which the object fits or does not fit this intention. This brings about a modified intention, with correspondingly modified butward action. This process is continued until a satisfactory fit is obtained between intentions and their consequences (after which it remains stable until further discrepancies between intentions and consequences are sensed).

Piaget points out, however, that the initial intention need not be directed primarily toward incorporating the object into a cycle of activity, in order to produce a desired result (e.g. to obtain enjoyment or satisfaction). Instead, it may be directed mainly toward perception of the object. For example, the child may initiate movements aimed at exploring and observing the object (such as turning it around, bringing it closer to look at it, etc.). From such an intention, it is possible for him to begin with all sorts of provisional feelings as to what the object might be, and to allow these to unfold into actions, which come back as perceptions of fitting or non-fitting of the intentions behind the actions. This leads to a corresponding modification of the detailed content of the intention behind these movements, until the outgoing actions and incoming perceptions are in accord. This is a very important development of intentional activity, which makes possible an unending movement of learning and discovering of what has not been known before.

A similar process, diffused throughout the brain and the rest of the nervous system, is going on at deeper levels of meaning. Thus, at a certain stage, the child learns how to explore something

that is not present to sense perception by displaying it in the imagination. Indeed, we could say that the display of the imagination is similar to that of the senses, in that it is based on selected information, but different in that the information comes from memory and thought, rather than primarily from sense perception. Thus, as Piaget says, the imagination gives a kind of internal imitation of the appearance of an object. For example, from the sensory perception of an object as seen from one view, the imagination may enable the child to picture what it would be like when seen from another angle. Of course, he may be able to test this image actually moving to the imagined place from which he could see the other view. But before doing this, he may test what he has done

internally. Thus, he may compare the image in his mind with his knowledge of similar objects, to see if its implications make sense . If they do not, the detailed content of the intention behind the display of the second view wiII have to alter, until a satisfactory internal image is obtained. This alteration arises from a deeper level of intention, which is concerned with bringing about harmony between the detailed content of the intention behind the display and what actually appears in the imagination. In this way, there can arise an indefinite extension of inward soma- significant and signa- somatic activity, that is relatively independent of the outgoing physical action and incoming physical sensation. Such activity is roughly what is meant by the mental side of experience.

It is possible to look at this whole process in terms of the implicate or enfolded order (which I have discussed elsewhere). For, as indicated earlier, all these levels of meaning enfold each other, and may have a significant bearing on each other. Within this context, meaning is a constantly extending and actualizing structure - it can never be complete and fixed. At the limits of what has, at any moment, been comprehended are always'unclarities, unsatisfactory features, failures of intention to fit what is actually displayed or what is actually done. And the yet deeper intention is to be aware of these discrepancies and to allow the whole structure to change if necessary. This will lead to a movement in which there is the constant unfoldment of still more comprehensive meanings (e.g. as in the case of the failure of Newton's laws which led to Einstein's insight into new meanings for space, time and matter).

But, of course, each new meaning thus perceived has some limited domain in which the actions flowing out of it may be expected to fit what actually happens (e.g., there are reasons to suppose that even Einstein's notions of space, time, and matter may fail beyond a certain point). Such limits may in principle be extended indefinitely through further perceptions of new meanings. However, no matter how far this process may go, there will still be limits of some kind, which will be indicated by the disharmonies between our intentions, as based on these meanings, and the actual consequences that flow out of these intentions. At any stage, the perception of new meanings may resolve these discrepancies and disharmonies, but there will continue to be limits, so that the resulting knowledge is still incomplete.

What is implied by the above is that meaning is capable of an indefinite extension to ever greater levels of subtlety and as well as of comprehensiveness (in which process there is a movement from the explicate toward the implicate and vice versa). This can actually take place, however, only when new meanings are being perceived freshly from moment to moment. Of course, fresh perceptions may flow freely into the short term memory, which does not hold a fixed content and therefore, we shall include the short term memory as a natural extension of fresh perception. However, the long term memory is a kind of relatively fixed recording, tending to have a certain stable quality. Of course, even long term memories may fade, or otherwise alter, as their meanings are seen to change in actual experience. Nevertheless, the long term memory operating as the major factor in consciousness is not able to transform its own structure in a fundamental way, and has indeed only a limited capacity even to adapt to new situations (e.g., by forming combinations of known images, ideas, principles, etc.). To go beyond these limits, a fresh perception of new meanings is needed. To create new meanings in this way requires at least a potentially infinite degree of inwardness and subtlety in our mental processes. Such mental processes of indefinitely deep inwardness and subtlety can, however, incorporate the content of memory along with the rest of perception into wholes, in which, for example, old long term memories may take on new meanings. Thus, though memory is essentially mechanical when it is the major factor operating, it is nevertheless able, in a secondary role, to participate significantly in creativity.

Thus far, we have given reasons why meaning is capable of indefinite extension to ever greater levels of subtlety and refinement. However, it might appear at first sight that in the other direction, i .e. , of the manifest and the somatic, there is a clear possibility of a limit, in the sense that one might arrive at a bottom level of reality. This could be for example, some set of elementary particles out of which everything would be constituted, such as quarks and leptons , or perhaps yet smaller particles. Or in accordance with currently accepted views of modern physics, it might be a fundamental field, or set of fields, that played the role of bottom level . What is of crucial importance is that if there were such a bottom level , its meaning would in principle be unambiguous. In contrast, all higher order patterns, made up of forms in this supposedly basic structure of matter, are ambiguous. That is to say, how they are chosen and what they signify depends, to a large extent, on what a given situation means to us,

and this may vary, according to our interests and motivations, our background of knowledge, etc. But if, for example, there were a bottom level of particles, they would be exactly what they were, constituting a reality that was simply there , independently of what it meant to us; or of any other features of the context within which they are to be considered. Of course,. it must be kept in mind that all scientific knowledge is limited and provisional, so that we cannot be certain that what we think is a bottom level" is actually so (for example, atoms were thought to be the bottom level, and are now known to be constituted of electrons, protons, neutrons, etc., and these in turn are now thought to be made up of quarks, which in turn may be structures of preons (sub- quarks, etc. , etc.). Nevertheless, this uncertainty of knowledge cannot by itself prevent us from believing in the existence of some kind of bottom level if we wish to do so. It is not commonly realized, however, that the quantum theory implies that no such bottom level of unambiguous reality is possible.

This can best be brought out in terms of Niels Bohr's treatment of the subject, which is the most consistent interpretation of the theory that has been given thus far, and one that has been accepted by most physicists (though it must be noted that few physicists have studied Bohr deeply enough to appreciate fully the revolutionary implications of his extremely subtly expressed arguments). To understand what is involved here, we have first to point out that, while the quantum theory contradicts the previously existent classical theory, it does not explain basic concepts of this theory as an approximation or as a simplification of itself. Rather, it has to presuppose the classical concepts at the same time that it has to contradict them. This paradox is resolved in Bohr's point of view by saying that the quantum theory introduces no new basic concepts at all. Rather, what it does is to require that concepts (e.g., position and momentum), which are in principle unambiguous in classical physics must become ambiguous in quantum mechanics. But the word ambiguity signifies an incomplete definition of meaning. Indeed, it is evident that all meaning must have a certain ambiguity. This may be more or less, but it can never be totally eliminated. What Bohr does is to bring this ambiguity of meaning (which we ordinarily associate only with the mind) into a crucial role in the understanding of the behavior of matter, as treated by the quantum theory.

Bohr introduces such a radically new step, not because he wishes to be daring and revolutionary. Rather, it is because he is forced to do something like this, by the very form of the mathematics, which so successfully predicts the quantum properties of matter. This mathematics yields predictions in general only for statistical aggregates of similar measurements. However, it not only fails to predict what will actually happen in an individual measurement; it cannot even provide an unambiguous concept or picture of what sort of process is supposed to happen or take place in such a measurement. Indeed, the meaning of each individual measurement is unanalyzably tied up with the entire set of experimental conditions in which this measurement takes place, in a way that prevents this meaning from ever being sharply defined, in all its relevant aspects. This implies that the mathematical equations are in no sense an unambiguous reflection of an independently existent reality that would underlie the phenomena (or appearances) which are to be found in a measurement. Rather, they merely help to give an ambiguous and context- dependent meaning (generally statistical) to such phenomena. Thus, in any attempt to measure the position and the momentum of a particle very accurately, there is an inherent ambiguity in the values of each of these quantities. Indeed, whether a spot on a photographic plate, for example, means a particle with a well defined position or one with a well defined momentum depends on the total context, defined by the over- all experimental arrangement. This dependence of meaning of experimental results on context is negligible at the ordinary level of experience, but it is crucial in any very precise measurement, not only of position or of momentum, but of any physical property whatsoever. It follows then that ultimately, there is no unambiguous context independent bottom level of reality in physics, beyond the phenomena themselves. Indeed, the whole question of what is to be meant by terms, such as electrons , quarks , etc., is inseparably bound up with the forms to which we have chosen to give emphasis (i.e., the arrangements of matter needed to carry out an experiment). So, the higher levels that depend on meaning and what is hoped to be the fundamental level (e.g., of particles) are bound together, in a way that cannot be disentangled.

The kind of situation described above is, of course, what is pervasively characteristic of mind and of meaning. Indeed, the whole field of meaning can be described as subject to a distinction between content and context, which is similar to that between soma and significance, and between the subtle and the manifest. That is to say, there are two aspects that are inevitably present, at least implicitly, in any attempt to discuss the over- all meaning in any given situation. According to the dictionary, the content is the essential meaning (e.g., as in the

content of a book). But any specifiable content is abstracted from a wider context, which is so closely connected with the content that the meaning of the former is not fully defined without the latter. An elementary example is the use of the dictionary itself. Each word is defined in a context supplied by other words, and in turn, these other words depend on still broader contexts of words, which may include some of the original words of which they were themselves the definitions. That is to say, the context may be circular, as well as extending indefinitely beyond all horizons. Indeed, each context is in this way itself being regarded as a further content, which has a yet wider context, and so on. More generally, the significance of any particular level of content is evidently therefore critically dependent on its appropriate context, which may include indefinitely higher and more subtle levels of meaning (e.g. whether a given form seen in the night means a shadow or an assailant depends on what one has heard about prowlers, what one has had to eat and drink, etc.).

While Bohr's interpretation of the quantum theory is consistent, it is unsatisfactory in that ultimately, it can discuss only in terms of the phenomena of measurements as they are to be observed in physics. In terms of the implicate order, an alternative interpretation is possible in which one can ascribe the phenomena to a deeper reality that underlies them. However, this reality is not mechanical. Rather, its basic action and structure are understood through enfoldment and unfoldment. This is explained in detail elsewhere, but what is important for our purposes here is that the law of the total implicate order (holomony) determines certain sub- wholes, which may be abstracted from it as having relative independence (autonomy). The crucial point is that the activity of these sub- whol es is context dependent, so that as the context changes, their basic modes of behavior may also change, and indeed, they may even cease to be properly abstractible as independent and autonomous. So, the implicate order makes it possible to discuss the notion of reality in a way that does not require us to bring in the measuring apparatus in an essential role. It achieves this by making any abstraction of a part of nature generally context dependent, not only in the superficial sense of interaction with what has been left out, but more fundamentally, in that its very mode of behavior may alter with the context (e.g. , whether an electron is more like a wave or more like a particle). Dependence on particular contexts of experimental arrangements established by human beings in laboratories is then only a special case of this.

The analogy between the implicate order and meaning is thus fairly clear. This analogy can be carried even further by noting that with the implicate order (as with meaning), the subtler levels ultimately both organize and give rise to the more manifest levels. As an example of this in physics we may consider the quantum mechanical field theory (rather than the corresponding theory of particles). As shown elsewhere, the field can be regarded as an implicate order, which is however given form structure and organization by a much more subtle kind of implicate order. The action of this subtle implicate order on the implicate order gives a good analogy to the signa- somatic relationship, that we have discussed here in connection with human experience.

In a certain sense, to suggest such an idea is to extend a notion similar to that of meaning to the whole universe. For it is implied that each feature of the universe is not only context dependent in a fundamental way, but also that the grosser manifest features will in general depend significantly on the subtler aspects.

As we have seen, the above holds also for us, both mentally and physically. This view therefore implies that everything, including ourselves, is a generalized kind of meaning. We shall go into this in more detail later, but for the present, we emphasize that consciousness as we know it is not being attributed to nature. Rather, the suggestion is that both nature and mind as we experience it (which has somehow evolved in nature) share a basic over- all process which is an extension of soma- significant and signa- somatic activity.

Clearly, the above notion greatly simplifies the problem of how one may understand the relationship between mind and matter. For now, there is no absolute distinction between them. Rather, there is only the one field of reality as a whole, containing the universal but relative distinction between generalized soma and generalized significance (which as we recall are not separate entities or substances, as would be psyche and soma). What we call matter is then encountered wherever the somatic side of this universal and fundamental distinction is the major factor and what we call mind is encountered wherever the side of significance is the major factor. However, in addition, we are proposing that not only do we move toward ever greater degrees of subtlety as attention goes deeper into the mental side, but that this also happens as we go deeper into the physical side. One may even surmise that perhaps both sides ultimately meet at infinite depths, on a ground from which the whole

of existence emerges. But because of the necessary dependence of each level on yet more subtle contexts, there can be no finite bottom level of reality.

Of course, this view raises the serious question as to whether it can make sense to say that material structures have an intrinsic kind of meaning, which is not ultimately attributable to us. A good way of leading into this question is to consider the distinction between information and its meaning. An item of information by itself would have little or no value, except in a broader context, in which the significance of this information would emerge. Of course, we commonly regard both information and meaning as belonging only to the human mind. But in computer science, information has been given a kind of objective significance. To do this, information is analyzed in terms of bits , which are essentially answers to Yes - No questions. Thus, an element in a silicon chip represents Yes , when it is in a certain physical state, and No otherwise. A very large network of such bits enables us to store all sorts of information in the soma of the silicon chip. So, at this point, we can at least say that such information has an objective representation, and that it can also act objectively as part of a computer programn;e, without further human intervention. Indeed, as the term is used in connection with computers, information is evidently a particular kind of somatic code or language , based on the state of a set of silicon chips, rather than on printed or spoken words, spots of light on a television screen, etc. We may therefore introduce the term information- significance, as a special form of soma- significance, that is mainly appropriate in the context of computers.

To see more generally how information may be objectively active and not dependent on human beings or on what they have constructed (e.g. computers) for its context of meaning, one can refer here to a useful definition introduced by Gregory Bateson. Information is a difference that makes a difference. This is a good point of departure for our purposes here, as in the study of matter in general we are constantly encountering differences that make a difference whether we know about them or not (e.g. differences in initial velocities of particles lead to different functions or trajectories). In such situations we may say that information functions as generalized intention, which acts objectively. (e.g. different velocities may be described as differing in intentions with regard to future movement). And so we see that Bateson's definition encompasses the notion that intention implied by information quite generally unfolds into objective action that corresponds in a certain way to this information (i .e. , as the difference that the information makes).

To bring out further what is implicit in Bateson's definition, we have also to add that each bit of information arises in a broader context of unfoldment of meaning. That is to say, the notion of a bit of information is relevant only as an element in an over- all process, in which this bit is abstracted from the total flow of meaning. If we think of nature more generally as ordered by laws in which differences in earlier conditions correspond in a necessary way to others in later conditions, we can see at last the outlines of how the notion of objective soma-significant and signa- somatic activity may be extended to universe as a whole.

It is interesting, however, to pursue the example of computers to show how this notion can be given a more precise and detailed expression. To do this, we begin by considering a typical Yes - No element (e.g., in a silicon chip), as we have done before. We represent its state by the element, E. If the answer is Yes, a certain process is now set in motion by a signal coming into the chip and if it is No, nothing happens. The answer Yes is further represented by E = l and No by E = 0. (In any living cell, and particularly in the nervous systems of living beings, however, there may be a more subtle kind of information, having a certain threshold sensitivity, as well as the possibility of a continuous variation of responsiveness according to conditions, rather than the all or nothing quality characteristic of computer elements.)

Now, what is crucial for the computer is how such an element is connected to other elements, and ultimately to the input of information from outside, and to the output of external action, as determined by the programme. In a typical situation, a certain range of inputs comes to this element, and these are connected to a corresponding range of outputs . This is illustrated in Figure 6.

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If the programme is such that E = 1, any of the inputs will lead to all the outputs. If E = 0, then nothing happens.

If we were to translate this situation into ordinary language, we could say that the meaning of the information content, when E = 1, is that the above inputs must lead to the corresponding outgoing actions. One could then say that the state with E = l is analogous to an intention to respond to these inputs in a certain way, while the state with E = 0 is analogous to an intention not to respond.

As these elements are connected up in different ways, more subtle levels of intention may arise. Thus, if there is a tree pattern, the flow of activity will be along branch (1) if the state of the element A is Yes and along (2) if No."

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The element A may in turn be affected by the output of still other elements (e. g. , in the memory of the computer), or by the output of other machines, or by the programmer himself. Indeed, the programmer's intentions may further be significantly influenced both by the structure of the machine and by the content of its programme. So the intentions within the programmer and those within the machine will, to a certain extent at least, form a larger whole in which human being and machine are united.

Because it will be helpful in suggesting an analogy between structures of information- meaning in a computer and those of the generalized soma- significance that are present within material processes more broadly, we shall now show how meaning can be represented mathematically by a matrix. To do this, let us first return to the considerations of a single element, E. We represent the sensitivity of the input along channel a by V^a, and the sensitivity of the output along channel b by V^b. We then define the matrix

$M = V^a E V^b$

The matrix describes the net relationship of input to output for the element represented by E. Such a matrix unites information and its meaning in a single mathematical concept.

Of course, this matrix represents only one element and its connections. To describe the more complex and subtle structures that may be built from such elements would require a correspondingly complex and subtle structure of matrices, hierarchically organized into matrices of matrices , etc. These will allow for complex structures of meaning to be treated as an inseparable whole, on a systematic mathematical basis. (For the more technically minded, we may add that the mathematics is non- linear and non- local, and that the logic is both Boolean and non-Boolean.

(Although the individual matrices are themselves linear, they are organized in such a way that the total system is not linear. And since an element, E, of a higher level of the hierarchy has its meaning in a whole block of linear level structures of matrices, the resulting theory is non-local . Finally, though the elements, E, are Boolean, their meanings, expressed through the V^a and the V^b are non- Boolean.)

Thus far, however, we have given a matrix representation to meaning only in its aspect of intention. What about its aspect of significance? To extend the analogy in this way, one has to introduce the notion of a connection (in general, indirect) between the output of an element (or set of elements) and the input. In particular, one has to arrange this connection in such a way that if the output does not produce a certain result (defined, for example, by other elements in the programme) the input is changed in such a way as to bring about an action that decreases the discrepancy between the actual state and the result that the machine is set to produce. This sort of behavior is evidently an analogue to the activity described by Piaget in his studies of the growth of intelligence in infants and young children. Here, an outgoing activity determined by an existent pattern of meaning as intention is modified in response to the incoming activity of perception, until the two sides are in accord. Similarly, in our machine, the pattern of outputs V^b, would be modified until there is an accord with the inputs, U^a. This sort of accord would establish a physical analogue to meaning as significance. (Here, it should be added that in a certain elementary way, such a feedback of output to input is already being actively used in what are called cybernetic processes, as well as in bio- feedback).

Mathematically, in the situation of accord between output and input described above, we can set $V^a = U^a$. The matrix then takes the special form

$M = U^aEU^b$

This form of a matrix is distinguished by the fact that both of its sides are essentially the same. It is therefore called a symmetric matrix.

Our proposal then is to extend this sort of idea to matter in general, as treated by the quantum theory. In fact, it is well known that in this theory, a physical situation is no longer described by the numerical values of physical quantities (such as position, momentum, energy, etc.). Rather, these are replaced by matrices. Indeed, the actual state of a physical system is described by a symmetric matrix (extended to what is called Hermetian, the state matrix or the density matrix). As explained above, such a matrix can represent a certain kind of information along with its significance. And as we have also seen, this whole inseparable complex is objective, in the sense that it represents a difference that makes a significant difference, and simultaneously specifies just what this significance is.

It is interesting that the quantum theory uses another kind of matrix (this is called a unitary matrix) that is not symmetric. Such a matrix is just what describes all movement and activity of matter. This too corresponds to what has been said here, in connection with ordinary material particles and with machines. For here also, non-symmetric matrix represents objective intention to act in a certain way. Such an intention may ultimately arise out of a yet broader context of meaning , as described by symmetric matrices, and matrices of matrices, etc. So, we are proposing

that matter has an inbuilt intention to move in accordance to certain general and regular rules, and that when it does so, this is called a law of motion. Such a law is described by an unsymmetric matrix and has the form of shown in Fig. 8.

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In matter in general, the structure of such intention is of course more subtle than it is in a computer, though the basic principle is still similar. But the main point is that the laws of motion of matter may be regarded as intentions , which are forms of generalized meaning.

To sum up, then, we have used the computer as an example of how it is possible to have an objective kind of process of soma- significance, and we have expressed this mathematically in terms of symmetric and unsymmetric matrices. Through the fact that in the quantum theory both the state of existence of matter and the law of how it moves and transforms itself are expressed in terms of similar symmetric and unsymmetric matrices, we showed how our notion of the universality of soma- significant and signa- somatic activity may be seen as contained at the very basis of modern physics. But (as shown elsewhere) this use of matrices is also a typical way of mathematically formulating what is meant by the implicate order. It follows that the latter provides a general mode of description that covers the activity of human consciousness, of computers which are a product of this consciousness, and of nature in general which exists beyond this consciousness.

What has been said throughout this paper thus implies that one can consistently treat the whole of nature in terms of a generalized kind of soma- significant and signa- somatic activity. That is to say, in the universal flux, a conceptual cut can be made at any point and as with the magnetic field, the two poles of soma and significance will necessarily arise at each such cut . If another cut is then made, the flux between them can thus be understood as a soma- significant and signa- somatic flow from one of the extremes to the other end and back again. This flux, along with all its inner relationships, is to be regarded as

having its own existence prior to that of man, even though when man comes in, its context may be radically altered. To look at the universe in this way is indeed more consistent than to suppose that there is an unambiguous bottom level at which such considerations have no place.

However, as has also been said previously, a crucial difference between nature and a machine is that the former is infinite in its potential depths of subtlety and inwardness while the latter is not. If we accept that man has evolved in Nature, it follows in principle at least that he is also potentially unlimited in the depths of subtlety and inwardness that he can reach both physically and mentally. Of course, the machine is also capable of indefinite development, but as far as we can see at present, this would require the aid of man.

We have thus seen that the notions described can in principle encompass both the outward universe of matter, and the inward universe of mind. In this approach, the three basic aspects arise:

Soma

Significance,

Energy.

Modern physics has indeed already shown that matter and energy are two basic aspects of one reality. Energy acts within matter, and even further, energy and matter can be converted into each other. From the point of view of the implicate order, as explained earlier, energy and matter are imbued with a certain kind of significance, which gives form to their over- all activity and to the matter which arises in this activity. And as we have seen, the energy of mind and of the material substance of the brain are also imbued with a kind of significance, which gives form to their over- all activity and to the material structures arising therein. So we may say quite generally that energy enfolds matter and meaning, while matter enfolds energy and meaning. Also, meaning enfolds both matter and energy. For whatever we may see and know of these, this has to be apprehended through its meaning. This state of affairs, in which the middle term enfolds the other two, as shown below.

Matter < > Energy < >Meaning Meaning < > Matter < > Energy

Energy < > Meaning < > Matter

So, each of these basic notions enfolds the other two. It is through this mutual enfoldment that the wiiole notion obtains its unity.

Finally, we may put all these relationships together, in the triangular form .

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The symmetry of meaning, energy and matter in the above respect is, however, not complete. For evidently, even the differences between matter, energy, and meaning are themselves enfolded in meaning. The total field of meaning therefore enfolds itself; that is to say, there is a meaning of meaning (which we have indeed already indicated at the beginning of this article). In its most e1ementary sense, this is seen in the fact that the meaning of a whole range of different and apparently unrelated subjects, each with its own meaning, can come together in the perception of a new and more encompassing whole meaning, in which each of the submeanings finds its proper context. But much deeper is the fact that within the field of meaning as a whole, it is possible to begin to unfold the meaning of meaning (we have been doing this here to some extent). For example, we have expressed the structure of meaning in terms of the poles of soma and significance, the subtle and the manifest, etc. This can evidently be carried further into indefinitely deeper approaches.

It is clear that we cannot similarly discuss the energy of energy or the matter of matter . The field of meaning as a whole thus refers to itself directly (and this is indeed the basis of the possibility of that intelligence which can comprehend a whole, including itself). On the other hand the total field of matter and energy obtain their self reference only indirectly, firstly, through meaning, and secondly, through each other reflexively (e . g., matter refers to energy and energy to matter).

The problem of conceiving of a universe that can refer consistently to itself has long been a difficult one, that has not been resolved in a really adequate way. Of course, it has generally been clear that the whole field of meaning

can refer to itself. In doing this, it naturally presupposes the context of the universe, to which it also refers. But, as has been stated earlier, meaning has nevertheless been regarded as peculiar to our own minds and not as a proper part or aspect of the objective universe. However, we can see that if there is a generalized kind of meaning intrinsic to the universe, including our own bodies and minds, then the way is opened for understanding the whole as self- referent through its meaning for itself . In this whole, it is clear, of course, that the aspect of soma cannot be divided from that of significance. For example, whatever meanings there may be in our minds , these are, as we have seen earlier, inseparable from the totality of our somatic structures and therefore from what we are. Indeed, as has also been seen, this latter depends crucially on the total set of meanings that is operative within us. If we trace these meanings to their ultimate origin, we will find that a major part of them have come from the society as a whole. Each person takes up his own particular combination from the general mixture that is available to him in this society. And so, at least in this way, each person is different. Yet, the underlying basis is characterized mainly by the fundamental similarity over the whole of mankind, while the differences are relatively secondary.

In general, such meanings change as human beings live, work, communicate, and interact. These changes are based, for the most part, on adaptation of existent meanings. But it has also been possible, from time to time, for new meanings to be perceived. Perceptions of this kind have generally occurred when someone became aware that certain sets of older meanings do not cohere. Such a perception may be understood as a vast extension of what happens in the development of intelligence in growing children, as described by Piaget. Some as yet incompletely formed notion of a new meaning that removes the contradictions in the older meanings begins to penetrate a person's intentions. As explained earlier, the actions unfolding from these intentions are displayed (e.g. , in the imagination), and the discrepancies between what is displayed and what is intended, lead to a change of intention, aimed at decreasing this discrepancy. Then, often in a flash that seems to take no time at all, a coherent new whole of meaning is formed within which the older meanings may be comprehended as having limited validity within their proper contexts (e.g. , as in our earlier example, in which Einstein's replacement of Newtonian conceptions by relativistic ideas led to new meanings for space, time, matter, energy, etc. , containing Newton's notions as approximations).

Recalling that meaning is an intrinsic part of reality, we see that such a perception of new meaning constitutes a creative act. As their implications are unfolded when people take them up, work with them, etc. , the new meanings that have thus been created make their corresponding contributions to this reality. These contributions are not only in the aspect of significance, but also in the aspect of soma.

Each perception of a new meaning by human beings therefore actually changes the over- all reality in which they live and have their existence, sometimes in a far- reaching way. This implies that such reality can never be complete. In the older view, however, meaning and reality were sharply separated. Reality was not supposed to be thus actually changed in a direct way by perception of a new meaning. Rather, it was thought that to do this was merely to obtain a better view of a reality that is independent of what it means to us. (e.g. , one might discover that what one thought was the bottom level of reality was not, and believe that now, finally, one "saw" the true bottom level).

This point is of crucial significance for understanding psychological and social change. For if meaning is something separate from human reality as a whole, then any such change must be produced by an act of will or choice, guided perhaps by our new perceptions of meaning. But if meaning itself is a key part of reality, then whenever society, the individual, and their relationships are seen to mean something different from what they did before, a fundamental change has already taken place. No special choice o**r** act of will is further required for this to happen. Rather**,** the content of will and the framework of perceived possibilities within which choice takes place, along with the restriction to the one of these actually chosen, will themselves grow out of the meaning of the total situation that confronts us at any given moment. Or to put it differently, what man does is an inevitable signa- somatic consequence of what the whole of his experience, inward and outward, means to him. For example, once the world came to mean a set of disjoint mechanical fragments, one of which is oneself people could not do other than act accordingly, and engage in the kind of ceaseless conflict that this meaning implies. However, if mankind could sustain a perception signifying that the world is an unbroken whole, with a multiplicity of meanings, some of which are fitting and harmonious, and some of which are not, a very different

state of affairs could unfold. For then, there could be an unending creative perception of new meanings that encompass the older ones in broader and more harmonious wholes, which would unfold in a corresponding transformation of the over- all reality that was thus encompassed.

In this connection, it is worth noting that our civilization has been suffering from what may be called a failure of meaning. Indeed, from earliest times, people have felt this as a kind of meaninglessness of life. In this sense, meaning also signifies value. That is to say, a meaningless life has no value; it is not worth living. But, of course, it is impossible for anything to be totally free of meaning. For as we have explained earlier, the notion of generalized soma- significance, regarded as valid for the whole of life, implies that each thing is its total meaning (which, of course, must ultimately include all of its relevant context). What we intend to say by meaningless is therefore, that there is a meaning, but that this meaning is not adequate. Usually, this is because it is very mechanical and constraining, hence of little or no value. Such mechanical meanings will, as has already been pointed out, be based on long- term memories that are held rigidly, so that they cannot participate properly in fresh creative perceptions. A change in this situation is possible only if a new meaning is perceived, that is not thus mechanically constricted. Such a new meaning, sensed to have high value, will arouse the energy needed to bring a whole new way of life into being. On the other hand, a mechanical meaning tends to deaden the energy, so that people remain indefinitely as they have been. In this way, meaning is seen to have a fundamental role to play in what life actually is.

When we come to extend this note of meaning to the cosmos as

a whole, a similar approach will be seen to be appropriate. Firstly, of course, human meanings make a certain contribution to the cosmos. But secondly, the notion of generalized soma- significance implies that the cosmos is ordered according to a kind of objective meaning. As happens with human beings, new meanings may emerge in this over- all order. For example, current theories in physics and cosmology imply that the universe evolved from a big bang , during which there were initially no electrons, protons, neutrons, or any of the other basic structures of matter now known. Nor did space and time exist in their present well defined forms. All of this emerged from a very different state of affairs. Our proposal is then that, as happens with the actions of human beings, this process of emergence included a creative unfoldment of generalized meaning. Later, with the evolution of the forms of life, fundamentally new steps may also have evolved in the creative unfoldment of further new meanings of this kind.

Then, there is the question of how our own meanings are related to those of the universe as a whole, Here, we recall that our action toward the rest of the universe is ultimately a result of the totality of what it means to us. But since we are proposing that everything acts according to a similar principle, we may say that the reaction of the rest of the universe to us is its signa- somatic response according to what we mean to it. Of course, not all meanings fit harmoniously with that to which they refer. For example, in Piaget's discussion of intelligent perception, it is clear that the child's early exploratory movements may be the outcome of inadqueate notions as to the meaning of the over- all situation in which it is acting. But through sensing the discrepancies between intentions and what actually happens, fresh perception of new meanings is possible, and in this way, harmony may eventually be established. So, in the long run, only those meanings which allow changes that tend to bring about such an accord will survive.

We are proposing here that this holds not only for living beings, but also, for matter in general. That is to say, through a long process of mutual adjustments of its various sub- wholes of meaning, and through insightful perception of new wholes, the universe has come to a great degree of over- all harmony, that is revealed in the vast order of natural laws, some of which have been discovered by modern science. The proposal is further, however, that the harmony is not complete, and indeed cannot be so. Even now, a further creation of meaning is going on, in a process that includes mankind as part of itself. And here, we refer not merely to man's physical development, but also to the constant creation of new meanings that is essential to the unfoldment of society and of human nature itself. Further, even time and space are part of the total meaning and are subject to a continuing evolution. In this evolution, extended meaning, as intention , is the ultimate source of cause and effect (and more generally of necessity).

Rather, than to ask what is the meaning of this universe (in which man is of course also included), we therefore have to say that the universe is its meaning. As this meaning changes, so also does the universe and all that is in it. Of course, we are here referring, not just to the meaning of the universe for us, but more generally, to what we have called its objective meaning, i.e. , its meaning for itself . As indicated earlier, such an approach is coherent, because a universe containing meaning can consistently refer to itself.

Likewise, we have to say that there is no point to asking the meaning of life, as life, too, is its meaning (which is also self- referential, and capable of changing basically when this meaning changes). What is required for such a change in human life is a creative perception of new and evermore encompassing meaning.

What is the meaning of creativity itself? This question, like all other fundamental questions, cannot be given a final answer, but requires constant creative perception. For the present, however, one can say that creativity is not only the fresh perception of new meanings, and the ultimate unfoldment of this perception within the manifest and the somatic. Even more, it is the action of the infinite within the sphere of the finite.

Of course, what is finite is limited. These limits may be extended in any number of ways, but when this has been done, the result is still limited. No matter how far this process may go, what is thus limited is incapable of true creativity. At most, it can lead to mechanical rearrangements of the kinds of elements and constituents that belong to whatever structures that are possible, within the limits in question. However, if one thinks of anything finite as suspended in the ocean of the infinite , one can see that its degree of independence and self-determination cannot be without limits. For whatever is finite arises in the infinite, is sustained and transformed by the infinite, and ultimately dissolves back into the finite. Clearly, then, the infinite does not exclude the finite, but on the contrary, both enfolds the latter within it and envelopes and overlaps it. All finite forms, material and mental, have their ultimate origin and end in the ocean of the infinite. And this is what makes creativity possible, within any finite domain.

We have seen that man is potentially infinite. Is man actually finite or infinite? As long as the significance of the finite is what dominates his consciousness, then he will actually be this finite significance. But when a human being truly sees the new meaning that mankind need not be limited in this way he will actually cease to be limited. He will begin to be open to the infinite, and he will be able to act creatively in every phase of life, individual and collective.

In all of this action, there is no division between the finite domains in which man can act and the infinite source or ground, from which everything, including man and his actions, ultimately emerges. Indeed, anything that can be named or thought about is an aspect of this single source, which is the ultimate ground of the unity of all things (as well as of their differences). We may recall here that such aspects are forms of appearance, which are distinguished only in thought, but which help reveal something of the nature of the whole of reality. If the signa-somatic activity flowing out of such forms leads to a coherent and harmonious contact with that of which they are the appearance; we say that they are correct. Otherwise, they are said to be incorrent. And, of course, incorrect appearances can generally be replaced by corrent ones, with the aid of further perception.

We usually tend to restrict the term appearance , however, to that which is present to the senses, while we say of thoughts that they are either false or true. Nevertheless, if one reflects for a while, one will see that thoughts too are only appearances. Certain thoughts may refer to what we call the essence; i.e. , the fundamental nature of things. Nevertheless, such thought is itself only a finite form emerging from the infinite, and dependent on that unknown from which it emerged for all that determines its domain of validity. Ultimately, it cannot give the fundamental nature of anything. Therefore, it is at bottom only a kind of appearance. However, through the perception of the relationships between thought and what is given by the senses, a much deeper perception of the meaning of that which underlies the total set of appearances is made possible.

So, let us now say that soma and significance, as well as matter, energy, and meaning, are all appearances. It should however be clear by now that appearances are not in general to be denigrated as mere illusions, without value (indeed, illusions are merely persistently false appearances). On the contrary, it is only by correctly, skillfully, and intelligently dealing with appearances that we can come into a harmonious contact with whatever reality may underlie them. Whatever we say about this is still at best on appearance. But the proposal in this

paper is that the notion of soma- significance will make possible a kind of appearance that puts us into much better contact with the basically unknown reality than does that of the duality of mind and matter, with its further division between actor, action, and that which is acted upon.

FINIS

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