

ON THE PHILOSOPHY OF FRANKLIN MERRELL-WOLFF
AND THE "NEW PHYSICS"

Michael V. Schmitt

1730

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an Essay by Michael V. Schmitt

At the onset of this essay, I am obliged to say something about what I am trying to say, what I am "essaying" to describe. The message I wish most to convey is that, at this point in our history, there are some exciting "dialogues" which have begun between certain heretofore heterogeneous and disparate elements in our society and our world. These "dialogues" are now beginning between the physicists and the mystics, the scientists and the theologians and, in short, between the "Western" and the "Eastern" schools of thought.

Specifically, I intend to focus on certain discoveries in the "New Physics" and compare them to the discoveries, or "Realizations" of one particular mystic and philosopher, Dr. Franklin Merrell-Wolff. Franklin Wolff is a product of the "Western" culture, a mathematics professor at Stanford University, who in 1936 experienced a "transformation in consciousness", or what may be termed a "mystical experience". Dr. Wolff subsequently wrote an account of the events of his personal experience in a book called Pathways Through to Space.

The reasons for choosing Franklin Wolff above all the other mystical philosophers (both Eastern and Western) are many. I would like to list only a few, if I may. Perhaps because of his educational background in the Western educational systems, Dr. Wolff has the peculiar ability to draw upon his knowledge of the fields of Western science and mathematics for his analogies used to

illustrate the concepts in his writings. This ability to use the Western language and the language of mathematics so clearly greatly simplifies the problems which arise when the mystic attempts to communicate the "ineffable" to the non-mystic.

Another consideration in the choosing of Franklin Wolff as an exemplar of the modern mystic is that he is not widely read by the general public for several reasons. His books have not been easy to obtain since their original publication by the Richard R. Smith publishers until fairly recently. Largely through the help of Dr. John C. Lilly, Pathways Through to Space has recently been republished in paperback. Dr. Wolff's two latest books, The Philosophy of Consciousness Without an Object, and Introceptualism are now available in paperback, through the Julian Press, and the "Phoenix Philosophical Press", respectively. So most of the scientists and physicists of today have never heard of Franklin Wolff and his works, except for a handful who, like myself, were introduced to his writings through references in the books of John C. Lilly, M.D.

At the time of this writing, Dr. Wolff is now 96 years old, living in Lone Pine, California. It is my opinion that the time has come for the thinking community to become familiar with the ideas of Franklin Wolff, especially in the light of the discoveries of the "new physics", and the Holographic, holistic modes of thinking now emerging in the fields of science, psychology, and in medicine.

To begin the discussion, I would like to consider the nature of "the Problem" facing our society and the world at large. What has "gone wrong" with our traditional approach and methods of viewing "reality" and the world?

"Ah Love! could you and I with Him conspire
To grasp this sorry Scheme of Things entire,
Would not we shatter it to bits- and then
Re-mould it nearer to the Heart's Desire!"¹

from the Rubaiyat of
the Sufi poet, Omar Khayyam

The crux of the problem centers around our fragmented world view of dividing the world into separate parts, and failing to establish a sense of oneness and unity behind the seemingly separate components of our world. In short, man has become alienated from his roots. A split has occurred where the subject is seen separately from the object, separating the "knower" from the "known".

Historically, this dualistic mode of thinking may be traced as far back as the Greek philosophers, especially Democritus and his "atomic" world view. Democritus held the view that everything was composed of "atoms" which formed the "basic building blocks" from which everything else is made.

The "Subject/Object" dualism may have been introduced into philosophic thinking by Rene Descartes. Descartes described matter as "extended substance", and consciousness as "thinking substance". Thus began the split between "matter" and "mind", or the famous "Subject/Object" dichotomy of dualistic philosophical thinking.

Let me illustrate by citing the physicist, Professor David Bohm's statement of the problem in his book entitled Wholeness and the Implicate Order. This is from the first chapter, called "Fragmentation and Wholeness:"

"Most physicists still speak and think, with an utter conviction of truth, in terms of the traditional atomistic notion that the universe is constituted of elementary particles which are 'basic building blocks' out of which everything is made."²

So far, this sounds like a statement taken from an ordinary high-school physics book. But he goes on to say:

"In this way, people are led to feel that fragmentation is nothing but an expression of 'the way everything really is' and that anything else is impossible."³

Dr. Wolff sees the problem of humanity as :

"...a train that has become derailed, and the function of the Bodhisattva is to restore those cars to the track again."⁴

Dr. Wolff sees the problem and its solution in terms of the nature of Consciousness. In fact, Dr. Wolff has coined a term called "introceptualism", which involves the process of "turning the light of consciousness inward toward its source"⁵

in order to achieve higher levels of consciousness, as in meditation. He goes on further to define "the Problem" of suffering humanity in this way:

"It is realized that the seeming out-of-joint world is an effect of incomplete consciousness- the kind of product one receives by the collaboration of perception and conception when the "introceptive" function is not awakened. The latter is like the reverse side of an embroidered cloth where the effect is chaotic and there are many loose threads. But on the other side we have a perfectly ordered design. On the one side, it seems that mere chance accounts for the pattern and that man lives in an alien world which has no inner sympathy with his purposes and yearnings, while on the other side is revealed a perfect order in complete sympathetic rapport with the deepest yearnings and aspirations of the human being."⁶

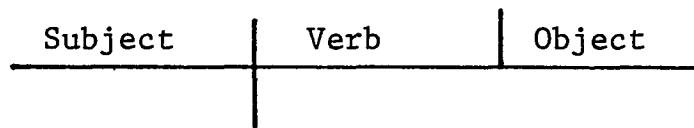
So it is not difficult to see that the problem of alienation, and the fragmented view of "reality" is really a general statement of the human condition which includes most of humanity at the present time. This is especially true in our "Western" societies. The "Eastern" cultures began with a more holistic and unified

view of things, as seen in the ancient Indian writings of the Vedas and the Upanishads. The Chinese had their philosophy of the "Tao", and recognized a polarity and mutual dependency of the "Self" and the "Not-Self", which they call the "other". In a commentary on the Chuang Tzu (The Book of Master Chuang), we find:

"There are no two things under Heaven which do not have the mutual relationship of the "Self" and the "other". Both the Self and the other equally desire to act for themselves, thus opposing each other as strongly as East and West. On the other hand, the Self and the other at the same time have the mutual relationship of lips and teeth. The lips and the teeth never (deliberately) act for one another, yet 'when the lips are gone, the teeth feel cold.' Therefore the action of the other on its own behalf at the same time helps the Self. Thus though mutually opposed, they are incapable of mutual negation."7

In our American society, our educational system and even our language tends to propagate this "fragmented" thinking we have been discussing. An examination of our language shows that there are certain features which reveal this tendency. Consider

the structure of our "subject-verb-object" form which is "built-in" to our sentences. It has not been too many years ago when I recall that in our High School English classes we were bombarded with the rules of "diagramming sentences". The general form looked something like this:



Dr. Bohm comments on this "fragmenting" of our sentence structure:

"This structure implies that all action arises in a separate entity, the subject, and that, in cases described by a transitive verb, this action crosses over the space between them to another separate entity, the object." ⁸

Here is what Dr. David Bohm has to say about this "structuring" of our language:

"This is a pervasive structure, leading in the whole of life to a function of thought tending to divide things into separate entities, such entities being conceived of as essentially fixed and static in their nature. When this view is carried to its limit, one arrives at the prevailing scientific world view in which everything is regarded as ultimately constituted out of a set of basic particles of fixed nature." ⁹

Since the days where diagramming of sentences was fashionable, there have been changes in our educational approach toward what is known as "Transformational Grammar". This tendency may be a step in the right direction toward a more holistic and unified approach to the teaching of the language, but that is another issue.

Next we should consider how the philosophy of Franklin Wolff and the discoveries in the "new physics" are moving toward a possible resolution of the problem. Both the physicist and the mystic share a common interest in the nature of "Consciousness", which, if Dr. Wolff is correct, may prove to be the "final resolution of all things."

We will begin the examination of the cosmology of Dr. Wolff with a look at the three "foundation stones" of his philosophy. The following is an excerpt from his published essay dated Nov. 5, 1973, entitled "Three Fundamentals of the Philosophy":

"I wish to direct your attention to the three fundamentals of my philosophy. Though I have discussed them before, I have now something more to say, after a lifetime of thought plus the enormous aid of five Realizations, three of which may be viewed as propaedeutic, and two of which may be considered as Transcendental. After all of that, thought has eventuated, or has been 'distilled' into three fundamental propositions which are in their formulation very simple. Indeed, the point may be made that the attainment of essential simplicity is the most difficult

achievement for thought of all its efforts. But when I speak of simplicity, I do not mean it in the sense of crude and incompetent thinking, or of 'popular' thinking, but rather in the sense that pure mathematics is the simplest form of all thought, because it is the most pure.

These three propositions are as follows: First, that consciousness is original, self-existent, and constitutive of all things. Second, that the subject to consciousness transcends the object of consciousness, and Third, that there are three and not two fundamental organs, faculties or functions, of cognition."¹⁰

In the following diagram, I have drawn the three fundamentals as though they were three steps, or "foundation stones" upon which his whole edifice rests. (See Figure 1)

The Three Fundamentals of the Philosophy
of
Franklin Merrell-Wolff:

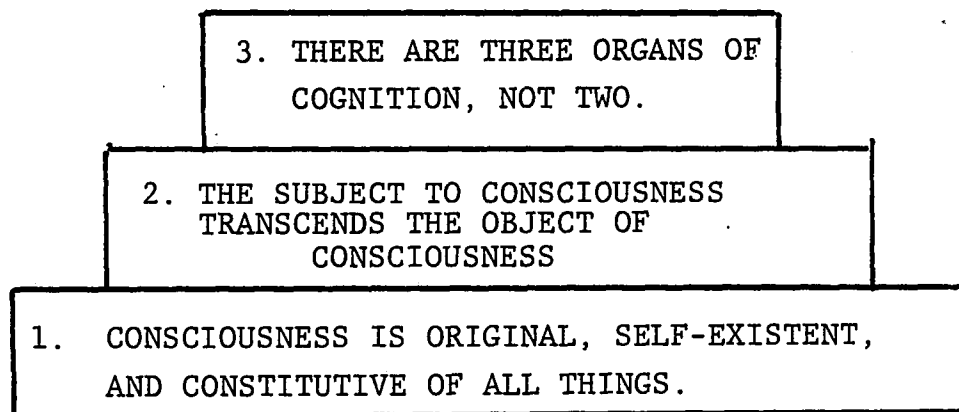


Figure 1

For the moment let us defer the discussion of the first two Fundamentals, and return to them shortly. Let me clarify what is referred to in the Third Fundamental as the "two organs of cognition" which are traditionally understood in modern psychology. The two organs are: 1. Perception., and 2. Conception.

"Perception", as defined by Dr. Wolff in chapter 6 of his book, "Introceptualism", consists of "the complex psychological manifold produced from the psychological functions of sensation, feeling and intuition."¹¹

"Conception", according to the dictionary definition, is a "general representation", or an "idea", as in mathematical concepts. But that definition won't do for Dr. Wolff. Conception has a dual nature derived from both Perception and "Introception", which are likened to "Mother" and "Father" to the offspring, the "Concept", according to the Wolffian philosophy. A whole chapter is devoted to clarifying the meaning of the term "conception", in the last of Dr. Wolff's major books, Introceptualism.¹²

The third organ of cognition posited by Dr. Wolff is the organ of "Introception." The Introceptive organ of the mind is a latent function of the brain in most humans, Dr. Wolff suggests, possibly an evolutionary addition to the other forms of cognition. The awakening of the Introceptive function of the mind forms the subject of the work called Introceptualism.

To illustrate something of the "feeling" and "flow" of Dr. Wolff's works, I am including in this essay some direct quotations from his works which I have put into "blank verse" format. The

following "poem" is entirely Dr. Wolff's own words, verbatim; all I have done is rearranged the sentences to facilitate the reading of them in a more poetic form, instead of the original prose form. This will illustrate his meaning of the three forms of cognition, Perception, Conception, and Introception. I have entitled the poem "The Pilgrim's Progress". (The poem begins on the next page):

The Pilgrim's Progress 13

The Father of consciousness is Introception,
The Mother of consciousness is Perception,
And Conception is the son of the Mother,
But the daughter of the Father.
In the life of a rising consciousness,
The homesick yearning is for
The irresponsibility and protection
Of the pure perceptual state.
The austerity of the conceptual craving
Has proven too severe;
The responsibility of conceptual thought
Becomes too great.
For when man conceives,
He builds his world.
He becomes the architect
Of his own destiny.
Oftentimes even men
Who have built much from their strength
Come to a time
When they direct the lines of their structure
So as to provide a way of return
To Mother Perception.
These are men who even
Philosophize their way back,
Forgetting their love of Sophia.

Great, indeed, must be the call of the Mother
That her sons of such maturity
Should feel so strongly
The desire of return to the womb!
For them, conception is viewed
As only instrumental to perception,
As but a philosophical apology
For the yearning for the womb.
Thus the great labor of conception
Is frustrated,
Since its first great purpose
Is to build a bridge
To the realization
Of the unknown Father.
Man has become mature
Only when he ceases to merely dream,
Whether asleep or awake.
He has become adult when,
Instead of dreaming his life away,
He conceives and builds.
To dream is the easy way;
The way that grows of itself.
To conceive and build
Is the hard way
Of mature consciousness.
It is true

That conceptual thought
Is instrumental,
But it is not true
That its total meaning
Lies in finding a way of return
To Mother-perception.
Conceptual thought is also instrumental
To the attainment
Of the Father-consciousness,
Realized through Introception.
When the Youth has gone forth
From his ancient perceptual home,
He carries with him
An inheritance which,
If used with discretion,
Will prove sufficient
To build the bridge
To the Father,
Where he will uncover
Illimitable resources.
But if he fails to make the crossing,
Then exhaustion will force him
To return to the womb,
There to gather strength
For a new trial of manhood.
That which all but a few have neglected

Is the Father of consciousness:
Introception.
Here is that which originally
Impregnated the Mother,
Then was forgotten
In the inner depths of consciousness,
And was even denied by many.
It is the return to the Father,
Not to the Mother,
Which completes the first cycle
Of the Pilgrim in his journey
To full Enlightenment.
Until mankind takes this final step,
There can be no true Peace,
But only the return
To the pre-natal stage of perception,
When there is weariness from the labors
Of conceptual creation.
This sort of return
Is a kind of failure,
Though it may be unavoidable
When weariness and weakness
Has become too great to bear.
But he who, before his powers
Have become too exhausted,

Forces the Gate of Introception,
Completes the first cycle
Of the Great Work,
And may rest,
If need be.

Franklin Merrell-Wolff
put into blank verse by
M. V. Schmitt

Now let's return to the subject of the first two of the Three Fundamentals of the Cosmology of Franklin Wolff. Reviewing the First Fundamental:

"1. Consciousness is original, self-existent, and constitutive of all things."

Dr. Wolff's insight into the fundamental nature of consciousness was derived from his "mystical experience" which he has described in his "Pathways Through to Space." In his essay on the Three Fundamentals, he has more to say regarding the First Fundamental:

"This (First Fundamental) is derivative from the final conscious stage of the Realization I have called 'The High Indifference'. It is contained in the last substantial paragraph of the discussion of the High Indifference in the volume Pathways Through to Space. This paragraph is the most important in the whole book, and the last sentence of that paragraph is the most important. I shall repeat it to bring it back to your memory:

'I am moved about in a kind of space that was not other than Myself, and found Myself surrounded by pure Divinity, even on the physical level when I moved there. There is a sense in which God is physical Presence as well as metaphysical, but this Presence is everywhere and in everything, and at the same time the negation of all this. Again, neither I nor God were there, only Being remained. I vanished, and the object of consciousness vanished in the highest, as well as inferior senses. I was no more,

and God was no more, but only the Eternal which sustains all Gods and all selves.'¹⁴

This is the culminating point of that whole journey in consciousness which was reported in Pathways Through to Space. It produced a revolution in my personal philosophic thought. Perhaps the implications of this paragraph have failed to attract the attention of the reader, but they are of the most fundamental sort. First of all, bear in mind that at this particular stage of consciousness, the whole of the world, or the universe of objects, was known in an interior or higher sense. They were not any longer purely secular objects of our experience, which consists of the mountains and valleys, the rivers and lakes, the buildings, cities, railroads, and beyond this the celestial objects, the planets, stars, galaxies; all of this, including in the subtler sense the objects of thought, that which we call our conceptual world. All of these objects had gone through a transformation so that their nature was Divinity Itself. They are no longer secular, they are all Divine. And the Self which is the subject of all our cognitions, had also been transformed into its innermost meaning, that which is suggested by the Sanskrit term, 'Param-Atman'. "¹⁵

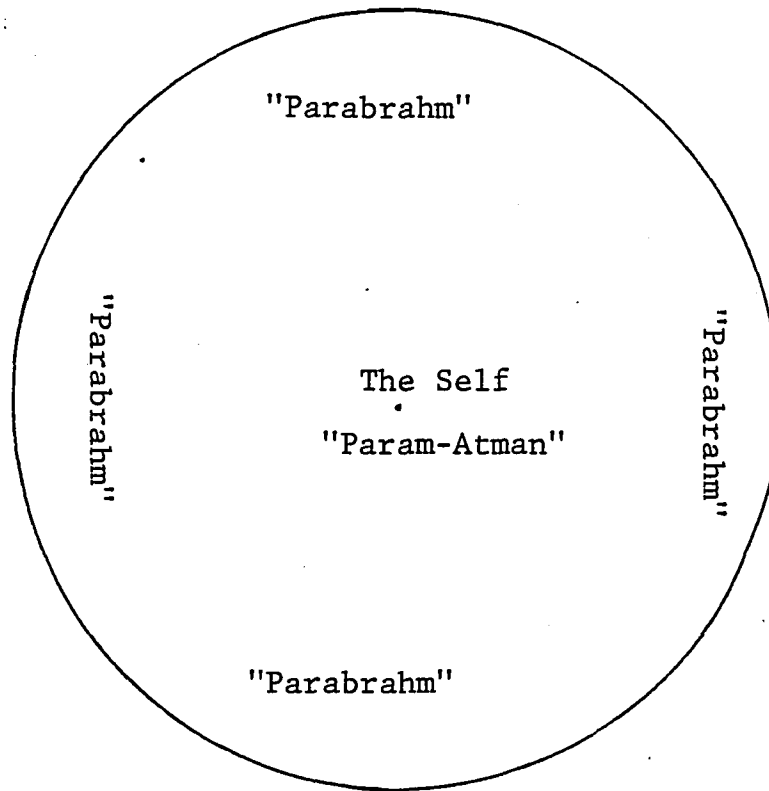


Figure 2

At the highest point of his mystical experience, Dr. Wolff discusses the union of the ontological subject with the object. If we may be allowed the ability to symbolize the "All", or "Brahman" as a circle (I realize that all symbols of the Transcendent are false, and that the "map is not the territory", but please bear with me a moment), and the Self, or subject of individual awareness as a point, we arrive at the diagram above (Figure 2). Dr. Wolff describes this mystical state in this way:

"We might just say that all that was there was Param-Atman,

as the eternal underlying ontological subject, and the Parabrahm as the eternal underlying object.

I am God, or All, and these two have been known through a fundamental realization as essentially identical, but viewed from different perspectives. Now what that paragraph affirms is that at this highest point of the development of the Fifth Realization, the object of consciousness in this highest sense, which is identical with the Divinity of Parabrahm, and also the ultimate and eternal subject, the Paratman, vanish in a more fundamental 'somewhat', which I called in Pathways the Eternal, but which I have since developed as the essential pure Consciousness, not in our ordinary sense in which we conceive of consciousness as a relationship between a knower and a known, but as a consciousness which pre-exists the knower and the known; the knower and the known being derivative, the Consciousness, the original and eternal Reality, that which is not created, not made, not constructed, not in any sense derived from something more ultimate, but as the ultimate in so far as we conceive it in the deepest level of our apprehension." ¹⁶

That is how the First Fundamental was derived, from direct mystical insight. The Second Fundamental of the Philosophy considers the "polar" nature of the relationship between subject and object, with primacy given to the subject, or the "I" of the Self which is aware of the object of consciousness. The following description of this fundamental relationship in our normal waking consciousness, which Dr. Wolff calls the "subject/object" consciousness (or "dualistic consciousness") is taken from his second volume, The Philosophy of Consciousness-Without-an-Object:

"As I assert the dependency of all contents upon Consciousness-without-an-object, so likewise do I affirm the concomitant dependency of the Self and all selves, because the existence of a self implies the existence of objects, whether subtle or gross, and as well, the existence of objects implies the presence of a self that is aware of them. The object and the self are polar existences that are inter-dependent." ¹⁷

To illustrate this concept, I have drawn the subject and object of consciousness as two "poles", or pillars which are supported by the Three Fundamentals in the following diagram:

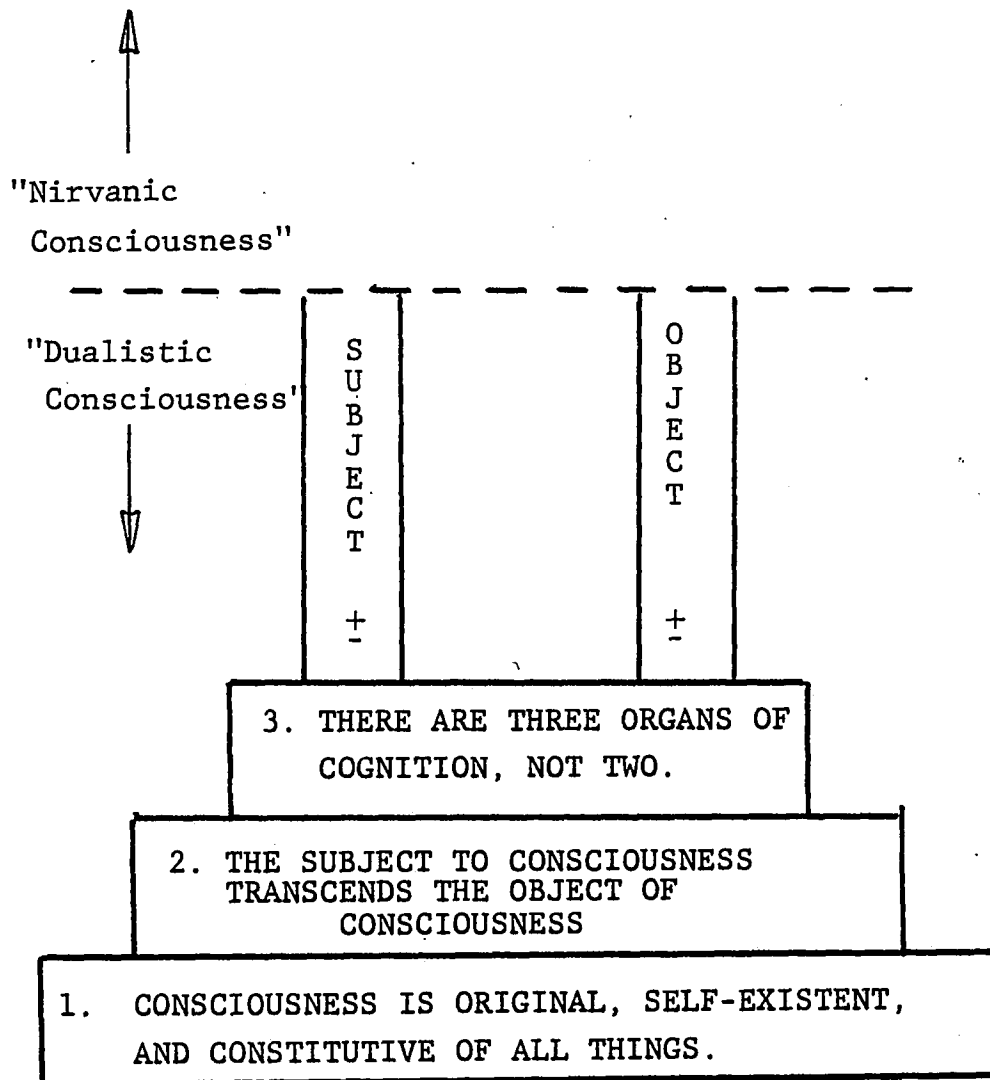


Figure 3

In figure 3, I have attempted to illustrate only what has been revealed thus far by the verbal description given by Dr. Wolff regarding the fundamentals of his cosmology. We are shown the subject to consciousness and the object of consciousness, standing in a "polar" relationship, supported by the Three Fundamentals. To this polar dichotomy I have added the sign labels of + and - to each pole, indicating the polar nature of all dualities, regardless of whether each pole is "positive" or "negative", or "North" or "South", or even "Yin" or "Yang", for the moment.

The dotted Line of Demarcation between the "Dualistic" and the "Nirvanic" consciousness is, in a sense, the "limit" imposed upon purely dualistic thinking. Dr. Wolff has much more to say regarding this Line of Demarcation, in terms of a "mathematical limit", beyond which the unaided intellect cannot reach.¹⁸ It should be pointed out from the start that Dr. Wolff's philosophy is one of Transcendence. In his mystical experience (or rather "imperience", another term he has coined, indicating an inward, not an outward experience) he has transcended the limitations of dualistic thought, and in his own words, offers a contribution to what might be termed a "Transhumanism" philosophy.¹⁹

The realm of "Dualistic consciousness", or "Subject/Object" consciousness is often referred to by Dr. Wolff as the "Sangsaric" realm, which is a more familiar term to the students of the Eastern philosophies, such as Buddhism or Brahminism. The "Nirvanic"

consciousness is in the realm of the "Transcendent" consciousness. It is the realm in which the distinction between the Subject and the Object, in some sense, "disappears". In the following passage from the Philosophy of Consciousness-Without-an-Object, Dr. Wolff describes the relationship of "Nirvanic" consciousness to "Sangsaric" consciousness:

"Nirvana stands as a phase of consciousness standing in contrapundal relationship to the sum total of all Sangsaric states- the consciousness behind the Self that is focused upon objects. It is the 'other' of all consciousness of the subject-object type."²⁰

For the purposes of developing the step-by-step unfoldment of the cosmology of Dr. Wolff, I have drawn in figure 4 the "joining" of the subject and object, in the form of an "archway". But still the figure is incomplete. There is yet another level of consciousness which transcends even Nirvana, just as Nirvana transcends Sangsara. Dr. Wolff penetrated into a realm of consciousness which transcends all polarities, including the polar relationship of Nirvana and Sangsara, indicating that it is of an even more fundamental nature than either of these. He describes it as pure "Consciousness-Without-an-Object", and refers to it in his writings as the "Capstone", or "Keystone" of his philosophy. In his own words, Dr. Wolff says:

"Consciousness-Without-an-Object is the keystone that completes the arch. It is the final step necessary to produce a self-contained system of consciousness."²¹

In the text, he continues the development of this concept:

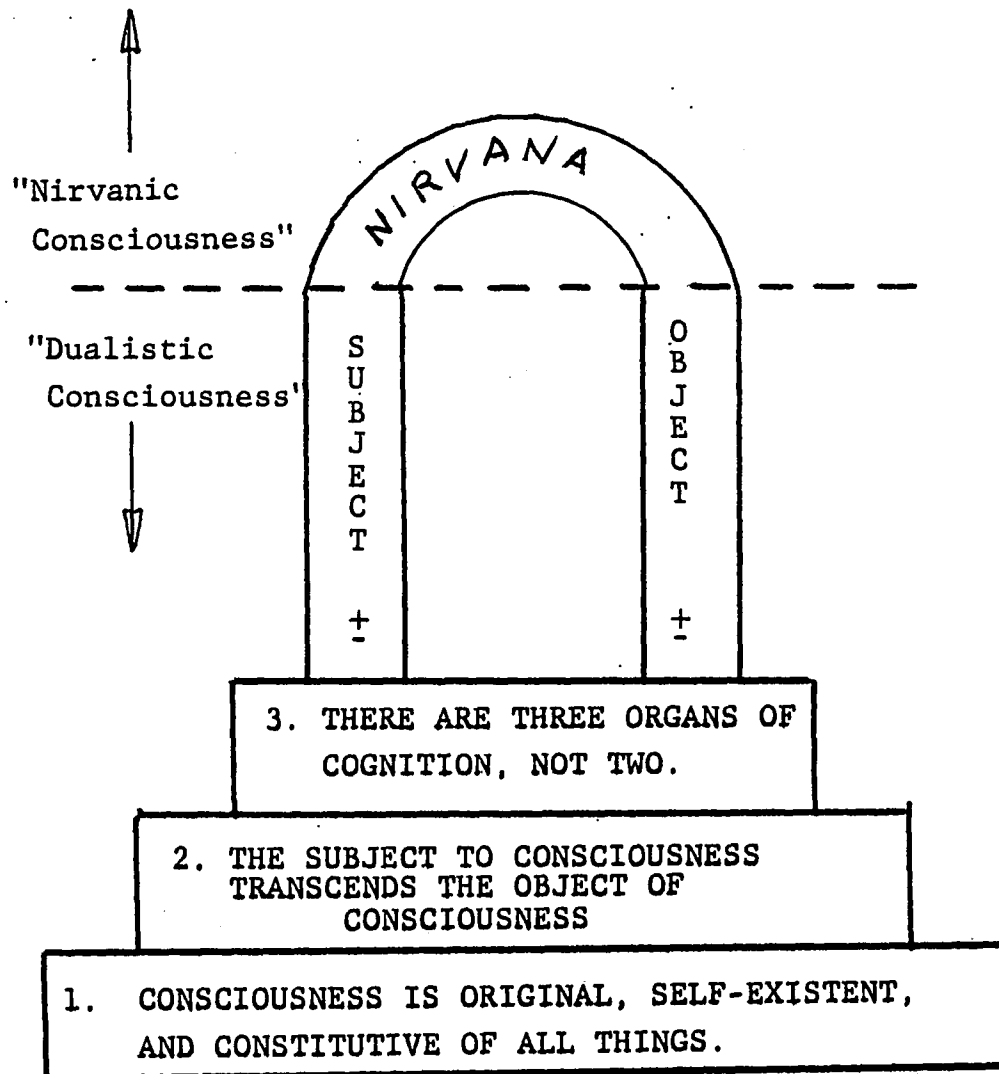


Figure 4

"But the predication or realization of any state and its other, in discrete stages, is not a complete cycle, for the two imply a mutual container. This mutual container is found in Consciousness-Without-an-Object, and this latter affords a base from which Nirvana, as well as Sangsara, falls into comprehensive perspective. Consciousness-Without-an-Object is neutral with respect to every polarity and thus in principle gives command over all polarities. It affords the basis for a philosophic integration that is neither introversive nor extroversive. This implies a philosophy that, as a whole, is neither idealistic, in the subjective sense, nor realistic, but which may incorporate both idealistic and realistic aspects. It should be equally acceptable to religious and scientific consciousness."²²

To complete the symbolic representation of the components of the cosmology, I have drawn "Consciousness-Without-an-Object" as an actual "Capstone" completing the Archway, shown in Figure 5. Since it is merely a symbolic representation of a consciousness which is of such a fundamental nature that it serves as the culmination of the mystical insight of Dr. Wolff's philosophy and also the "mutual container" of both the Sangsaric and Nirvanic levels, the reader should be immediately aware of the identical nature of the consciousness symbolized by the Capstone and the First Step (the Foundation Stone) of the Wolffian Cosmology. Pure Consciousness-Without-an-Object is the "root" consciousness which is 'original, self-existent, and constitutive of all things'.

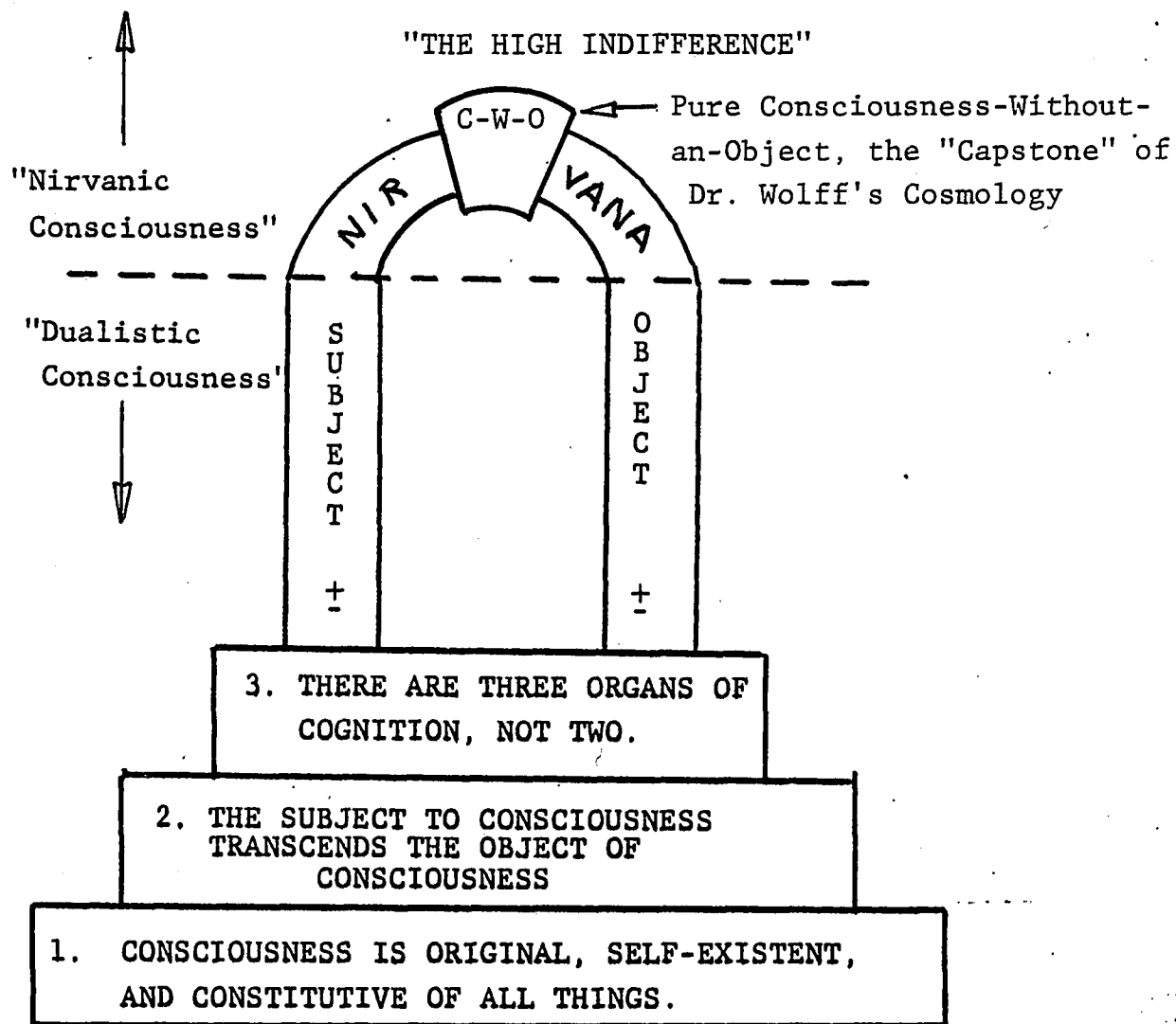


Figure 5

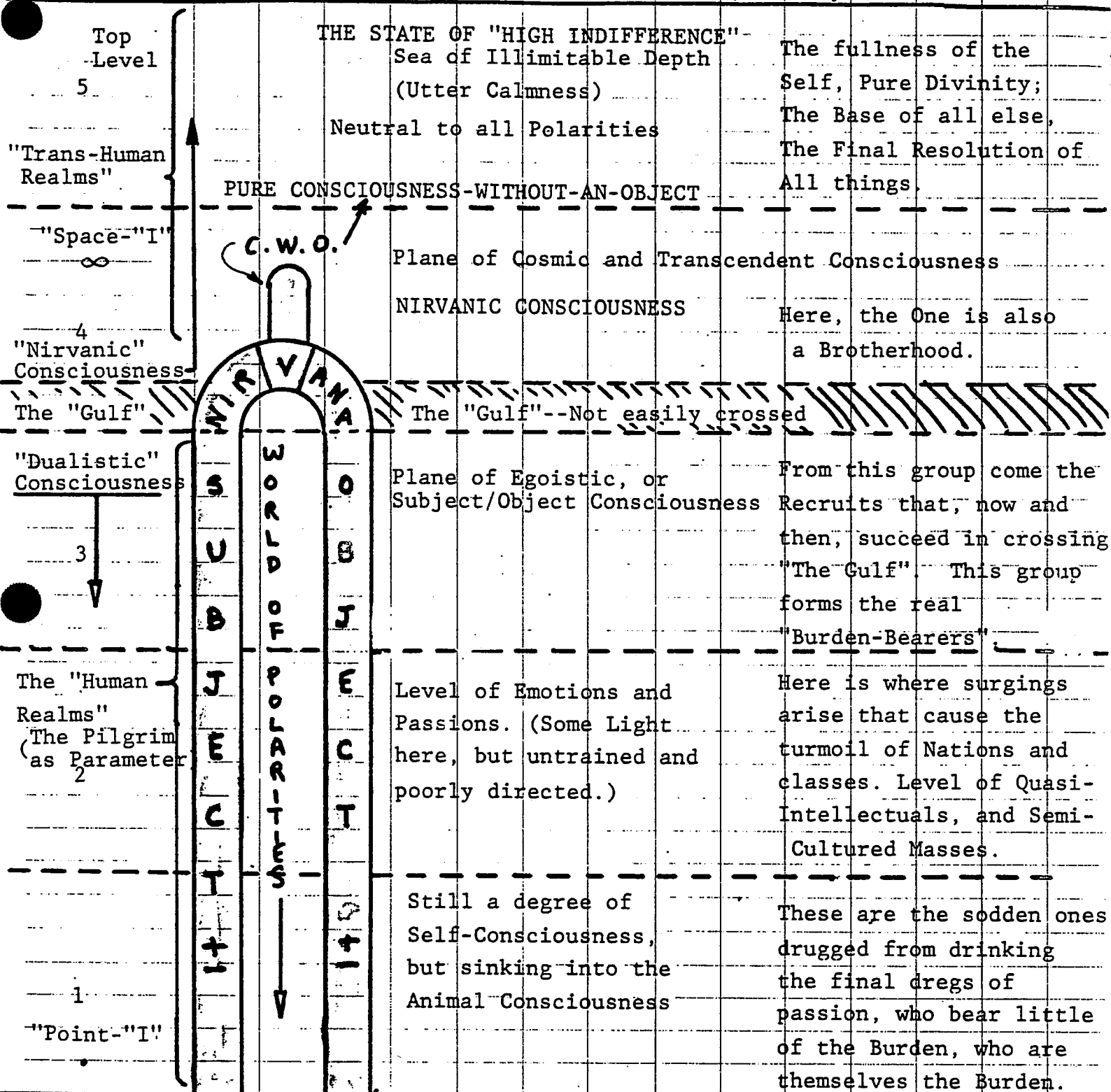
So far we have traced the development of the Wolffian cosmology from its "Foundation Stones" to the Subject/Object relationship, the resolution of the polar opposites in Nirvanic Consciousness, and the "Capstone" concept of pure Primordial Consciousness-Without-an-Object, which is beyond all polarities. In his mystical transformation of consciousness, Dr. Wolff penetrated into a realm he calls the "High Indifference", which will be explored further at another point in this essay. The "High Indifference" is included at a point overarching the Capstone of "Consciousness-Without-an-Object", shown in Figure 5.

There is yet one more fundamental concept which must be added to the Wolffian Cosmology beyond what has been revealed in Figure 5, in order to complete the self-consistency of the whole. That additional concept is the concept of the "Hierarchy". Included in the world-view of Franklin Wolff is an underlying Hierarchy of Consciousness levels which he calls the "Great Sea of Consciousness". Dr. Wolff describes each level of the Great Sea in detail in Chapter XXVI of Pathways Through to Space, but I have summarized its essential features in the drawing labeled Figure 6.

There are five "levels" or "realms" in the Sea of Consciousness described by Dr. Wolff. Three of the Levels are in the "Dualistic" realm, and two Levels are in the "Transcendent" realms of Consciousness. Onto the background of the five levels of the Great Sea I have "superimposed" the symbol of the subject/object poles joined by an archway, which has been previously discussed.

"SEA OF CONSCIOUSNESS":

(Drawn by M. V. Schmitt)



	State of Low Indifference (Depression)	
--	-------------------------------------------	--

FIGURE 6

Now let's examine the most important features of this Hierarchy, since it reveals the relationship of consciousness to Ponderable Matter, which is crucial to the understanding of the interrelationships of the "New Physics" to the philosophy of Dr. Franklin Merrell-Wolff. Beginning with Level One, the human consciousness is seen emerging from the merely "animal" consciousness (which symbolically would be placed at the lower strata of Level One). The singular characteristic which humans possess, which other animals do not appear to possess is what is called "Self-consciousness." Humans have evolved to the point of becoming "Self-aware", which Dr. Wolff thinks is what makes us distinctly different from the other animals (and plants and minerals). As an aside, the case could be made for certain animal forms, such as the Dolphins and Whales, and perhaps other mammals possessing the quality of "Self-awareness", as in the research done by Dr. John C. Lilly and others, but this would be a digression from the topic at hand. Figure 6 is focusing on the primarily "human" levels of consciousness, with the biological and "atomic" levels supporting the first three divisions of the chart.

The Line of Demarcation separating the Dualistic, or Subject/Object realms from the "Trans-human", or "Transcendent" realms is symbolized by the dotted lines referred to as the "Gulf". This "Gulf" represents the limit of the merely "Subject-Object" form of rational thought, beyond which the unaided intellect cannot rise. There is a "Bridge" however, connecting the upper two levels with the lower three levels, which Dr. Wolff has called the "Bridge of Introception," which a few individuals in history have taken

successfully as a means to the Transcendent realms of Higher Consciousness. This "Bridge" is not shown on this diagram, but it will be discussed again later in the essay.

At Level One we see a reference made to consciousness as a "Point-I". This represents the state where the human consciousness has focused its powers of awareness exclusively on an object to consciousness, which could include the subject's own body, or any aspect of it (such as a toothache, for example) almost to the point of identifying one's whole consciousness with the object of consciousness. That kind of "Narrowing" of the consciousness toward an object (however subtle that object may be) is what Dr. Wolff means by the "Point-I" of human consciousness.

As we ascend the ladder of the Hierarchy, it is possible to expand one's consciousness from the "Point-I" all the way up to the "Space-I", seen at Level 4 of the diagram of Figure 6. The "Space-I" could be symbolized by the symbol for "Infinity"(∞), since the "I" has become expanded and diffused throughout the whole of space at that level of consciousness.²³

At this point it might prove helpful to clarify some of the differences between the consciousness levels below the Line of Demarcation (i.e., the "Gulf"), and those levels above that Line. In his essay entitled "Mathematics, Philosophy and Yoga", written Nov. 17, 1966, Dr. Wolff describes these differences in his own words:

"First of all, the consciousness which we call Dualistic (shown below the Line of Demarcation), we may call 'granular', or moving in terms of a manifold. Now these are terms that are going to be more intelligible to the mathematicians than perhaps to the generality of people. But by 'manifold' I might suggest this, the ordinary natural numbers 1,2,3,4, and so on, with no end to it. One number is next to the other. Three is next to two, and also next to four, and when you have a collection or aggregate of that sort, we call it a 'manifold', or 'granular' structure, because they are just like grains of sand, each grain separate from the other grains. There is a grain next to a given grain. Now there are other entities which we call the 'continua', in which this is not true."

Dr. Wolff next proceeds to describe the nature of the "Continuum", which is symbolized in Figure 6 as that area above the "Gulf", or the "Line of Demarcation":

"I suggest this (regarding the nature of a 'continuum') by supposing that we take not only the integers, but all the fractions between 1 and 2, and so on, also numbers of the form of 'a' over 'b', where 'a' and 'b' are integers, and all numbers of the form like the nth root of 'a', which sometimes will be reduced to an integral form, or a combination of an integer or fraction, but most commonly gives us what is known as 'irrational' numbers, like the square root of 2, which you can never write down in any complete form-1.41...-etc. It requires an infinite number of decimal places to write it down exactly. It is a new class of number called 'irrational'. Now, you can say that this number is greater than that but less than some other number that might follow. You can pin it down to a given area, but you cannot make it come out to an exact determination. Now suppose you write a series with all the fractions that come in here, and all the numbers of this 'irrational' sort. There would be no two numbers next to each other. Between any two numbers that you would pick out, there would be an infinity of other numbers. This is characteristic of what we call the 'continuum'. It is a concept that is very important in the calculus."

Using the mathematical analogy just described, Dr. Wolff points to other features of the "Continuum":

"Now use the conception of the continuum as suggesting something of the consciousness above this line(of Demarcation). Nothing here is granular. Everything flows, as it were. This is used a great deal in connection with the analysis of motion, something where you do not have discrete steps as indicated in the system of integers. Those who have studied mathematics will understand me a good deal better, to be sure, but I am talking for the intellect especially. Below the Line, we move in discrete steps. Below the Line, the essence of the consciousness, or the essential part of it is: "I, different from you, 'I', different from everyone else." Above this Line is a sense of 'flow'. To each part there is a continuous flowing. Now I could use that symbol, because the experience of that consciousness on the other side is of a 'flow'. It seems like a flow of consciousness without discrete parts. You cannot classify it into compartments. Everything tends to flow into everything else. There is an order in it, but that would not be surprising to those of you who know mathematics, because there is an order in the analysis of the continuum. But it is not this primitive order, the order that belongs to the elemental logic. It is a different kind of logical process from that which applies in ordinary finite relationships, but it is orderly, nonetheless." 24

The distinctions between the "Continuum" and the "Manifold" are very important, as we begin to explore the nature of Ponderable Matter with regard to the discoveries made in the "New Physics". In an effort to illustrate the dynamic and vibratory nature of the "Manifold" realm, I have drawn the two poles of the Subject/Object dichotomy, joined by an archway at the top in the image of a "Tuning Fork", which retains all the essential features described in the Fundamentals of the Wolffian Cosmology which we have previously discussed. The "Tuning Fork", however, has the added dimension of suggesting the dynamic nature of the qualities inherent in the Manifold universe. That is, the vibratory, wavelike properties of everything in the world of the Manifest, or "Subject/Object" world

composed of what we call "matter". Above the poles of the Tuning Fork, we find the non-vibratory realm of the Continuum, where there is only the continuous 'flow'. We could say that the "Trans-Human" levels (Levels 4 and 5) represent the "unmanifest" realms of Being, whereas the lower three Levels (Levels 1, 2, and 3) represent the realms of "Becoming", where everything is constantly in a state of flux, ever-changing its form into a different form. There are certain conclusions from this perspective which should be pointed out at this time. The realm of the "atomic", dealing with inanimate matter would be at the bottom of Level One in the Hierarchy, rising in complexity to form the biological life-forms composing Levels two and three, but no higher. This defines the proper domain of the "Empiric" world of the Sciences, or the world of "Objective" reality. Dr. Wolff states that this realm does possess a kind of "reality", but it is only "relatively real", in his view. In other words, the "Dualistic" realms are subject to the laws of Time and Space and Causality, whereas the realm of the Continuum transcends the limitations imposed by Time, Space, and Causality, suggesting a kind of Immortality based on Consciousness as an eternal and underlying principle.

Next I would like to examine the nature of "Ponderable Matter" as seen by the leading physicists of today, and in the light of Dr. Wolff's insights on this subject. To begin the investigation of the nature of matter, I would like to cite the words of Professor Paul Davies, Professor of Theoretical Physics at the University of Newcastle:

"The apparently concrete world around us is seen to be an illusion when we probe into the microscopic recesses of matter. There we encounter a shifting world of transmutations and fluctuations, in which material particles can lose their identities and even disappear altogether. Far from being a clockwork mechanism, the microcosm dissolves into an evanescent, chaotic sort of place in which the fundamental indeterminacy of observable attributes transcends many of the cherished principles of classical physics. The compulsion to seek an underlying lawfulness beneath this subatomic anarchy is strong, but, as we shall see, apparently fruitless. We have to face the fact that the world is far less substantial and dependable than envisaged hitherto." 25

A similar conclusion reached by another physicist, Henry Stapp, Ph. D. at Lawrence Berkeley Laboratory bears repeating here:

"If the attitude of quantum mechanics is correct, in the strong sense that a description of the substructure underlying experience more complete than the one it provides is not possible, then there is no substantive physical world, in the usual sense of this term. The conclusion here is not the weak conclusion that there may not be a substantive physical world, but rather that there definitely is not a substantive physical world." 26

Another rather startling statement regarding the insubstantial nature of "atomic matter" also reveals the interconnectedness of the subject to the object of his "experiments" with nature, found in the writings of Dr. Fritjof Capra, Professor of High-Energy Physics at the University of California, at Berkeley:

"A careful analysis of the process of observation in atomic physics has shown that the sub-atomic particles have no meaning as isolated entities, but can only be understood as interconnections between the preparation of an experiment and the subsequent measurement. Quantum

theory thus reveals a basic oneness of the universe. It shows that we cannot decompose the world into independently existing smallest units. As we penetrate into matter, nature does not show us any isolated 'basic building blocks', but rather appears as a complicated web of relations between the various parts of the whole. These relations always include the observer in an essential way. The human observer constitutes the final link in the chain of observational processes, and the properties of any atomic object can be understood only in terms of the object's interaction with the observer. This means that the classical ideal of an objective description of nature is no longer valid. The Cartesian partition between the 'I' and the world, between the observer and the observed, cannot be made when dealing with atomic matter. In atomic physics, we can never speak about nature without, at the same time, speaking about ourselves."²⁷

Now let's see what Dr. Wolff had to say regarding the nature of "Ponderable Matter", as he wrote in 1936, shortly after his "Recognition" experience described in his book, Pathways Through to Space:

"Genuine philosophers concur in holding that whatever the real world may be, it is at least modified by the senses so that what man directly experiences is something different. Also, for the twentieth century physicist, ponderable matter, that is, matter and form as given through the senses, is definitely known not to be the actual physical reality. The ultimates of matter are apparently wave-systems of essentially the same nature as electromagnetic or light waves; and further, these systems cannot be correctly imagined in any sensible model. Only mathematical equations are capable of representing the reality, whatever that may be, in a manner that is consonant with the observed effects."²⁸

Dr. Wolff points out that his philosophy is at variance with both the schools of "Naturalism" and "Neo-Realism", in which consciousness is regarded as being irrelevant to "Actuality".

In the view of both these philosophies, "things" are regarded as being what they are, quite independently of any observer or thinker. In the following passage taken from Pathways, Dr. Wolff shows quite clearly how his perspective differs from the "Naturalist" and the "Realist":

"Now one decisively important consequence of this standpoint is that the experienced universe, including all ponderable matter and form, is essentially an abstraction from, rather than an addition to, the original Unmanifested Reality. Starting from an original and eternal non-relativistic consciousness, which comprehends Time and Space as well as all else, all notions such as external manifestation and development must be in the nature of a predication concerning something abstracted or subtracted from the Whole. Among other things, it is clear that nothing can be predicated of the Whole which necessarily presupposes the dominance of Time, as for example, process or development. The Whole, since It comprehends both Space and Time, is not conditioned by these. In the end, we find that no relative concept-and all concepts are relative- can be predicated of the Whole, not even Being. In fact, It is That which is neither Being nor Non-Being, and thus remains essentially unthinkable, though It may be Realized through the Awakening to Identification." 29

Thus Dr. Wolff was led to a reversal of the normal, "Scientific" way of regarding matter as the final "substantial" reality.

Continuing in Dr. Wolff's own words:

"This leads to the judgement that ponderable matter and form constitute a state of relative vacuity or nothingness in the essential sense. It is interesting to note that we are now not far from a position formulated by the young English physicist, Dirac, though he realized this view by means of a quite different approach." 30

But it would be wrong to conclude that Dr. Wolff's position was that of an adversary against the views taken by the Scientists. If, indeed, there was a "quarrel" between the physicists and Dr. Wolff, it has resolved itself into that of a "Lover's Quarrel", as may be seen in the following statements by Dr. Wolff:

"...since 1896, physics has laid the foundation for mysticism with a vengeance..."³¹

Also note the similar idea is found in Pathways:

"I can see how our present physical science is unfolding a peculiarly beautiful Path to Yoga. So I certainly have no quarrel with physical science as such. In fact, I feel quite otherwise."³²

To summarize his view regarding the relationship between Substantiality and Ponderable Matter, Dr. Wolff expressed it finally in the form of a mathematical equation: " $S=1/P$ ", where S= Substantiality, and P= Ponderability. Or, in plain English, "Substantiality is inversely proportional to Ponderability". His reasons for the reversal in the "normal" valuation of Substantiality may be found in the following quotation from Pathways:

" Thus, instead of regarding the sensuously apparent as being substantial, the standpoint should be reversed. Then we would view the seeming emptiness of space, where there is a relative absence of physical matter, as being

actually far more substantial than any ponderable matter. We should thus say: 'Increase of ponderability implies decrease of substantiality, and vice versa.' Consequently, in some sense, the laws governing the ponderable become the obverse of the laws governing the substantial."³³

To further clarify the point, Dr. Wolff gives us an example of extremes which involve the phenomenon of "Black Holes" found in certain regions of outer space:

"It suddenly dawned upon me that when we see objects like trees, mountains, human beings, etc., we see a relative absence of substance. In other words, empty space is a plenum, and the apparently substantial objects, like this room and all the objects around it, are relative voids. I use the term 'relative' rather than 'absolute', because there is a difference of density, and thus if you took a 'nuclear sun', which we would regard as the most compact mass of matter imaginable, we would find that the total mass of a sun like that of our Earth's is compacted until it is only about 12 miles across. The nuclei are virtually packed tight together, yet it retains the same mass as the full-sized sun. Ultimately they are called "Black Holes in space", which is rather astonishing, for that would be just my interpretation of them as being essentially voids. I would say that a nuclear sun was very nearly a complete absence of substance, and that a very subtle thing- like the robe of the Dharmakaya, which is said to be likened to a 'breath'- is actually quite substantial. This reverses our ordinary orientation. This implies that space, which seems to be empty, is where the substance is, and the objects in it, which attract our attention, are relative voids, not all of them to the same degree of voidness, but the most void one would be the 'nuclear sun' (or 'Black Hole'), and the least void one would be the Dharmakaya robe."³⁴

The implications which follow from this reversal (of the traditional primacy given to ponderable matter to the possibility that Space and the "Void" is where the "substance" is to be found) are enormous. What is space filled with? According to

Dr. Wolff, space is full of Consciousness, pure Primordial Consciousness!

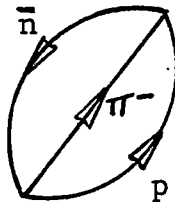
This leads us into the next topic of much concern to the physicists, and to all thinking human beings who are interested in the exploration of higher levels of consciousness: the concept of the "Fullness of the Void", an important part of the Cosmology of Franklin Wolff. In his work, The Philosophy of Consciousness-Without-an-Object, the following description of the "Primordial Consciousness" is given:

"The Primordial Consciousness cannot be described as conceptual, affective, or perceptual. It seems that all these functions are potentially There, but the Consciousness as a whole is a blend of all these and something more. It is a deep, substantial, and vital sort of consciousness, the matter, form, and awareness functions of consciousness all at once. It is not a consciousness or knowledge 'about', and thus is not a field of relationships. The substantiality and the consciousness do not exist as two separable actualities, but rather it would be more nearly correct to say that the consciousness is substance and the substance is consciousness, and thus that these are two interpenetrating modes of the Whole. It is certainly a richly 'thick' consciousness and quite other than an absolutely 'thin' series of terms in relation." 35

(Note: the italics are mine-M.S.)

Dr. Wolff sees the "Void" (which is filled with Consciousness-Without-an-Object) as a "Plenum", or "Matrix" serving as the substrate from which all matter, as well as Time and Space are derivative. As we shall see, the subject of the nature and properties of what scientists refer to as "the vacuum", or 'empty space' has become the topic of much debate among the particle physicists. Some very strange and exciting things are

happening in their experiments which they are finding difficult to explain. One of these mysteries involves a "Feynman Diagram" of a three-particle interaction:



"Feynman Diagram"

Figure 7

The description of this interaction is given by Gary Zukav, in his book on the "New Physics" called The Dancing Wu Li Masters:

"In this diagram (Figure 7) no world line leads up to the interaction and no world line leads away from it. It just happens. It happens literally out of nowhere, for no apparent reason, and without any apparent cause. Where there was no-thing, suddenly, in a flash of spontaneous existence, there are three particles which vanish without a trace. This type of Feynman Diagram is called a 'vacuum diagram'. That is because the interactions happen in a vacuum. A 'vacuum', as we normally construe it, is a space that is entirely empty. Vacuum diagrams, however, graphically demonstrate that there is no such thing. From 'empty space' comes something, and then that something disappears again into 'empty space'.

In the subatomic realm, a vacuum obviously is not empty. So where did the notion of a completely empty, barren, and sterile 'space' come from? We made it up! There is no such thing in the real world as 'empty space'. It is a mental construction, an idealization, which we have taken to be true."³⁶

So it is beginning to appear that some physicists believe that it is the substance of this "Nothingness" or 'Void' we have been discussing which is the true basic "Building Block" of matter!

To the physicist Professor John A Wheeler, matter is nothing more than empty, curved space. He states his view in the following passage:

"There is nothing in the world except empty curved space. Matter, charge, electromagnetism, and other fields are only manifestations of the bending of space. Physics is geometry."37

To Professor Wheeler, the "nothingness" of space can be seen as composed of fundamental building blocks. If we could examine it microscopically, we would find that the fabric of space-time or "superspace" is composed of a turbulent sea of "bubbles". These "bubbles" are the warp and weft of empty space and comprise what Wheeler calls the "quantum foam". Wheeler states:

"The space of quantum geometrodynamics can be compared to a carpet of foam spread over a slowly undulating landscape... the continual microscopic changes in the carpet of foam as new bubbles appear and old ones disappear symbolize the quantum fluctuations in the geometry."38

As if that weren't dramatic enough by itself, Dr. David Bohm, in an interview by Dr. Rene Weber, published in The Holographic Paradigms, edited by Ken Wilber, has intimated that "empty space" is not only not "empty", but is in fact full of an immense energy background which is "untapped", or "unmanifest." The following excerpt is taken from this interview:

"Bohm: ... if you then compute the amount of energy that would be in space, with that shortest possible wavelength, then it turn out that the energy in one cubic centimeter would be immensely beyond the total energy of all the known matter in the universe.

Weber: In one cubic centimeter of space?

Bohm: Yes. And therefore, how is one to understand that?

Weber: How do you understand it?

Bohm: You understand that by saying: the present theory says that the vacuum contains all this energy which is then ignored because it cannot be measured by an instrument. The philosophy being that only what could be measured by an instrument could be considered to be real, because the only point about the reality of physics is the result of instruments, except that it is also said that there are particles there that cannot be seen in instruments at all. What you can say is that the present state of theoretical physics implies that empty space has all the energy, and matter is a slight increase of the energy, and therefore matter is like a small ripple on this tremendous ocean of energy having some relative stability, and being manifest. Now, therefore, my suggestion is that this implicate order implies a reality immensely beyond what we call matter. Matter itself is merely a ripple in this background.

Weber: In this ocean of energy, you are saying.

Bohm: In this ocean of energy. And the ocean of energy is not primarily in space and time at all. We haven't discussed time yet, but let's discuss space. It's primarily in the implicate order.

Weber: Which is to say unmanifest, not manifest.

Bohm: Right. And it may manifest in this little bit of matter.

Weber: The ripple.

Bohm: The ripple, you see.

Weber: But the source or the generative matrix, you're saying, is in the implicate order, and that's this ocean of energy, untapped and unmanifest.

Bohm: That's right. And in fact beyond that ocean may be still a bigger ocean because, after all, our knowledge just simply fades out at that point."39

To summarize the key features of the "New Physics" which have been outlined by the leading physicists such as Professor Bohm, Professor Capra, and Professor Davies, matter is seen not ultimately substantial; there is a higher order (of an "Implicate Order") which acts as a matrix, or a "Plenum", from which matter and time and space are all derivative; there is a Wholeness which includes and the observer as fundamental parts of a "participatory" universe; and the "Holographic Paradigm" which is emerging from the research on the human brain (which has not been discussed yet in this work), which suggests that the brain may operate in a "holographic", quantum/wavelike manner.⁴⁰

From the standpoint of the unifying substrate of Dr. Wolff's "Consciousness-Without-an-Object, I believe he has foreshadowed each of these concepts of the "New Physics" in his "Aphorisms on Consciousness-Without-an-Object", described in his second major volume, The Philosophy of Consciousness Without an Object . Dr. Wolff wrote a total of 56 "Aphorisms", which serve as "seed thoughts" for meditation, and also contain some profound statements of Dr. Wolff's cosmology.

Only certain Aphorisms will be referenced here, based on their relevancy to the subject of the "New Physics". Dr. Wolff himself rewrote the Aphorisms 1,2,3,4,5, and 11 especially to illustrate the Energy-relationships to the physicists and scientists. I will list them here for the purpose of comparison with the re-written form:

"Aphorisms on "Consciousness-Without-an-Object"

by Franklin Merrell-Wolff:

- " 1. ...Consciousness-without-an-object is.
2. ...Before objects were, Consciousness-without-an-object is.
3. ...Though objects seem to exist,
Consciousness-without-an-object is.
4. ...When objects vanish, yet remaining through all unaffected,
Consciousness-without-an-object is.
5. ...Outside of Consciousness-without-an-object
nothing is.
11. ...Within Consciousness-without-an-object
lie both the Universe and Nirvana,
yet to Consciousness-without-an-object
these two are the same." ⁴¹

These first few aphorisms reveal the key relationships of consciousness-without-an-object to objects and the Universe. Dr. Wolff uses them as vehicles to explain the relationships between "Energy", "Radiant Energy", and the Universe of Ponderable Matter. Here is how Dr. Wolff develops his explanations:

"Modern physics and astronomy have developed a speculative conception that is, in some respects, an inverse reflection of the view elaborated here. This interpretation is derived from certain facts that have come to light in recent decades, partly as the result of progress in interpretative theory.

It now appears, quite clearly, that the older conception of matter as being composed of unchanging and indestructable atoms does not faithfully interpret the facts derived through experience. It has become necessary to conceive of the atom as composed of still finer units, such as electron, proton, positron, and so forth, and these in turn as being subject to transformation under the appropriate conditions. When the transformation takes place it appears that ponderable matter assumes a state of radiant energy."⁴²

Next, Dr. Wolff offers what may be the common "invariant" present throughout these transformations:

"...the two notions of conservation of mass and of energy must be united into the conception of a persistent Energy which may appear in the forms of either ponderable mass, or of field energy, the latter including that which is termed radiation.

The above conceptions leave us with but one constant or 'invariant', i.e., Energy, which may appear at certain times as ponderable matter, and at others as transformed into the state of radiant energy. If now we substitute for 'Consciousness-Without-an-Object' the notion of 'Energy'; for the 'Universe'-in the sense of all objects- the notion of 'Ponderable Matter'; and for 'Nirvana', the notion of 'state of radiation', we can restate our first aphorisms as follows:

- 1.... Energy is.
- 2.... Before ponderable matter was, Energy is.
- 3.... Though ponderable matter seems to exist, Energy is.
- 4.....When ponderable matter vanishes, yet remaining through all unaffected, Energy is.
- 5.....Outside of Energy there is no matter.
- 11....Within Energy lie both ponderable matter and radiant energy, yet for Energy these two are the same.

This physical conception has a high order of theoretical beauty, and I regard it as one of the finer products of scientific art. It effects a very great conceptual simplification, and enables us to picture a wide range of transformation in nature as experienced within the organization of an essentially simple unifying concept." ⁴³

These aphorisms suggest the interdependent relationships of Ponderable Matter, Energy, and Radiant Energy, but so far no mention has been made of the notion of "Time" in Dr. Wolff's cosmology. Since this is of such fundamental importance to both Drs. Einstein and Wolff, a brief discussion of certain aspects of "Time" should be discussed at this point.

As suggested earlier in the discussion of the Continuum, the Transcendental Levels of the Hierarchy stand outside the limitations imposed by Time, Space, and Causality, and yet the Matrix contains within It the potential for all these qualities which are derivative from the Matrix, or Pure Primordial Consciousness (or "Consciousness-Without-an-Object"). One of the aphorisms expresses this idea rather poetically:

"12....Within Consciousness-Without-an-Object lies
the seed of Time." 44

In his "Commentaries on the Aphorisms", Dr. Wolff expands on this theme:

"Although consciousness-as-experience is time-bound, Consciousness, as such, is superior to time....The 'seed of time' may be thought of as the possibility of time. Time is an eternal possibility within Consciousness-Without-an-Object. Time is not to be thought of as something suddenly brought to birth, for the notion of a 'suddenly' presupposes time. On the time-bound level, time is without conceivable beginning or end. It is in the depths of Consciousness that time is transcended. It is quite possible so to penetrate these depths that it is found that no difference of significance attaches to the notions of an 'instant of time' or 'incalculable ages of time!' Yet, all the while on its own level, time continues

to be a binding form. We have here one of the greatest of mysteries. Through time it is possible to reconcile judgments that would otherwise be contradictory. This principle is so familiar as not to require elucidation. But he who reaches in Recognition to Consciousness-Without-an-Object finds that the logical law of contradiction no longer applies."⁴⁵

Dr. Wolff uses the term "Recognition" to mean the same thing as the "Awakening" experience, or "Enlightenment" into the experience of Transcendent Consciousness. In the chapter entitled "The Conflict Between Space and Time" in his book, Pathways Through to Space, Dr. Wolff suggests a resolution to the "apparent" conflict between Space and Time:

"As Space and Time are commonly conceived, the notion of a war between these two hardly seems intelligible. For we have formed a habit of regarding these as purely formal pre-existences, quite independent of matter and consciousness. This is not the standpoint of Idealistic philosophy (Note: Dr. Wolff's philosophy might be called 'Transcendental Idealism', but he prefers that it not be referred to as merely that-M.V.S.) nor of theoretical physics, since the epochal contributions of Albert Einstein. However, it is a view practically and commonly held, and it must be discredited before meaning can be attached to conflict between space and time.

As should be clear by this time, I do not regard space and time as external to Consciousness, but rather as modes and forms determining the play of relative consciousness or, in other words, as setting the stage for the drama of evolution. Neither space nor time are limitations imposed upon the ultimate Reality. On the contrary, they have their origin within that Reality and are simply the most primary circumscribing forms that serve the purpose of delimiting consciousness or nature as this appears to human consciousness."⁴⁶

Since Time and Space are such closely related concepts in the four(and more)-dimensional aspects of the Relativistic "Space-time" continuum, Dr. Wolff devotes several of the Aphorisms to the concept of the "World-Containing Space":

"... Within Consciousness-Without-an-Object lies the seed of the world-containing Space. (Aphorism #17)

'Space' is a generic concept, as there are many kinds of space. Thus the perspective-space of the eye has characteristics quite different from those of the space with which the engineer works. The latter is generally the familiar Euclidian space. But, whereas we formerly thought that the Euclidian Space was the sole real space, today we know there are many kinds of space. Most of these exist only for mathematics, but within my own day, we have seen one of these purely mathematical spaces become adapted to the uses of mathematical physics (as in the 'Riemann Transformations' which later served Dr. Einstein in his equations-M.V.S.). So now the notion of a multiplicity of types of spaces is definitely extended beyond the domain of pure mathematics...It is characteristic of these spaces, at least as far as we are commonly familiar with them, that distance and quantity are significant notions. Such notions, however, are not essential to space as such, as is revealed in the mathematical interpretation of space as 'degrees of freedom'." 47

Elsewhere in the writings of Dr. Wolff, he refers to the term "dimensions" in terms of "degrees of freedom" as well. Continuing with his insights regarding the nature of "space":

"Space is to be regarded as the framework or field of each particular level of differentiated consciousness. The world-containing space is that framework in which objects appear." 48

In the following Aphorism, Dr. Wolff asserts the interdependence of space and the objects contained within it. In the discussion of the Aphorism, Dr. Wolff refers to the concept of the "warping" of space, reminiscent of the words of Professor John A Wheeler, as previously quoted:

"19...To be aware of the world-containing Space is to be aware of the Universe of Objects.

The view developed in the new relativity is consonant with the present aphorism, for in this latter theory, matter and space are viewed as interdependent. This space is not simply an empty abstraction, but actually has what might be called a substantial quality. Thus, the very form or

'properties' of the space is affected by the degree in which matter is concentrated in different portions of it. It becomes warped in the vicinity of large stellar bodies, so that the shortest distance between two points is no longer a straight line, in the old sense, but a curved line, analogous to an arc of a great circle on the surface of a sphere. Modern astrophysics has even developed the idea of an expanding space, implying therewith the possibility of a contracted space.

...Once we have the notion of a space expanding with matter, which is coextensive with it, and the consequent possibility of its contraction in another phase of the life-history of matter, then there at once emerges the further implication of the dependence of matter-space upon a somewhat still more ultimate. For pulsation implies a matrix in which it inheres. In these aphorisms, that matrix is symbolized by Consciousness-Without-an-Object." 49

Dr. Paul Davies asks a very important question regarding the nature of the ponderable universe. In his book entitled God and the New Physics, Dr. Davies raises the following point:

"...there is more to the world than just the state of the universe. What about the laws? Granted that, initially at least, the universe was in a very simple state, there can be no doubt that the laws of physics are still rather numerous and special. Are these laws not contingent? Could we not envisage a host of alternatives? Furthermore, what about the constituents of the universe- the protons, neutrons, mesons, electrons, and so on. Why those particles? Why do they have the masses and charges that they do? Why are there not more, or less, types of such subatomic particles?" 50

Professor Davies then describes the "Big Bang" theory, and continues raising the question of "Laws":

"If these ideas are right- and it is premature to conclude more than that the signs are encouraging- then they have profound implications for the 'big bang' theory. In the unlimited temperatures of the creation, only the superforce would have operated, with a handful of simple particle species. The current differentiated forces and particles would only have emerged as the universe cooled. Thus the state of the universe, the laws of physics, and the constituents of matter all seem to have started out in an

exceedingly simple form.

Still, the skeptical theologians will reply, even a single superforce and a handful of simple particles require an explanation. Why that particular superforce? In fact, why any law at all?"⁵¹

Dr. Wolff has a great deal to say regarding the subject of "Law" as it pertains to the universe and the Consciousness principle. The following two Aphorisms relate to the topic of "Law":

"22....Within Consciousness-Without-an-Object lies the Seed of Law.

23....When consciousness of objects is born
the Law is invoked as a Force
tending ever toward Equilibrium.

Consciousness-Without-an-Object is not Itself law bound or law determined. It is rather the Root-source of all law, as of all else...All law, conceived as law of nature, or of consciousness in its various forms and states, or of relationships, is dependent upon law of thought. ...Thus we may regard a law-bound domain as a thought-bound domain, though such thought is not necessarily restricted to the familiar form commonly known to men. This implies, among other consequences, that there is no universe, save for a thinker.

...The most fundamental meaning of Law is Equilibrium. For equilibrium is that which distinguishes a cosmos from a chaos. The very essence of the notions of 'law' and 'equilibrium' is contained in the notion of 'invariant'. The counternotion is that of an 'absolutely formless flux', devoid of all meaning. This would be a state of absolute nescience. Therefore, the existence of any knowledge, or of any dependability in consciousness, implies the presence of law. But the moment we apprehend an object as object, we have invoked both knowledge and dependability. This is shown in the fact that the apprehension of an object implies the subject, which stands in relation to the object. Thus, Law appears as subject-object relationship. Now, at once, the factor of equilibrium is apparent, for opposed to the object stands the complementary principle of the subject.

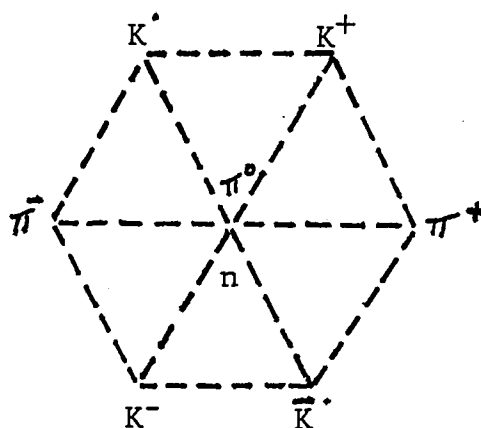
Laws are not discovered in nature, considered as something apart from all consciousness. Rather it is the truth that organized nature is a product of thinking consciousness. In a profound sense, the Law is known before it is empirically discovered. This is revealed in the fact, noted by psychology, that law-formulations are developed out of 'fantasy' processes. In notable instances, as in the case of Riemann, a form principle was evolved as a purely fantastic geometrical construction, which several decades later supplied the form for Einstein's general theory of relativity, to which current physical experience conforms better than it does to any preceding theory."⁵²

One of the most important statements made above is the statement that "Law appears as subject-object relationship." In other words, in the drawings of Figures 5 and 6, the area below the Line of Demarcation, or the "Gulf", is the region of the Whole where Law is invoked as an underlying principle. In the area above the Line of Demarcation, the concept of "Law" is simply irrelevant to that Order of Being. In fact, Dr. Wolff has mentioned that the "law of contradiction" does not apply to the Continuum, since it is outside of Time and Causality.

In the search for Law and an ordering principle in the world of particle physics, a dynamic model reflecting the "quantum-relativistic" nature of particles has been evolved. It is called the "S-Matrix" theory. It's key concept, the "S-Matrix" was originally proposed by Heisenburg in 1943, and has been developed, over the past two decades, into a complex mathematical structure which seems to be ideally suited to describe the "strong interactions" of particles known as "hadrons". Dr. Fritjof Capra, in his book, The Tao of Physics describes the characteristics of the "S-Matrix" Model:

"The S-Matrix is a collection of probabilities for all possible reactions involving hadrons. It derives its name from the fact that one can imagine the whole assemblage of possible hadron reactions arranged in an infinite array of the kind mathematicians call a 'matrix'. The letter 'S' is a remainder of the original name, 'scattering matrix' which refers to collision- or 'scattering'-process, the majority of particle reactions."⁵³

The schematic representation of the "S-Matrix" Model looks something like a "wheel":



"S-Matrix" Model

Figure 8.

According to Dr. Capra:

"...changes in the world of hadrons give rise to structure and symmetric patterns which are represented symbolically by the reaction channels. Neither the structure nor the symmetries are regarded as fundamental features of the hadron world, but are seen as consequences of the particle's dynamic nature; that is, of their tendencies for change and transformation."⁵⁴

Dr. Wolff sees all "objects" (which includes subatomic particles as manifestations of ponderable matter) as deriving their existence from the Matrix of Primordial Consciousness, and thus subject to the Law of Equilibrium. The "S-Matrix Transformation" serves as an example of the principle contained in the following Aphorism by Dr. Wolff:

"...All objects exist as tensions within Consciousness-without-an-object that tend ever to flow into their own complements or others.

The principle involved here is illustrated by the law in psychology known as 'enanteodromia.' This is the law that any psychical state tends to be transformed into its opposite. The operation of this law is most evident in the case of those individuals who are extremely one-sided, since they manifest correspondingly exaggerated reversal of phase. But the principle always operates, even in the most balanced natures, though in these cases the two phases are conjoined and function together...A particularly impressive illustration is afforded by the interaction of electrons and positrons when coming into conjunction. Here we have a flow of phase into counterphase, resulting in mutual cancellation and the production of a different state of matter... No object of consciousness is stable- remaining ever the same- but is, on the contrary, a state of tension that tends to transform into its complement. Consciousness-without-an-object is the universal solvent within which the centers of tensions, or objects, have their field of play. All tendency in that play is counterbalanced by its countertendency, the culminating effect being an expression equated to zero. It is the zero that symbolizes the durable Reality, or Consciousness-without-an-object."⁵⁵

In the cosmology of Dr. Wolff presented here thus far, we have focused a good deal of attention on the "physical" aspects of the "Manifest" order, those aspects which fall within the domain below the Line of Demarcation seen in Figure 5. The justification for

this was felt to be in the fact that this domain of the Wolffian Cosmology is the primary concern of the physicists in particular, and of the scientists in general. We have seen in the examples of the "S-Matrix Transformations", the Einsteinian relativity and energy/mass references, and the "quantum" references that there appear to be certain discoverable "Laws" governing these dynamic interrelationships. The search for the equilibrating mathematical statements is still going on in the field of the New Physics, while new paradoxes are being uncovered in the attempt. To maintain the proper perspective of the role of the physicist and scientist within the Hierarchy proposed by Dr. Wolff, the reader should be reminded that the physicist is dealing primarily with the Laws governing inorganic matter which forms the sub-structure for Level One, continuing up the Hierarchy to include Levels Two and Three. Since the first three Levels have been defined as explicitly "Human" realms, this means that these first three realms are squarely the proper concern of the biophysicists and biologists, as well as the physicists. Dr. Wolff's Hierarchy is one of ascending consciousness Levels dealing with the "Human" Levels up to and including what he calls the "Trans-human" Levels. Dr. Wolff is not the first to propose such a hierarchy to explain certain fundamental relationships, however. Other writers, such as Huston Smith and Ken Wilber, are notable examples who have developed their own hierarchies quite independently of Dr. Wolff's influence, I am confident.

In my research of the discoveries in the "New Physics" for this essay, I have found Ken Wilber's writings to be among the clearest and most directly relevant to the subjects of Consciousness

and the "New Physics" of any I have come across. He has much to say regarding the fallacies of "Hierarchy collapse" and unwarranted sweeping generalizations made by many authors writing on the subjects of Mysticism and the "New Physics." In an effort to avoid these pitfalls in this discussion of Dr. Wolff's philosophy, Ken Wilber's admonitions and insights have been consciously adhered to by this writer as much as possible in the development of these complex and highly abstract concepts.

In the following excerpt from an interview with Ken Wilber by a representative of the ReVision Journal, the warnings against committing certain "fallacies" regarding a proposed hierarchy are felt to be relevant at this point:

"Wilber: First off, each higher level cannot be fully explained in terms of a lower level. Each higher level has capacities and characteristics not found in lower levels. This fact appears in evolution as the phenomena of creative emergence. It's also behind synergy. But failing to recognize that elemental fact—that the higher cannot be derived from the lower—results in the fallacy of reductionism. Biology cannot be explained only in terms of physics, psychology cannot be explained only in terms of biology and so on. Each senior stage includes its junior stages as components but also transcends them by adding its own defining attributes.

RV: Which generates hierarchy....

Wilber: Yes. All of the lower is in the higher but not all the higher is in the lower. A three-dimensional cube contains two-dimensional squares, but not vice-versa. And it is that 'not vice-versa' that creates hierarchy. Plants include minerals but not vice-versa; the human neocortex has a reptile stem but not vice-versa, and so on. Every stage of evolution transcends but includes its predecessor— as Hegel said, to supersede is at once to negate and to preserve.

RV: But that doesn't apply to godhead or the absolute, does it?

Wilber: It applies to the paradoxical aspect of God that is the highest of all levels of being. God contains all things, but all things do not exclusively contain God— that would be pantheism.

RV: The other side of the paradox is that what every person or thing is, whether enlightened or not, is still only God.

Wilber: Yes. Anyway, each stage-level of the hierarchy is, as Huston Smith pointed out, a more-or-less unified totality that can stand on its own, so to speak. Likewise, all of the elements of each level are said to be mutually interdependent and interrelated. Each level of hierarchy, in other words, is a type of holoarchy."⁵⁶

These critical warnings by Ken Wilber appear to be valid criteria which could be applied toward a hierarchical representation such as the one offered in Dr. Wolff's cosmology. As far as the author of this essay has been able to determine, the Wolffian Hierarchy passes each of these tests, emerging as a self-consistent Monistic philosophy without falling into the traps of "reductionism" or "Pantheism." By means of the Consciousness Principle serving as both the Goal and the Base for the Wolffian Hierarchy, the involuntary/ evolutionary aspects are found to be present simultaneously in each level of the Hierarchy, as will be discussed later in this work.

For those unfamiliar with the terms "holoarchy" or "hologram", it should be pointed out that they refer to a relatively new photographic technique involving "interference Patterns" of coherent light beams (or "lasers") to produce three-dimensional images on a two-dimensional photographic plate. One of the most intriguing features of a hologram is that the whole image is contained within each part of the holographic plate. In other words, if the plate is broken into smaller pieces, the entire original image can be reconstructed from any one of the smaller pieces, with only a slight increase in the "fuzziness" of the image as the

pieces decrease in size. The concept of the hologram is becoming increasingly important in many areas of the "New Physics", especially with regard to the discoveries in the workings of the human brain which are now emerging in the field of "psychophysics." Scientists are very excited to find that memories stored within the human brain cells appear to be stored throughout the brain by low-frequency "interference waves" operating in a holographic fashion. A complete description of the principles of the hologram may be found in any modern physics textbook, for the interested reader.

When Ken Wilber was asked by the interviewer to expand on the relationship between the discoveries in the "New Physics" and the concept of a hierarchy, Wilber's response goes straight to the point, as may be seen in the following passage:

"RV: Then what is it that the new physics has discovered? I mean, if it's not the Tao, what is it?
Wilber: In my opinion, it is simply the holoarchy of level one, or the fact of material or physical energy interrelation. The biologists discovered the holoarchy of their level-level two (Author's Note: Wilber's hierarchy places the inorganic physical level separately in his level one, whereas in the Wolffian Hierarchy, it is assumed to be correctly placed below Level One, since Dr. Wolff begins his hierarchy at the biological level One, showing Levels One, Two and Three as the 'Human' Realms)- about thirty years ago; its called ecology. Every living thing influences, however indirectly, every other living thing. The socio-psychologists discovered the holoarchy of the mental level- the fact that the mind is actually an intersubjective process of communicative exchange, and no such thing as a separate or radically isolated mind exists. Modern physics- well, it's what, almost a century old now?- simply discovered the analogous holoarchy on its own level, that of physical- energetic processes. I don't see any other way to read the actual data."57

Bear in mind what has just been said regarding the recent discovery by the modern physicists (i.e., that a "Holoarchy appears to exist within each level of the Manifest hierarchy, composed of mutually interdependent and dynamic elements) as we review the diagram showing the basic concepts underlying the Wolffian Cosmology. Refer to Figure 9 as we discuss the following topics. To assist us in organizing and clarifying the emerging "picture" of Dr. Wolff's philosophy (remember it is only a symbol or a "pointer", nothing more) a list of certain descriptive terms has been added to the original drawing of Figure 5. Having done this with the best of intentions to "shed light" on matters, I am immediately reminded of Dr. Wolff's warning regarding the inherent dangers in using symbols and "signposts":

"...they are like the man who, going to a town (let us say he is going out here to Yuma) and he comes to a signpost with the word 'Yuma' on it and an arrow pointing, and he says, 'I have arrived,' and he gets out there and hugs the signpost and cries, 'I have arrived!'....at best it points to the truth which is a realization beyond word and form."⁵⁸

With that as a reminder, let us proceed with great care to avoid mistaking the "symbol" for "reality," and to refrain from attempting to describe the Ineffable.

In Figure 9 we are on fairly "safe" grounds when attempting to describe the area below the Line of Demarcation. We are relatively "safe" here because it is the zone of "Dualistic" Consciousness, or the "Human Realms" with which we, as human beings, are most familiar. The descriptive terms which characterize this realm were, for the most part, taken from passages of Dr. Wolff's

CHARACTERISTICS OF "UNMANIFEST" REALMS:

- A "Continuum", a "Plenum", or "Matrix"
- Transcends Space, Time, and Causality
- "Flowing" quality (everything flows into everything else)

• Non-Relativistic

Pure Consciousness-

Without-an-Object, serving
as mutual container of

Nirvanic and Sangsaric Realms

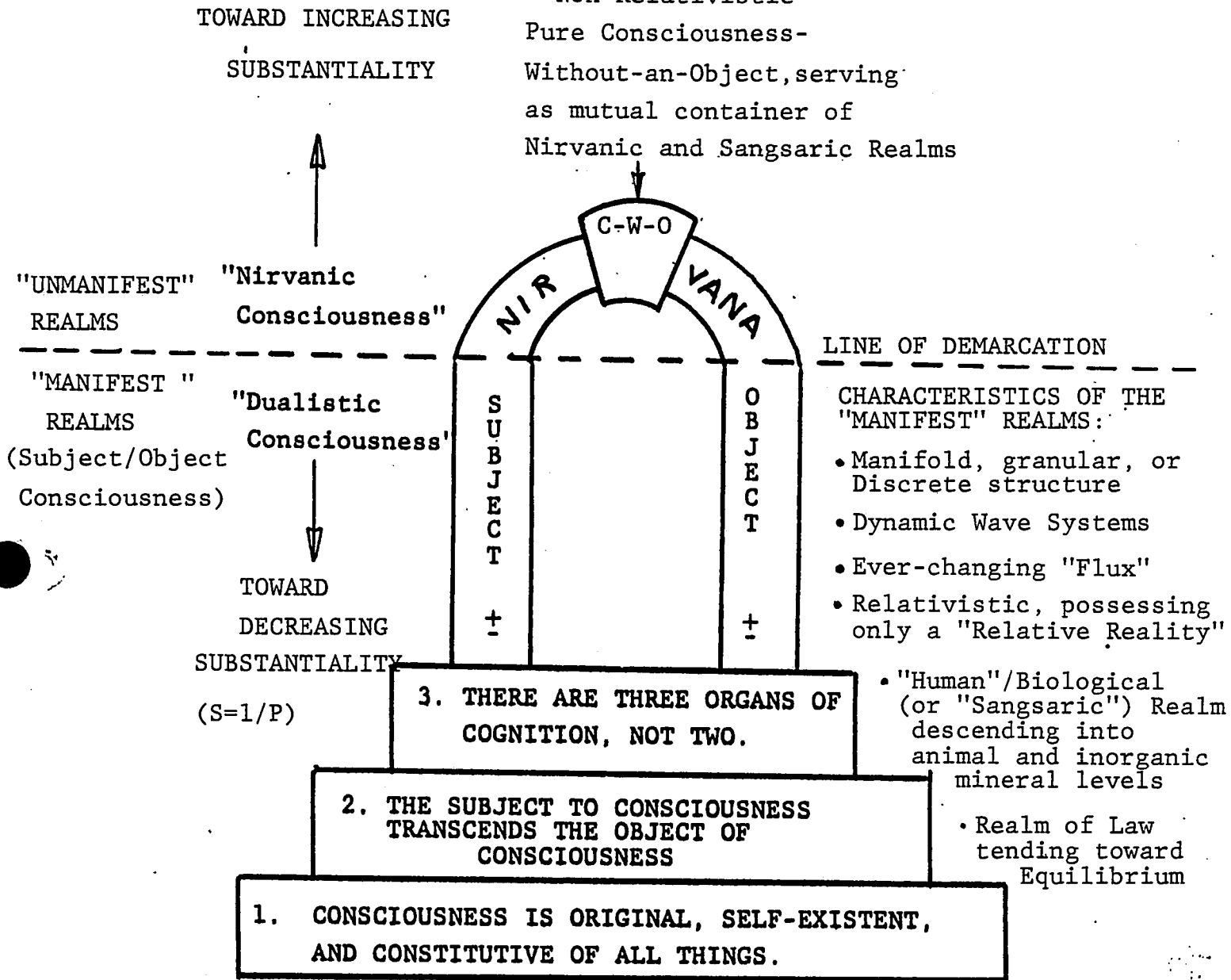


Figure 9

DIAGRAM SHOWING KEY CHARACTERISTICS OF THE
COSMOLOGY OF FRANKLIN MERRELL-WOLFF

own words, given in this work so far. The "Dualistic", or "Subject/Object" realms comprise what Dr. Wolff calls our "Manifest" universe. Here, every "thing" is in a state of flux, constantly changing its form, and subject to Law governing Time, Space, and Causality. It is said to possess only a "relative reality", and it is sometimes referred to as the "Sangsaric" realm, to use a Buddhist term. Another important aspect of the Manifest realm is its "derivative" nature. Dr. Wolff refers to it as being of a "derivative" nature since it is derived from, and sustained by, the Unmanifest Realm.

The Manifest realm is the "world of the senses," but it is a world of relative "emptiness" when compared to a "substantial" Matrix in the Unmanifest realm, in Dr. Wolff's view. In the following passage, Dr. Wolff characterizes the "sensible" world (or the world of the "senses") in his own words:

"Now, if it is relative emptiness that arouses to activity concrete consciousness, then it follows that actual substantiality is inversely proportional to sensibility or ponderability. There is most substance where the senses find least, and vice versa. Thus the terms-in-relation of the sensible world are to be viewed as relative emptiness contained in an unseen and substantial matrix. From this there follows, at once, a very important consequence. The discrete manifoldness and apparent pluralism of sensibly given things are quite compatible with a continuous and unitary substantial matrix. The monistic tendency of interpretations based upon mystical insight at once becomes clear, and here is afforded a reconciliation of the one and the many."⁵⁹

When the attempt is made to characterize any aspects of the realms symbolically represented by the area above the Line of Demarcation, one must be very careful in the choice of words to

describe these highly abstract realms, especially since our "subject/object" language does not always lend itself to precise descriptions of certain Realities pointed to by the Mystics. Therefore I must defer to Dr. Wolff's own words to describe the notion of a "Continuum":

"...the continuum is a notion of a unity of a totality composed of infinite multiplicity but not involving relationships between discrete entities. This appears to me the best positive conception as yet possible for suggesting the Reality underlying the negative definition of 'not one and not many.'"⁶⁰

Dr. Wolff also refers to the Continuum as a "Matrix" from which all else is derived. The Latin word "matrix" means "womb," and the Latin "matris" means "mother." So we may consider the Matrix as a kind of "birthplace" of all relative "things," or "objects." In Pathways Through to Space we find the following reference to the Matrix:

"...if we turn from the phenomenal world to the Matrix of all relative things, creatures, men, etc., it at once becomes apparent that the Matrix of a blade of grass is equal to the Matrix of a man or of a planet. For the Matrix, taken in the innermost sense, is the universal homogeneous Plenum."⁶¹

The term "Plenum" comes from the Latin word "plenus," meaning "full." Thus we are referred back to the concept of the "Fullness of the Void," as described by Dr. Wolff's equation, " $S=1/P$."

At this point in the unfoldment of the Cosmology of Dr. Wolff,

some of the concepts and implications of his offerings to the physicists and to humanity in general may seem a bit "strange," or "radical," perhaps even "revolutionary" to some. Many of his ideas run counter to everything we have been taught in our traditional approaches toward the empirical, "objective" world of our "reality." Dr. Wolff himself was (and still is, at age 96 years at the time of this writing) painfully aware of the difficulties inherent in the complexities and abstractions of his philosophy which tend to limit a widespread acceptance or understanding by the general public. Dr. Wolff's awareness of this problem may be seen in the following passage from his "Commentaries on the Aphorisms":

"This work is not written for immature men and women. It is believed that the inherent difficulty of the subject, when viewed from the standpoint of the intellect, will automatically serve as a means of selection, so that only those will read and understand who are prepared to do so."⁶²

For those who may find Dr. Wolff's ideas to be not merely complex or incredulous, but downright "crazy" at times, I am including a brief but amusing anecdote involving an incident between Professor Niels Bohr and a student:

"During the early period of this century when the foundations of quantum theory and relativity were being fashioned, a student was delivering a paper in which he was attempting to elaborate a novel and difficult idea. His listeners seemed perplexed with his explanation, and in frustration he turned to Professor Niels Bohr who was in the audience and asked, 'Do you think this idea is crazy?' Professor Bohr replied, 'Yes, but I do not think it is crazy enough!'"⁶³

In our high-technology society of the Western world we have excelled in the development of what Dr. Wolff refers to as the "extraverted mind," a mind with its primary focus on the world of external objects and their relations. There is no question that this fascination for the power of the extraverted mind has brought about innumerable technological solutions and inventions which have benefitted our society. At the same time, it has brought with it the knowledge of the awesome energies which may be unleashed through atomic fusion and fission which must be dealt with by our society and the world at large. In addition, the excessive preoccupation with the extraverted mind to the exclusion of the introverted mind has created an imbalanced, fragmented, and unhealthy state of affairs in our society resulting in serious physical and psychological health hazards. The "worshipping" of the extraverted mind has become, in fact, the "Great Western Religion," with Christianity only "added on," in Dr. Wolff's opinion:

"The worshipping of the Extraverted Mind- that's the real religion of the West...that's why we are in such a mess: the helpless Extraverted Mind can make such a mess that it can't clean it up!"⁶⁴

Dr. Wolff points out that the Introverted Mind, which has been considered the despised "weak Sister" of the Extraverted Mind by the Western World is actually the power by which we may gain Redemption!

The New Physicists, working with the modern Biologists, Medical Doctors, and Psychologists, are discovering that the mechanical models they have been using are no longer working. To put it in

in terms of modern computer terminology, their models suffer from an inadequate "data base." Their models have neglected to include that most important dimension: Consciousness! In some ways, the scientists have been operating like the "Flatlanders" in the wonderful story called "Flatland," written by the mathematician, Edwin Abbott. The Flatlanders discovered they had been living their lives "minus a dimension" when one day they were visited by a genuine "sphere." 65

Here is how a modern physician and author, Larry Dossey, author of Space, Time and Medicine sees the present situation:

"In bioscience the Magellans have returned with news of strange lands, and the news that modern medical scientists are bringing back is no less revolutionary than that which the earliest circumnavigators announced. We have not had it quite right, they tell us. Our models dealt with limited information and were limited as a result.

What is the new information? It is this: Consciousness matters!" 66

What I am suggesting here is that Dr. Wolff's philosophy, with its insistence on the primacy of Consciousness, may be just "crazy" enough to help bring about a much-needed shift in the focus of our awareness. A shift in our perspective of consciousness is equivalent to a "magical transformation of the world," according to Dr. Wolff. The inclusion of the dimension of Consciousness into our methods of exploring the universe and ourselves could bring about new solutions and paradigms for the future of humanity. The possibility that the human brain may be evolving a new "organ of cognition" which could function as a "bridge" to allow the individual mind to penetrate into the higher realms of Consciousness has evolutionary and re-

volutionary implications, not only for the physicists, but for the biologists, physicians, psychologists, and theologians as well.

There are some encouraging signs that the search for the new paradigms which include the dimensions of Interdependence, Higher Orders of Being, and Consciousness has already begun. The physicist, David Bohm (whose insightful book, Wholeness and the Implicate Order has been mentioned earlier in this work) has contributed much toward clearing the ground for a synthesis of Science and Consciousness into a complementary and unified Whole.

Dr. Rene Weber, whose interview with Dr. David Bohm has been referenced earlier, has written an article entitled "Field Consciousness and Field Ethics," in which she clarifies some of the issues surrounding the contributions made by Dr. Bohm. The following excerpt from this article serves to outline these central issues:

"Bohm only reluctantly admits the theories of other thinkers into his discussions, insisting on working out a given problem afresh without leaning on the past. Still, he allows that there are parallels between his views and those of certain philosophies of the past. A case in point is Plato, whose Allegory of the Cave (Republic VII) coheres surprisingly with Bohm's cosmology. When pressed, Bohm agrees to the correlation of Plato's cave with the explicate order, and that of Plato's metaphor of light with Bohm's implicate order. Both Plato's light (Sun) and Bohm's implicate order can be apprehended only through insight, both lie beyond language, and both are inaccessible except to those willing to undergo strenuous and single-minded change. The domains Bohm characterizes as 'infinitely beyond' even the implicate order-namely truth, intelligence, insight, compassion- compare to Plato's ultimates: truth, beauty, the good, the one.

Other historical traditions come to mind. In the West, Plotinus, Leibniz, and Spinoza; in the East, Buddha, Shankara, and Jnana Yoga. Jnana Yoga, whose affinity with Krishnamurti and Bohm is striking; is the

yoga of discernment and discrimination. It eschews metaphysics and exoteric religion, ritual and symbol-systems in favor of a pure awareness without frameworks or filters. It is known in the tradition as 'the path that goes straight up the side of the mountain,' and is reputed to be the most direct and difficult path there is. Only the very few are said to be willing to meet its demands or are capable of this feat. According to those who have left us the record of their experience, its high point is silence."⁶⁷

The affinity of Bohm, Krishnamurti, and Dr. Wolff for the yogic discipline of Jnana Yoga, or the "Yoga of Knowledge," might not be as coincidental as it may appear on the surface. The yogic pathway which eventually led Dr. Wolff to the highest levels of Transcendent Consciousness was, in fact, Jnana Yoga. In his book, Pathways Through to Space, Dr. Wolff acknowledges the influence of the great Indian Yogi, Shankara, and his teachings regarding the meditative technique of discriminating between the "Self" and the "not-Self" (as described in Shankara's work, The Crest Jewel of Discrimination) which proved to be effective preparatory work, culminating in Dr. Wolff's "breakthrough" into Transcendent Consciousness in 1936. Dr. Wolff has said that there are other "pathways" leading to Nirvana and beyond, and that Jnana Yoga is not necessarily recommended for everyone. He simply says that he has found it to be effective for him, and that others might find it to be effective for them as well. It is true that, as Dr. Weber has pointed out, the path that goes "straight up the side of the mountain" demands the most rigorous efforts on the part of the student of Jnana Yoga. Dr. Wolff regards the body as

a "fine instrument" which should be given the care one might give to the maintenance of any precision instrument since it is, after all, our "vehicle" of Consciousness. The discriminative powers of the mind, and what Dr. Wolff refers to as the "mystic organ" of the human intellect together form the "Jewel beyond all price" deserving the highest care and consideration, in his opinion. That is why Dr. Wolff eschews the taking of drugs in any form, except when absolutely necessary for the maintenance of a healthy body, and only under the advice of a physician. Anything which might in any way damage the delicate functioning of the "Mystic Organ" of the brain is not worth the risk, in the view of Dr. Wolff.

The "Mystic Organ" is another term used by Dr. Wolff which refers to the "Introceptive Organ" of the mind which, through the process of "Introception" (i.e., the "turning of the light of consciousness inward toward its source") can act as a "bridge" to access the Transcendent levels of Consciousness. From the study of Dr. Bohm's works, it appears that Dr. Bohm's term, "Insight" has much the same meaning as Dr. Wolff's term, "Introception."

The narration of Dr. Wolff's "breakthrough" into the realm of the "High Indifference" (shown symbolically in Figure 5) is given in prose form in his book, Pathways Through to Space. In the following quotation from the chapter entitled "The High Indifference," I have arranged the sentence lengths in a somewhat more poetic form of blank verse to facilitate the reading, and

to bring out the naturally flowing "poetic" qualities of his words. Note that its culmination, or "high point," as Dr. Weber described it is indeed, silence. The poem begins on the following page.

The High Indifference

" How shall I ever describe
What happened last night?
At best, what I say may suggest something,
But can never communicate the Reality.
As the Infinite is to the finite,
So was that Consciousness to the relative consciousness
Of the subject/object manifold.
I penetrated a state
Wholly beyond the relative field.
Truly within the Infinite there are
Mysteries within Mysteries,
Deeps beyond Deeps,
Grandeurs beyond Grandeurs!
Is there no end to the possible Awakening?
Is there no end to the progression of infinities?
It may be so.
I know I have found an Infinite World...
An Infinite World,
And then another Infinite, consuming the first.
I can say these Worlds are,
But I can place no limits on the Beyond.
Mystery of Mysteries,
Reaching inward and outward,
But ever beyond!

And from that beyond,
Ever there come new whisperings of other
Imponderable Glories!
Ah! How little is this world
At the beginning of the Trail,
Barely a point in a Space
Of unlimited dimensions!
This Consciousness had no marked quality
That I would call Joy,
In a differentiated sense, but rather,
It was a Higher Integration
Wherein the Joy
Was but an incidental moment.
I found myself surrounded by,
And interpenetrated through and through with,
A quality for which there is no adequate word,
But which is most nearly represented by
"Satisfaction!"
I do not simply mean that
The State was satisfactory,
It was SATISFACTION!
The difference in the significance
Of these two modes of expression
Is of fundamental importance.
He who is enveloped in this Satisfaction
Is in need of nothing whatsoever to satisfy him.

The Satisfaction I realized
Is a real and substantial Existence
Prior to all experiencing.
I experimented with this Satisfaction
And found that I could even effect the equivalent
Of "swallowing" It,
And then felt, especially in the stomach,
The state of satisfaction,
Something like a nutritive value,
Without the use of a material food.
I have never tasted any food
That could even approximate
The sense of nutritive well-being
That this pure essence of Satisfaction
Actually did give me!
But this nutritive phase
Was only a minor aspect
Of the full Satisfaction.
It was the essence of
Aesthetic, emotional, moral, and
Intellectual Satisfaction at the same time.
There was nothing more required,
So far as desire for myself was concerned.
Only in one sense did I find a desire
That could take me away from that State,

That was the desire
To convey this new value
To others.
The memory of
The others,
As yet left out,
Was the one unsatisfactory element.
I must confess that I know
Of no other consideration adequate
To awaken the will to forego it,
Once the individual has Known
The Presence of the High Satisfaction.
Could I have asserted the egoistic will
And withdrawn from the State?
I cannot give a certain answer
To this question.
It was as though the Higher Consciousness
Dominated the individual energy,
With my individual permission.
How long the state of complete Satisfaction continued,
I do not know.
But as time went on,
There was a gradual dimming,
Or fusing, or being enveloped,
On the part of the Satisfaction,

By another, and considerably more
Profound State.

The only expression
That reasonably well represents
This higher State
Is the term "High Indifference."

Along with this was a sense of
Simply tremendous Authority!

It was an Authority
Of such stupendous Majesty
As to reduce the power
Of all Caesars

To the relative level
Of insects!

The Caesars may destroy
Cultures and whole peoples,
But they are utterly powerless
With respect to the

Inner Springs of Consciousness,
And in the domain
Beyond the river Styx,

They are as impotent
As most other men!

But the Authority of the High Indifference
Has supreme dominion over all this.

In this State I was not
Enveloped with satisfaction,

But there was no feeling,
In connection with that fact,
Of something having been lost.
I now had no need of Satisfaction.
This state or quality rested, as it were,
Below Me,
And I could have invoked it
If I had so chosen.
On the level of the High Indifference
There is no need of
Comfort or of Bliss,
In the sense of
An active Joy or Happiness.
The High Indifference is to be taken
In the sense of
An utter Fullness
That is even more than
A bare Infinity.
To borrow a figure from mathematics,
It is an Infinity of some higher Order,
That is, an INFINITY which comprehends
Lesser Infinities.
But now We will speak further:
He, who can turn his back
Upon the utmost limit of desire,
Comes within the sweep of
A Current of Consciousness

Wholly beyond the action of Desire.
But beyond the Great Renunciation
Is a Compensation
That places Man where He is Lord,
Even over the first Nirvana.
It emplants Him on a level
That is beyond Rest
As well as beyond Action;
Beyond Formlessness,
As well as beyond Form;
And this is the High Indifference.
He who abides on the
Plane of the High Indifference
May enter Rest or Action at will,
But he remains essentially
Superior to both,
Since from that Level,
Both are derived.
There is a completeness,
Superior to that of Satisfaction,
From which Satisfaction
May be employed as an instrument,
And not merely stand
As a final Goal.
So Rest can be blended with action,
And the Balance remain unbroken.
But the High Indifference

Unites much more,
For in It are blended
All qualities, all dualities.
It is the End, and the Beginning
And all in between.
It is the physical as well as
That beyond the physical;
It is Form as well as the Formless;
It spreads over and through All,
Not excluding time and space.
It is the Desire
And the Desire Fulfilled,
At this moment and forever.
It transcends all Renunciation,
Even the highest.
Thus, the balancing Compensation is fulfilled.
Here, Knowing and Being are at once the same.
Here is the utter Fullness,
Beyond the highest reach of the imagination.
I moved about in a kind of Space
That was not other than Myself,
And found Myself surrounded by
Pure Divinity,
Even on the physical level,
When I moved there.
There is a sense in which
God is a physical Presence,

As well as metaphysical.
But this Presence is
Everywhere and everything,
And, at the same time,
The negation of all this.
Neither I nor God were There;
Only BEING remained.
I vanished,
And the object of consciousness vanished,
In the highest,
As well as the inferior, senses,
I was no more,
And God was no more,
But only the ETERNAL,
Which sustains all Gods
And all Selves, remained.
Is it any wonder
That SILENCE is the usual answer
To the question:
"What is the High Indifference?"⁶⁸

Dr. Wolff affirms that, in principle, the Introceptive function of the mind is "presumptively potential in all men" and not the exclusive property of a select few. In his own words, Dr. Wolff explains:

"However, it is viewed as a function latent in the total psychology of man, active generally only as an unconscious influence..."⁶⁹

So the question of method naturally arises: how does one awaken the "latent" functioning of the Introceptive Organ into conscious activity? Regarding the problem of method, Dr. Wolff has this to say:

"The problem of method, whereby the latent introceptive function may be aroused to conscious activity, is peculiarly difficult, since the solution proves to be one which can never be completely attained by method. Further, effective method has been found to be relative to individual temperament. The means which have actually proven effective with an individual of one temperament, may fail completely with another with a radically different psychical organization. Recent work with respect to the differences of psychological types casts an illuminating light upon this aspect of the problem. So, clearly, the subject requires a vast amount of study."⁷⁰

Before we hastily conclude that the problem of method might be resolved simply by matching one's psychic temperament to a particular meditative technique or yogic discipline which seems to "fit," there is much more to it than that. Dr. Wolff warns that the "Realization" experience, or the "Awakening" to Transcendental awareness by an individual is never the result of any purely "physical" or "relative" cause. One can "prepare the Candle," as it were, but the lighting of the candle is always a spontaneous event. Dr. Wolff is very emphatic on this point, which may be seen in this passage from Introceptualism:

"An intellectual process of discrimination, including discussion, is well-nigh the only agency. In the end, when this discrimination has completed the final preparation, the Realization comes at its own time, spontaneously. All preparation has the value of purification or destruction of barriers, but it is not a magical agent which commands the Realization. The Awakened State is not an effect of causes set up by the candidate, for It has nothing to do with conditions. It is as though at some moment in the process of preparation the right balance is achieved and an obscuring curtain drops, simply revealing what has always been there, and has always been the Truth. Indifference to specific method is not only allowed; it is mandatory. For by attaching importance to any means, the candidate is clouding his mind with the delusion of efficient causal connection."71

It appears that Professor Bohm has reached virtually identical conclusions to those of Dr. Wolff in this area of the "removal of barriers" which tend to block any perception of what lies beyond our subject/object thinking. Professor Bohm has arrived at his conclusions by a completely different route from that taken by Dr. Wolff, yet they are strikingly similar, if it is allowed that Dr. Bohm's term, "insight" is roughly equivalent to Dr. Wolff's meaning of the term, "Introception." In the following excerpt from an interview conducted by Dr. Rene Weber with Professor Bohm entitled "The Enfolding-Unfolding Universe: A Conversation With David Bohm," these close parallels to Dr. Wolff's views become immediately apparent:

"Bohm:...So finally we could now say a consistent view is to maintain that something like the non-manifest matter is playing a role similar to what we thought of as spirit. It's moving manifest matter, but they are both matter, matter subtle and matter gross. Now, whatever we would mean by what is beyond matter we cannot grasp in thought. I mean, thought can pose the

question, but it cannot go any further.

Weber: But, can we reasonably assert that there must be something beyond that?

Bohm: No, we can't. We can say it would be reasonable to say there is, but we can't say by thought whether there is or isn't.

Weber: Can we do it by any other means?

Bohm: Well, that's the question. But you see, at the moment we are discussing thought. Thought attempting to do this must deceive itself and produce confusion. Then the question would be what would be involved in not using thought? That would involve the cessation of thought; therefore that would get us outside the scope of what we're discussing. But we would say that it is only when thought actually is not there that it would be possible to perceive what is beyond thought. When thought is there, attempting to capture what's beyond cannot work.

Weber: It is the filter that would filter it out.

Bohm: Yes, then it would therefore not be it anymore. Thought would filter according to its measure, and its measure is rather small, and it would filter this immense reality or totality into some little corner, some little thing which thought can hold.

Weber: So thought is really the sentinel guarding it, making it impossible for something to come through.

Bohm: Thought has its place; but thought trying to go beyond its place blocks what is beyond.

Weber: Yes. But something came up yesterday that was relevant to this, the idea of not-thought. What you call insight, what Krishnamurti and you have called insight, can pierce through that state of affairs, and change the matter itself.

Bohm: Yes, the matter in the brain itself. You see we could suppose that there is an insight that may arise in this unknown totality, and this insight acts directly on brain matter either at the subtle non-manifest level or possibly at the manifest, or it may more likely act in the subtle nonmanifest, which then changes the manifest. Thus the brain matter itself can change and be made orderly through insight. And thought itself changes in that case, not by thinking, not by reasoning, but rather a direct change takes place in thought."/2

One striking parallel found in Bohm's discoveries and in Dr. Wolff's discoveries is that, during meditation, thought gets in its own way, acting as a "limit" to subject/object thinking, which we have symbolized as the "Line of Demarcation," seen in Figure 5. In the passage just quoted, Bohm points to the difficulty

when he says "Thought has its place; but thought trying to go beyond its place blocks what is beyond." Dr. Wolff discovered the error he had been making in his meditation was the seeking of a subtle object or experience. The problem with that is, as long as there are objects as contents of meditative consciousness, no matter how subtle they may be, they act as a barrier to the higher realms of consciousness. As it turns out, this subtle difference is precisely the difference between normal "introspection" and "Introception." In normal "introspection," as commonly used in experimental psychology, these subtle objects which arise when the subject begins to turn his awareness inward, form the material from which the psychologist attempts to deduce clues regarding the subject's "Psyche" or "ego-state." These objects of awareness may also form the basis of psychological "complexes" which may exist in the subject's total psyche, as discovered by the analytical psychologist, Dr. Carl Jung. But for the seekers of Transcendent levels of Consciousness, it is necessary to pass beyond these subtle objects of thought which act as barriers to Bohm's "insight" or Wolff's "Introception." In the following reference from Dr. Wolff's writings, which I have entitled "The Leap Into Nothingness," Dr. Wolff describes this "error" he had made in his meditation. (The "poem" begins on the next page.)

The Leap Into Nothingness

" I discovered an error in my meditation:
I had been seeking a subtle object or experience.
Now any object or experience,
No matter how subtle,
Remains a phenomenal space-time existence,
Therefore is other than the Supersensible Substantiality,
As any yogi could plainly see.
Thus at last I knew the consciousness to be sought:
The state of pure subjectivity without an object.
So it occurred to me that success might be attained
By a discriminative isolation
Of the subjective pole of consciousness.
I saw that genuine Recognition
Is simply a Realization of Nothing,
But a Nothing that is absolutely Substantial
And identical with the Self.
This was the final turn of the Key,
The Key that opened the Door.
I found myself at once identical with the Voidness,
The Darkness, and the Silence,
But realized them as utter ineffable Fullness,
In the sense of Substantiality;
Light in the sense of Illumination,
Sound in the sense of pure meaning and Value.
Here all language failed as an instrument
Of portrayal of the Transcendent.

I had made a leap into Nothing.
At once that Nothing was resolved into utter Fullness.
This, in turn, gave the relative world for me
A dreamlike quality of unreality.
I felt and knew myself to have arrived
At last, at the Real.
In a curious way, I knew that I KNEW.
I knew myself to be
Beyond Space, Time, and Causality.
I am already that which I seek,
Therefore, there is nothing to be sought.
By the very seeking, I hide
Myself from Myself.
I died, and at the same instant-
I was born again. "73

Thus, for Dr. Wolff, this seeming "Nothingness" proved to be the Key that unlocked the Doorway to Transcendent Consciousness. In Pathways Through to Space, Dr. Wolff refers to this "Nothingness" or "Emptiness" as being the real "Philosopher's Stone":

"The Emptiness is thus the real Philosopher's Stone which transforms all things to new richness; It is the Alkahest that transmutes the base metal of inferior consciousness into the Gold of Higher Consciousness."74

When Dr. Wolff crossed over the "Bridge of Introception," he broke through the boundaries of "three-dimensional" or "Subject/Object" consciousness and entered Nirvana, and eventually entered

the "High Indifference," and the awareness of Pure Primordial Consciousness he called "Consciousness-Without-an-Object." But as we saw in the blank verse rendering of his narrative of the "High Indifference," the one unsatisfactory element experienced was the awareness of the "others," the rest of humanity who were still locked in their "cave" of "three-dimensional" consciousness, to borrow from Plato's Allegory of the Cave. So Dr. Wolff returned to the "objective" world of humanity to share the news of his findings with the "others." The "chart" he drew for them was his book, Pathways Through to Space.

Part of the "good news" Dr. Wolff brought back with him to the "cave" was that consciousness is variable. As humans, we have the ability to raise (or lower) our consciousness levels under control of the focusing power of the Will. Also he bore the good news that there is a way out of the "Cave"; that there is a bridge, and that it may be crossed by anyone willing to search for it and do the work required to cross it. Dr. Wolff points out that the human mind is at once the dividing point and the uniting point of two worlds of Consciousness:

"That which appears in man as the persistent Self-the Witness of the universe/drama- is the dividing and uniting point of two worlds of consciousness. Before our consciousness lies the universe of objects, but behind is the hinterland of the Self, and this is Nirvana. But the hinterland of the Self is also the hinterland of all objects. In this hinterland we do not have merely empty terms-in-relation, perceived by the Self; we have a Continuum in which the inverse of the self is identical with the inverse of all objects. Here, consciousness, substance, and energy, or life, are interchangeable terms."⁷⁵

Since the human mind is both the dividing and uniting point of the two worlds of consciousness, and since it appears that both the physicist and the mystic are pointing toward the human mind/brain/organism as the common focal point for a "Grand Synthesis" of the different Orders of Being, the remainder of this essay will be primarily devoted to the interlocking revelations of Dr. Bohm and Dr. Wolff regarding the extraordinary potential of the human mind. In order to reveal the complementary nature of Dr. Bohm's and Dr. Wolff's Cosmologies, more complete definitions of certain terms used by Dr. Bohm are needed. A better understanding of such terms as "Implicate" and "Explicate" Orders, and "Holomovement" is required before any comparisons may be attempted.

Thus the first "definition" to be sought is in the notion of an "Implicate Order," as given by Dr. Bohm in his book, Wholeness and the Implicate Order:

"There is the germ of a new notion of order here. This order is not to be understood solely in terms of a regular arrangement of objects (e.g., in rows) or as a regular arrangement of events (e.g., in a series). Rather, a total order is contained, in some implicit sense, in each region of space and time.

Now, the word 'implicit' is based on the verb 'to implicate'. This means 'to fold inward' (as multiplication means 'folding many times'). So we may be led to explore the notion that in some sense each region contains a total structure 'enfolded' within it."⁷⁶

Dr. Bohm then gives us an example, in the form of an analogy, to illustrate what he means by an "enfolded" or implicate order:

"Thus, in a television broadcast, the visual image is translated into a time order, which is 'carried' by the radio wave. Points that are near each other in the visual image are not necessarily 'near' in the order of the radio signal. Thus, the radio wave carries the visual image in an implicate order. The function of the receiver is then to explicate this order, i.e., to 'unfold' it in the form of a new visual image."⁷⁷

In this same analogy we are given the notion that the explicate order is somehow the complementary (or perhaps the "inverse"?) side or process of the implicate order. But there is another distinction of even greater importance between the implicate and explicate orders suggested by Dr. Bohm:

"Generally speaking, the laws of physics have thus far referred mainly to the explicate order. Indeed, it may be said that the principle function of Cartesian coordinates is just to give a clear and precise description of explicate order. Now, we are proposing that in the formulation of the laws of physics, primary relevance is to be given to the implicate order, while the explicate order is to have a secondary kind of significance (e.g., as happened with Aristotle's notion of movement, after the development of classical physics). Thus, it may be expected that a description in terms of Cartesian coordinates can no longer be given a primary emphasis, and that a new kind of description will indeed have to be developed for discussing the laws of physics."⁷⁸

So we find in the cosmology of Dr. Bohm that the primary order is seen as the "Implicate" order, with secondary significance given to the "Explicate" order. Dr. Bohm prefers to look upon the two Orders as forming an undivided whole which are merged and united in one totality. His "new" form of insight can perhaps be best described by the phrase "Undivided Wholeness in Flowing Movement," in his own expression.

To overcome certain limitations in the hologram analogy, mentioned earlier in this work, Dr. Bohm prefers to use the term holomovement to better describe the holonomic and dynamic nature of reality. Because of the essentially dynamic nature of the explicate order of reality, it goes beyond the "hologram" analogy. As was suggested earlier in the discussion of the "S-Matrix" transformations, subatomic particles are dynamic patterns which can only be described in a relativistic framework where space and time are fused into a four-dimensional continuum, as Dr. Capra has pointed out. Thus the static, non-relativistic picture of the "hologram" is not entirely appropriate enough for Dr. Bohm's descriptions of their properties and interactions, so he prefers the term "Holomovement" instead of simply "Hologram."

Now consider how Dr. Bohm describes the notion of the "Holomovement", and some of its important aspects:

"To indicate a new kind of description appropriate for giving primary relevance to implicate order, let us consider once again the key features of the functioning of the hologram; i.e., in each region of space, the order of a whole illuminated structure is 'enfolded' and 'carried' in the movement of light. Something similar happens with a signal that modulates a radio wave (see Figure 10).

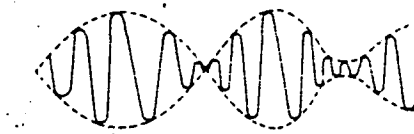


Figure 10
A "modulated" radio wave

In all cases, the content or meaning that is 'enfolded' and 'carried' is primarily an order and a measure, permitting the development of a structure. With the radio wave, this structure can be that of a verbal communication, a visual image, etc., but with the hologram far more subtle structures can be involved in this way (notably three-dimensional structures, visible from many points of view).

More generally, such orders and measure can be 'enfolded' and 'carried' not only in electromagnetic waves but also in other ways (by electron beams, sound, and in other countless forms of movement). To generalize so as to emphasize undivided wholeness, we shall say that what 'carries' an implicate order is the holomovement, which is an unbroken and undivided totality. In certain cases, we can abstract particular aspects of the holomovement (e.g., light, electrons, sound, etc.), but more generally, all forms of the holomovement merge and are inseparable. Thus in its totality, the holomovement is not limited in any specifiable way at all. It is not required to conform to any particular order, or to be bounded by any particular measure. Thus, the holomovement is undefinable and immeasurable."⁷⁹

Dr. Bohm has said that the "Holomovement is the ground of what is manifest," and that "all existence is basically holomovement which manifests in relatively stable form." In an interview by Dr. Rene Weber, Dr. Bohm was asked to expand on this idea of the holomovement acting as the ground of what is called the "Manifest" universe:

"Bohm: What is manifest is, as it were, abstracted and floating in the holomovement. The holomovement's basic movement is folding and unfolding. Now, I'm saying that all existence is basically holomovement which manifests in relatively stable form. I remind you that the word 'manifest' is based on 'mani' which means to hold with the hand, or something that can be stably held with the hand, something solid, tangible, and so on. Also visibly stable."⁸⁰

Now we see in the cosmology of Dr. Bohm that the "undivided wholeness" consists of a "manifest" (Explicate) order, and an "unmanifest" (Implicate) order, with the primary order being the Implicate Order.

If we recall that, in the Wolffian Cosmology, the Non-manifest Continuum (or Matrix) was given as the primary (highest levels of the Hierarchy), and the "Manifest" (Subject/Object) universe was given as the secondary or "derivative" universe (shown below the Line of Demarcation in Figure 9), we begin to see the interlocking nature of the cosmologies of Dr. Wolff and Dr. Bohm. In Dr. Wolff's approach to mysticism, as stated in his book, Intro-ceptualism he says:

"It is better to look high first, before looking low, since thus our view is the broad one of the mountain top, rather than the restricted one of the valley, often a narrow ravine... Thus the flow is from the high to the low, and from this it follows, just understanding can be attained only by beginning with the high, and not with the degraded end terms."⁸¹

Dr. Bohm's proposal is almost identical to Dr. Wolff's canon of "looking high first before looking low":

"Our proposal to start with the implicate order as basic, then, means that what is primary, independently existent, and universal has to be expressed in terms of the implicate order. So we are suggesting that it is the implicate order that is autonomously active while, as indicated earlier, the explicate order flows out of a law of the implicate order, so that it is secondary, derivative, and appropriate only in certain limited contexts. Or, to put it another way, the relationships constituting the fundamental law are between the enfolded structures that interweave and inter-penetrate each other, throughout the whole of space, rather than between the abstracted and separated forms that are manifest to the senses (and to our instruments)."⁸²

Before we examine the implications (of starting with the Primary and working downward to the Secondary Order) on the workings of the human mind, there is one more area of the New

Physics which has disturbed the scientists (including Drs. Bohm and Einstein) since its discovery in 1935, which merits our attention at this time. It is called the "E.P.R. Paradox", named after the three physicists who first discovered the phenomenon. The "E.P.R. Paradox" is still a "hot" item in the world of the "New Physics," and it is still widely discussed in scientific circles, as any reader of the New Physics will tell you. Its implications are shattering to our common-sense view of the "Manifest" world of reality, but when seen in the light of Dr. Wolff's insights (which appear to be supported by Dr. Bohm's in this matter), become quite plausible and logical, though admittedly startling. Of the many and varied explanations of the "E.P.R. Paradox" which have been written, Gary Zukav's seems to be among the clearest, and has therefore been chosen by this author to illustrate the problem:

"Albert Einstein, Boris Podolsky, and Nathan Rosen thought up this experiment over forty years ago. Actually, this version of the Einstein-Podolsky-Rosen experiment (using spin states) was thought up by David Bohm, a physicist at the University of London. This version usually is used to illustrate the Einstein-Podolsky-Rosen effect. (The original paper dealt with positions and momenta).

In 1935, Einstein, Podolsky, and Rosen published their thought experiment in a paper entitled, 'Can Quantum-Mechanical Descriptions of Physical Reality be Considered Complete?' At that time, Bohr, Heisenberg, and proponents of the Copenhagen Interpretation of Quantum Mechanics were saying that quantum theory is a complete theory even though it doesn't provide any picture of the world separate from our observation of it. (They're still saying it). The message that Einstein, Podolsky, and Rosen wanted to convey to their colleagues was that the quantum theory is not a 'complete' theory because it does not describe certain aspects of reality which are physically real even if they are not observed.

The message that their colleagues got, however, was quite different. The message that their colleagues got was that the particles in the Einstein-Podolsky-Rosen thought experiment somehow are connected in a way that transcends our usual ideas about causality.

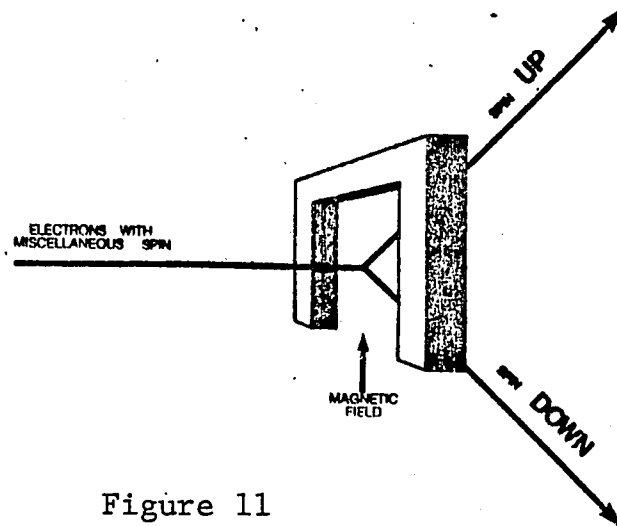


Figure 11

The spin of a subatomic particle can be oriented by a magnetic field. For example, if a beam of electrons with randomly oriented spin is sent through a particular type of magnetic field (called a Stern-Gerlach device), the magnetic field splits the beam into two smaller beams. In one of them all of the electrons have a spin up, and in the other all of the electrons have a spin down. If only one electron goes through this magnetic field, it will come out of it with either a spin up or a spin down. (We can design the experiment so that the odds are 50-50). (See Figure 11)

If we reorient the magnetic field (change its axis) we can give all of the electrons a spin right or a spin left instead of a spin up or a spin down. If only one electron goes through the magnetic field when it is oriented this way, it will come out of it with either a spin right or a spin left (equal chance either way). (See Figure 12, next page).

Now if the axis of the Stern-Gerlach device in our hypothetical experiment were changed to make the particles spin right or left instead of up or down, the experiment would look like this:

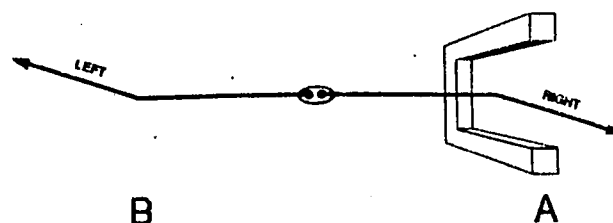


Figure 14

The particle in area A would have a spin right instead of a spin up. This means that the particle in area B would have a spin left instead of a spin down. Its spin is always equal and opposite that of its twin.

Now suppose that the axis of the Stern-Gerlach device is changed while the particles are in flight. Somehow the particle traveling in area B 'knows' that its twin in area A is spinning right instead of up, and so it spins left instead of down. In other words, what we did in area A (changed the axis of the magnetic field) affected what happened in area B. This strange phenomenon is known as the Einstein-Podolsky-Rosen (E.P.R.) effect."⁸³

The "E.P.R. Paradox" has been referred to as a "Pandora's Box" by some of the modern physicists, since it appears to challenge Einstein's upper limit of the speed of light as being the limiting factor for the transfer to "information" between any two points in space. In the experiment just described, points A and B may be widely separated in space, yet the shift in the spin axis of particle A is somehow transmitted instantaneously to particle B, i.e., faster than the speed of light. Since by

1935 Einstein's special theory of relativity was generally regarded as one of the cornerstones of the "New Physics" (every time it had been experimentally tested, it had proven valid), no one was willing to sacrifice any of its tenets in order to salvage the quantum theory. It is reported that Einstein himself was delighted with this "paradox", believing that it pointed to an incompleteness in the theory of quantum mechanics.⁸⁴

What is being suggested here in this essay is that a possible resolution of the E.P.R. Paradox may be found (by the physicists) by pursuing certain interrelationships pointed to by Dr. Wolff in his Cosmology. (The author of this work is not a physicist. His educational background is Electrical Engineering and Process Control computers). The suggestion is simply that a promising and "fertile field" for the qualified physicist to plow might be found in Dr. Wolff's concept of the "Manifest" world being a projection from a higher order of being. In other words, Dr. Wolff has said that the world of ponderable matter is supported by, and has its roots in a "higher order", which he calls the "Matrix" or "Plenum", which transcends the limitations of time, space, and causality. If Dr. Wolff is correct, there may not be an "information transfer" between the two particles of the E.P.R. Paradox at all. Rather, they may be viewed as one event when considered as a "projection" from a common "ground" or "timeless root of all being," which is pure Consciousness-Without-an-Object, according to Dr. Wolff.

Recall that in the discussion of the "Manifest Realms" of Dr. Wolff's Cosmology (refer to Figure 9), that everything below

the Line of Demarcation is subject to Law and causality. Below the Line, "matter" is characterized by its dynamic, wavelike behavior in time. But above the Line of Demarcation, time and space are simply irrelevant in the domain of the Matrix, according to Dr. Wolff. In an earlier quote, Dr. Wolff said, "Here, consciousness, substance, and energy, or life, are interchangeable terms." Since in Dr. Wolff's Cosmology Consciousness is taken to be primary, matter is not simply a "projection" from the Continuum, but it is a "creative projection," as may be seen in his "Commentaries on the Aphorisms":

"Aphorism 35:...Out of the Great Void,
Which is Consciousness-without-an-object,
the Universe is creatively projected."

Dr. Wolff then comments on this Aphorism:

"'Creative projection,' as here understood, is wholly other than the theological conception of 'creationism.' There is here no creative act of a Deity that stands, essentially and substantially, separate from the created, nor does the creative projection produce souls de novo. Essentially, 'creative projection' is identical with 'emanation,' but with the additional implication that the emanation depends upon an initial act of will, which was not necessary. That is, the act of will is not necessary in the sense that it might not have been, but necessary in the sense that without the act of will there would have been no universe. An absolutely necessary emanation would not be a creative projection."⁸⁵

Obviously, the perspective taken by Dr. Wolff when describing "creative projection" is a very abstract one; a sort of "inside view" of the Manifest Universe from the standpoint of an unmanifested actuality, which he refers to as "Transcendental Consciousness," or "Absolute Consciousness." It is the view of the "Lower World" as

it appeared to him from the "Higher World," derived from his Recognition Experience of 1936. In Pathways Through to Space, Dr. Wolff comments on the "interplay" between the two worlds:

"But this Higher World is to the Lower as the Infinite is to a finite manifold, and the whole universe depends upon the former as its sustaining principle. What becomes energy and ultimately matter here is derived from the Substance of that higher level. The interplay between these two domains, speaking now from the relative standpoint, is not an event which took place once for all in the historic past, but one which continues, either intermittently or continuously, throughout the present."⁸⁶

Thus we find in Dr. Wolff's view that there are continuous interchanges (or "interplay") between the "Unmanifest" domain and the "Manifest" domain, and that the Manifest Universe (the Lower World) is actually sustained by the Unmanifest Universe (the Higher World).

Apparently Dr. Bohm has also come to the conclusion that the Manifest world must ultimately be viewed as a projection from a higher-dimensional reality, as Dr. Wolff suggested in his writings of 1936. Yet, Dr. Bohm has reached this conclusion by a completely different "pathway" of his own, the pathway of quantum physics. In his book, Wholeness and the Implicate Order, Dr. Bohm comments on his conclusions regarding the "E.P.R. Paradox":

"For our purposes, it is not necessary to go into the technical details concerning this non-local relationship (of the E.P.R. Paradox). All that is important here is that one finds through a study of the implications of the quantum theory, that the analysis of a total system into a set of independently

existent but interacting particles breaks down in a radically new way. One discovers, instead, both from consideration of the meaning of the mathematical equations and from the results of the actual experiments, that the various particles have to be taken literally as projections of a higher-dimensional reality which cannot be accounted for in terms of any force of interaction between them."⁸⁷

It would appear that Dr. Bohm is in agreement with Dr. Wolff on the proposal that matter is a "projection" from a Higher Order of Being. In his book, Dr. Bohm continues with a lengthy analogy of two separate closed-circuit television cameras focused on the same fishtank, producing two different images, to illustrate his point. The analogy appears relevant here, and his summary statement of the analogy is included in the following quotation from Dr. Bohm's work:

"Of course, we know that the two images do not refer to independently existent though interacting actualities (in which, for example, one image could be said to 'cause' related changes in the other). Rather, they refer to a single actuality, which is the common ground of both (and this explains the correlation of images without the assumption that they causally affect each other). This actuality is of a higher dimensionality than are the separate images on the screens; or, to put it differently, the images on the screens are two-dimensional projections (or facets) of a three-dimensional reality. In some sense this three-dimensional reality holds these two-dimensional projections within it. Yet, since these projections exist only as abstractions, the three-dimensional reality is neither of these, but rather it is something else, something of a nature beyond both."

Moreover, it appears that the concept of viewing matter as a "projection" from a Higher Order (originally described by Dr. Wolff in his writings of 1936) may eventually culminate in a possible resolution of the E.P.R. Paradox by the New Physicists, if Dr. Bohm is correct in his conclusions:

"What we are proposing here is that the quantum property of a non-local, non-causal relationship of distant elements may be understood through an extension of the notion described above. That is to say, we may regard each of the 'particles' constituting a system as a projection of a 'higher-dimensional' reality, rather than as a separate particle, existing together with all the others in a common three-dimensional space. For example, in the experiment of Einstein, Podolsky, and Rosen, which we have mentioned earlier, each of the two atoms that initially combine to form a single molecule are to be regarded as three-dimensional projections of a six-dimensional reality...Thus (as is, indeed, further shown by a more careful consideration of the mathematical form of the quantum laws involved here), each electron acts as if it were a projection of a higher-dimensional reality."88

By now, some of the complementary aspects of the cosmologies of Dr. Wolff and Dr. Bohm should become apparent to the reader. Without becoming overly emotional at this point, it must be admitted that the author of this essay was quite amazed to find the following statement being made by Dr. Bohm:

"One must then go on to a consideration of time as a projection of multidimensional reality into a sequence of moments.

Such a projection can be described as creative, rather than mechanical, for by creativity one means just the inception of new content, which unfolds into a sequence of moments that is not completely derivable from what came earlier in this sequence or set of such sequences. What we are saying is, then, that movement is basically such a creative inception of new content

as projected from the multidimensional ground. In contrast, what is mechanical is a relatively autonomous sub-totality that can be abstracted from that which is basically a creative movement of unfoldment."89
(Note: the italics are mine- m.v.s.)

Now compare the statement just given by Dr. Bohm to the words of Dr. Wolff (written many years earlier) regarding the creative content of such a "projection":

"Aphorism 6...Within the bosom of Consciousness-Without-an-Object lies the power of awareness that projects objects...

The projective power of awareness is a priori, i.e., it precedes experience. It is true that experience, in turn, reacts upon this power, but it acts as a stimulating, rather than as an essential agent. The whole externally causal series consists only of such stimulating agents. While the stimulating agent may be viewed as a sort of trigger cause of subsequent creative projection, it is not the material cause. The purely creative phase of the projective power is a first cause from which effects follow, but that is not itself an effect of previous causes. At this point energy flows into the universe of objects. It is a misconception that an equation may be set up between any two states of the universe of objects, as between any two such states there may be an actual increase or decrease of content. The creative projection effects an increase of content."90
(Author's note: again, the italics are mine.)

It should be mentioned that, however striking the similarities may appear between the cosmologies of Dr. Wolff and Dr. Bohm, they are only as valid as the underlying assumptions which have been made regarding a correspondence in meaning between certain terms used by these writers. In the effort to maintain intellectual and literary honesty, the following list of terms, placed side-by-side, is offered, so that the reader may determine for himself whether such "correspondences" are justified:

Dr. Wolff's term:
"Continuum"/ "Unmanifest Realm"/
"Matrix"/ "Plenum"

"Manifest Universe"

"Introception"

Dr. Bohm's term:
"Implicate Order/ "Holo-
movement."

"Explicate Order"

"Insight"

The one "correspondence" in this list which has troubled this author the most is the assumption that Dr. Bohm's term "Holomovement" is roughly equivalent to Dr. Wolff's term, "Unmanifest Realm." What is troublesome about this is the notion of "movement" implicit in the term "Holomovement." "Movement", which is basically dynamic in nature, would seem to require that it be placed below the Line of Demarcation (i.e., in the "Manifest Realm") to be correct. However, if it is allowed that there is a "flowing movement" in the Continuum (Dr. Wolff has said that in the Continuum, "everything flows into everything else"), then perhaps the correspondence is allowable. In the end, it must be left to Dr. Bohm and the physicists to define the precise meaning of the term "Holomovement." Dr. Bohm further differentiates between "matter gross" and "matter subtle," which may shed more light on the scientific meaning of the terms.

Perhaps now a sufficient amount of preliminary groundwork has been laid for the consideration of how consciousness and the human mind/brain potential may be comprehended in terms of an "undivided wholeness." At this point in our history, it is

felt by many mystics and scientists alike that such a holistic view offers our best hope for a possible resolution of the problems of alienation and fragmentation described at the beginning of this essay. Let us examine first what Dr. Bohm has said on this subject:

"The question that arises here, then, is that of whether or not (as was in a certain sense anticipated by Descartes) the actual 'substance' of consciousness can be understood in terms of the notion that the implicate order is also its primary and immediate actuality. If matter and consciousness could in this way be understood together, in terms of the same general notion of order, the way would be opened to comprehending their relationship on the basis of some common ground. Thus we could come to the germ of a new notion of unbroken wholeness in which consciousness is no longer to be fundamentally separated from matter.

Let us now consider what justification there is for the notion that matter and consciousness have the implicate order in common. First, we note that matter in general is, in the first instance, the object of our consciousness. However, as we have seen throughout this chapter, various energies such as light, sound, etc., are continually enfolding information in principle concerning the entire universe of matter into each region of space. Through this process, such information may of course enter our sense organs, to go on through the nervous system to the brain. More deeply, all the matter in our bodies, from the very first, enfolds the universe in some way. Is this enfolded structure, both of information and of matter (e.g., in the brain and nervous system), that which primarily enters consciousness?

Let us first consider the question of whether information is actually enfolded in the brain cells. Some light on this question is afforded by certain work on brain structure, notably that of Pribram. Pribram has given evidence backing up his suggestion that memories are generally recorded all over the brain in such a way that information concerning a given object or quality is not stored in a particular cell or localized part of the brain but rather that all the information is enfolded over the whole. This

storage resembles a hologram in its function, but its actual structure is much more complex."⁹¹

Before proceeding with the implications of the (possible) holographic operations of the human brain, let us turn our attention to certain considerations of the human mind/brain functions described in Dr. Wolff's writings. The central thesis of his work entitled Introceptualism is grounded upon the existence of a new function or organ of human consciousness, which Dr. Wolff calls the "introceptive" organ of cognition. The Introceptive Organ (or the "Mystic Organ") of the human mind allows a new way of knowing, in addition to the cognitive modes of perception and conception, according to Dr. Wolff. In other words, the arousal of the active functioning of the Introceptive Organ acts as a "bridge" which permits direct perception of the Continuum, or the Transcendental Realms of Consciousness. Dr. Wolff says:

"I ground my thesis upon a new function of consciousness, which I have called 'introception,' and which implies a function differing from both the empiric and the conceptualistic, as those notions are currently understood. It also implies a function more profound than the conative principle of Will as understood by Schopenhauer. So I am calling this view 'Introceptualism,' in which the word 'introception' is given a dual reference; first, to a function of consciousness, and, second, to the content or state of consciousness rendered accessible by the function."⁹²

In Pathways Through to Space, Dr. Wolff describes this new "dimension" as a "fourth dimension" of human consciousness. A whole chapter is devoted to the subject of "the Symbol of the Fourth Dimension," where he defines the term "dimension" in the

mathematical sense of "degree of freedom":

"This leads to the point where we are enabled to apply our symbol. Here the fourth dimension represents the Higher Consciousness, by whatever name we may know It, such as Cosmic Consciousness, Specialism, Christ Consciousness, Transcendental Consciousness, Nirvana, etc."

Dr. Wolff goes on to suggest possible evolutionary implications for mankind in general, as individuals begin to experience this Higher Consciousness directly:

"The sum-total of all possible Higher Consciousness may well involve many dimensions, perhaps an unlimited number, but for mankind, in general, the next step is well represented by the Fourth Dimension."⁹⁴

When Dr. Wolff refers to the meditative state wherein his consciousness has entered and become identified with this Higher Consciousness, he sometimes refers to it as being "in the Current." He explains that consciousness has certain properties analogous to an "energy field," which may, under certain conditions, be "induced" by one who is "in the Current" into one who is not "in the Current." If Dr. Wolff is correct in this, it might offer a somewhat more scientifically acceptable explanation behind the notion of "group meditations" in the presence of one who serves as a "center of induction," as in a monastic setting, or a "Sangha" (a group of students of the Higher Consciousness). The following "poem" is taken from the prose form of Dr. Wolff's writings to illustrate his concept of "induction" of Higher Consciousness:

On "Induction"

"There is one factor that has been variously called
'Leavening', 'contagion', and 'induction';
To be in the presence of a Man
Who has become identified with the Light
Is to be in a field of Consciousness
Which tends to arouse
Within the individual
Some degree of the corresponding
Kind of Consciousness.
Consciousness may be regarded
As an Energy,
And in this domain
We have events or tendencies
That are more than analogous
To certain properties of electricity.
Thus, the "Induction" of Consciousness
Is closely related to
Induction in electricity.
The meaning of 'induction',
In this connection,
Is analogous to that of the
'Leavening' of Jesus,
But has the added advantage
Of affording greater intelligibility,
Given our present state
Of scientific knowledge.

The individual consciousness
In the receiving individual
May be slight, or of any degree
Up to one of high intensity.
After the removal of the presence
Of the inducing Consciousness,
The glow of the induced Consciousness
May persist for a longer or shorter time.
But repeated inductions tend, finally,
To produce a condition
Such that the latent and indigenous
Inner Light of the individual
Is aroused sympathetically into pulsation,
Thus, ultimately 'catches on', as it were,
For Itself.
When this happens, the individual has
For the first time
Become established in his own Center
In the higher sense.
He becomes One
Grounded in the Higher Knowledge,
Instead of being
Merely a student.
In the principle of induction
We have an enormous instrument
For effecting the Awakening
Of the Higher Consciousness,
In some measure at least,

In individuals who,
For some reason or other,
Fail to put forth
The requisite degree
Of self-directed effort
To be effective
In their own strength.

Those who aspire
Toward the Awakening
Would do well to seize
Every opportunity available
To come within the sphere of Those
Who can serve as
Such Centers of Induction.
The presence of these Centers
Spells opportunity for all men
Who are near them.

At the same time,
To realize the best results,
It is not sufficient
To be merely passively present.
In addition, there should be
Thought, study, and active aspiration
In the direction of the Light.

This is analogous to
The cultivation and watering of a seed
That has been sown by a Sower
And thus produces a condition

That prevents the sowing
From having been done in vain.
The meaning I am trying to convey
May be illustrated by a familiar
Phenomenon in magnetism:
When a bar of steel
Is made into a magnet,
It is said that a certain force
In the molecules or atoms
Is 'polarized' in some measure,
With the result that
One end of the magnet is 'positive',
And the other 'negative'
(Or 'North' and 'South' 'poles',
If you prefer).
In a non-magnetized bar,
This force exists,
But acts in all directions
Among the molecules
(In a random fashion)
So that there is little or no
Residual magnetic energy
That acts beyond the bar itself.
The result is that
Such a non-magnetized bar

Is a sort of neutral or closed field,
Although there is just as much "force"
In it as in the magnetized bar.
Now, subject-object consciousness
May be thought of
As a non-magnetized bar
Which forms a closed field
Within itself.
In this way,
The Beyond is shut off.
But the man who is 'magnetized'
Is in a position
To pierce beyond the shell or closed field
Of relative consciousness.
So long as he
Maintains that magnetization,
He stands correlated with the Beyond.
Similarly, to the extent that
That magnetism is lost,
He tends to drop back
Into the field of mere
Subject-object consciousness.
A magnetized steel bar
Can lose its magnetism very easily
As it is brought into contact
With non-magnetized
Pieces of iron,

As in ordinary usage.
The same phenomenon occurs
When an individual
With a magnetized consciousness
Moves in the field
Of ordinary consciousness.
There is a dissipation
Of the integrated force,
And the chaotic condition
Of the environing consciousness
Begins to invade the former.
This leads to something
Analogous to demagnetization.
But this demagnetized condition
Can be corrected subsequently
By the action of the Current,
Just as a current of electricity
May be employed
In the re-magnetizing
Of a weak magnet.-
But all this takes effort,
Time, and the right conditions.
It is true that
So long as the Current is active,
The magnetized man can dominate
The demagnetizing influence
Of the environment.

In addition, he will tend to
Magnetize the latter.
However, it is not easy to
Maintain the Current
Under the conditions
Imposed by the modern cities.
The 'magnetized' condition
Is that which is meant by 'isolation'.
Physical solitude,
In the midst of wild nature,
Particularly at high altitudes,
Affords an especially favorable condition,
Though this is not essential.
This should make clear
Something of the rationale
Of the hermit-life of
So many Sages,
And also why the Illumined States
Are so sporadic and temporary
In the cases of most of those
Who move in the midst
Of general society,
Particularly in the West.
It also makes clear
The rationale of the
Monastic or ashrama life.

For in this, when it is genuine,
We have a community formed
Of those who have attained
Some degree of Recognition,
Together with others who
Aspire to this State.
Life in such a community
Is a great help to the latter,
And is not too severe a load
For the former.
Below the ashrama,
The next most favorable life
Is in the communities
Where the population
Is not greatly concentrated
And primitive nature
Dominates the environment.
In contrast, the most
Unfavorable condition of all
Is afforded by the modern megalopolis,
For in this we have the
Rushing and 'jazzed' consciousness,
Heavily concentrated on the
Surface of things.
However, it is precisely
In the megalopolis

That the human need
Of the God-Realized Man
Is greatest.
The average city dweller
Faces the greatest soul-starvation
And maiming of all.
The city life supplies the greater bulk
Of suicides, insanity cases,
And pathological radical movements,
As well as a strong tendency
Toward sterility.
All of these are symptoms
Of a very abnormal
And unwholesome life.
So the need in the city
Is the greatest of all,
But likewise it is just in the city
That the danger of suffocation
Of the Realized Consciousness
Is greatest.
How can this problem be solved?
It certainly calls for
The highest kind of Generalship! "95

It is the opinion of this author, based on the studies of his writings and lectures, and personal conversations with Dr. Wolff, that the "Introceptive Organ" may function as a sort of biological "energy transducer" which, under the proper conditions, could allow a direct accessing of this Transcendent Consciousness. A "transducer" is a device for converting energy from one form into another. A well-known example of a transducer would be an ordinary "loudspeaker," which changes electrical energy into acoustical energy. Dr. Wolff has never used the term "transducer," as far as this author is aware, since it is a highly technical term, and one which would not be expected to be in his vocabulary. Yet it appears to this writer to be a more technically "fitting" analogy to describe the bioenergetic "interfacing" of the Introceptive Organ to the Higher Consciousness realms. (Again, it is strictly the opinion of the author of this essay, and not Dr. Wolff's own terminology).

The possibility that the Introceptive Organ of the mind might serve as a "bridge" to the Higher Dimensional reality (or the "Implicate Order") would appear to be a matter of great interest to the "New Physics," in the opinion of Dr. Bohm. In the aforementioned interview of Dr. Bohm by Dr. Weber, Dr. Bohm emphasizes the importance which such a "bridge" or "connection" would have for the New Physics:

"Weber: So you're saying that when consciousness breaks free from those restraints of three-dimensionality it encounters something altogether new and different.

Bohm: Well, it becomes-it is something new and different.

Weber: It is. Yes. And that would be the connection, then, you would draw between the new physics and our understanding of consciousness.

Bohm: Yes. Insofar as we consider consciousness to be some material process we could say it could move into new domains of matter as in physics we have been moving in super-conductivity and super-fluidity, new highly ordered domains of matter, new highly ordered domains of consciousness. Now I think that some people are looking at this notion, but in general, of course, physicists are not terribly interested in it.

Weber: For the reasons you talked about earlier?

Bohm: Yes.

Weber: But then you're saying that just as physics-the new physics has revolutionized the way we look at what we think of as the world out there, so you're saying the new consciousness revolutionizes the way we look at what before we thought of as the observer.

Bohm: Yes. Well that's part of it. But see, I think that primarily what we are doing is getting rid of this tremendous discrepancy between consciousness and the material world which is its content, saying that they are both of the same general nature. But to get beyond them we have to come up to the end of thought. It's not enough to say we are going to consider a consciousness which is more than this limited three-dimensional kind. The trouble is that we are still using the three-dimensional consciousness to guide us in that.

Weber: To talk about it?

Bohm: To talk about it. The point of meditation would be to stop doing that.

Weber: ...What does meditation tell us in all these factors that we've been talking about: the holomovement, space and time, and 3N-dimensional reality?

Bohm: I think that meditation would bring us out of all the difficulties we've been talking about. You see, the point is that we have been talking about something which is a kind of bridge. This whole construction of the implicate order is a kind of bridge. We can put it in our ordinary language but its implication leads somewhere beyond. At the same time, however, if you don't cross the bridge and leave it behind, you know, you're always on the bridge. No use being there!

Weber: Yes, that's true, you're stuck there!

Bohm: So the purpose of a bridge is to cross. Or, more accurately, we could perhaps think of a pier, leading us out into the ocean and enabling us to dive

into the depths. So we could say that if we could consider it seriously, aside from its utility in understanding matter, the bridge or pier would help us to loosen our way of considering consciousness so that it doesn't hold so rigidly. But I think that the question of consciousness is, is beyond. The actuality of this 3N-dimensional consciousness could not be attained by studying physics with our three-dimensional consciousness. It might form a bridge or pier of some sort that moves us a certain way but, somewhere we've got to leave thought behind, and come to this emptiness of this manifest thought altogether and of the conditioning of the nonmanifest mind by the seeds of manifest thought. In other words, meditation actually transforms the mind. It transforms consciousness.

Weber: On the spot?
Bohm: On the spot."⁹⁶

Thus, if Dr. Wolff and Dr. Bohm are correct in their thesis that through "Introception" (or "Insight") the human mind, under certain conditions, can access the Unmanifest realms directly, then certain "psychic phenomena" such as "precognition," "extra-sensory perception," and even "psychokinesis" may begin to find long sought-for solutions. Dr. David Loye, a former member of the Princeton and U.C.L.A. Medical Schools, sees the "Pribram-Bohm holographic mind theory" as offering the greatest hope yet for reaching the solutions just mentioned. In his book on new discoveries in the mind/brain sciences called The Sphinx and the Rainbow, Dr. Loye describes how the "holographic theory" could solve certain problems:

"How information is transmitted 'psychically' from one person or place to another has long baffled researchers. Hundreds, if not thousands of experiments over at least a century have failed to uncover any evidence that 'psychic' transmission is conducted electromechanically, as with radio and television or

by any other known means. Now, in one bold stroke, holographic theory could eliminate this problem. The key is the fact that in the hologram, each part contains the information of the whole. If we are each parts of a larger whole-that is, if our minds and bodies are, in effect, holograms within the larger hologram of the universe- then there is no transmission problem, for the information is already within us!"⁹⁷

If, as Dr. Wolff has suggested, the Continuum stands outside of time, space, and causality, how can the human mind (via the Introceptive Organ) "make sense of", or "read" certain patterns which are without past, present, or future, but rather "all-at-once"? Dr. Loye points to the neurological discoveries of Karl Pribram and Sir John Eccles as a possible answer:

"One bit of an answer may lie in the neurological probes of Karl Pribram, Sir John Eccles, and others that indicate how images are formed holographically around the synapse at each neural junction in our brains. This would be a level well below consciousness that is only a few steps removed from the infinitesimally small world of the subatomic particle. Could this be the meeting place for the message conveyed by the patterning of particle activity and the receivers and first interpreters in the glia and neurons of our brains?

Another bit of an answer may lie in related work to solve one of the toughest problems of the mind-body linkup. Scientists pondering precognition as well as other problems of consciousness have been blocked by one seemingly impassable chasm. How matter can influence mind and mind influence matter is no problem for the open-minded physicist to visualize at the micro- or subatomic level. But how on earth can one make the leap from the microlevel to our own macrocosmic reality? For what can be seen as a fluidity of movement at the subatomic level has frozen into what seems to be a solid block at our sensate level. Again the work of Pribram, Eccles, and others, suggests an answer. 'Slow-wave potentials' around the synapses are involved in the making of a holographic

image, they find, and this slow-wave activity has been shown to be activated by infinitesimally small impulses. There is also the new work in what are called cellular automata, which presents essentially the same kind of room for speculation. Thus it is theorized that very tiny 'shoves' at this level may trigger vast chain reactions..."⁹⁸

In his writings on the subject of "transfinite arithmetic," Dr. Wolff describes a mathematical analogy to illustrate how the "Macrocosm" can be contained in the "Microcosm," and vice-versa. In his essay entitled "Foundation Principles of the Secret Science," Dr. Wolff discusses how the individual mind "becomes the container of the whole Universe," and how the student must learn to "fuse the drop with the Ocean, and the Ocean with the drop":

"There is a logical analogue which represents a part-whole relationship of the type which unites the Universal and the individual Monad as identical. This is found in the mathematics of the transfinite. This is a principle that was first systematically developed by the German mathematician Dedekind in the latter half of the nineteenth century. The principle Dedekind enunciated was that infinite manifolds are of a type such that a proper part may be taken which is equal to the whole. In fact, this property has become the basis of defining infinite manifolds."

Dr. Wolff then offers a lengthy illustration of the mathematical part/whole relationship suggested by Dedekind, which shall be omitted here. In the interest of brevity, only his conclusions will be given in the following summary statement:

"It should be apparent from the foregoing discussion that the Macrocosm is not a magnitude in the relative sense which contains a number of Microcosms, just as a gallon contains four quarts of water. On the contrary, we may equally well regard the Microcosm as

containing the Macrocosm as to take the reverse view. Thus man is equally the all in all as well as the reflection of the All. Hence the fully realized Yogi finds himself possessing the whole Universe, and thus transcends all action."99

This concept of Dr. Wolff's is important, since it foreshadows the notion of the "Hologram," in suggesting how the "whole" may be contained within the "part" (which is so graphically shown by the breaking of a holographic plate into smaller pieces, with each piece still containing the image of the whole).

However, Dr. Wolff warns the students of Yoga against becoming too intrigued with what he calls "the incidental fruits of Yoga," or "minor siddhis" (i.e., certain "powers" of the Adept Mind, such as "precognition," "levitation," "psychokinesis," or control of the autonomic system of the body), since they may divert the student from the true goal of Yoga, which is Liberation, according to Dr. Wolff:

"Sankara warns, and so does The Voice of the Silence, against all intriguing with the powers that are incidental fruits along the path of Yoga. These include the power to control the autonomic system so that there can be demonstrations of control of the heartbeat and other functions. No doubt this is very impressive to the physiologist and the medical materialist. In fact, so much so that it is entirely possible that proof of this power by demonstration could drive the latter into a psychotic condition. But the literature tells us of many, many other powers. But the reason for the avoidance of interest in these, of putting forth the specific effort for the breaking out of these powers, is that it drains the energy that is needed for the drive to kingly Power involved in Liberation. The interdiction of concern with these powers applies only to those who are on the Way, not to those who have attained the fruit of Liberation. It is then possible, if the interest is so inclined, to return to the development of these minor siddhis. One may consciously control the functions

governed by the autonomic nervous system; one may, without the aid of the post (office), deliver letters upon the pillow of the recipient; or one may feed 5,000 with 3 loaves and 5 fishes. None of these are 'miracles', or violations of law, but simply the results of mastery of the subtler aspects of law in nature. But all this is only of incidental value. Liberation is the Supreme Goal, the Supremely desirable objective, and he who attains this may find that all else is added to him, if not in actuality, then as a potential."¹⁰⁰

As Dr. Wolff mentioned, the power of the human mind to exert control over the autonomic nervous system has, indeed, impressed the modern physiologists and the medical profession. Experiments conducted in medical "biofeedback" laboratories over the past few years seem to indicate that the role of consciousness (especially conscious mental activity) in the evolution of health and disease has been seriously undervalued. In his book, Space, Time, and Medicine, Larry Dossey, M.D., comments on these experiments in "biofeedback":

"In a biofeedback laboratory, subjects are attached to various feedback devices- usually solid state electronic instruments- that measure body events of which one is usually unaware, and that feed back this information to the subject by way of a moving meter, a blinking light, or a variable sound. The subject then uses this information to create further change in what is being measured. For example, he may learn to lower or increase his heart rate or blood pressure, increase the blood flow to specific body regions, or increase or decrease the electrical activity in certain muscle groups. The control and specificity of these skills is quite remarkable: many subjects can learn to increase blood flow to a single finger or to a particular circumscribed area on the forearm. Or they can learn to control the activity in the muscle

cells supplied by a single motor nerve!

What goes on in biofeedback laboratories can hardly be accounted for by traditional learning theory. Most subjects have never had previous experiences to which these events can be contrasted and compared. Yet they are capable of exercising control over certain body processes to a degree regarded as impossible only a decade ago...

What do these new ideas portend for medicine?

The new view of consciousness asserts unabashedly that conscious mental activity exerts measurable effects on the physical world- a world that includes human bodies, organs, tissues, and cells. Mind becomes a legitimate factor in the unfolding of health and disease."¹⁰¹

The future ramifications of a "new view of consciousness" wherein Consciousness is viewed as Primary, are too numerous to mention in an essay on the New Physics. But the ideas portended by the cosmologies of Dr. Wolff and Dr. Bohm go far beyond merely scientific problem-solving considerations. The goal is ultimately for humanity to attain direct "Realization," in the words of Dr. Wolff:

"When one has solved a scientific problem he has mastered something of instrumental value, he has achieved a means for facilitating some human purpose. But clearly, this is much less than the ultimate fulfillment of purpose and yearning. The growth of scientific knowledge is merely progress in a series where each last term leads on to a new problem with, apparently, no end. But the introceptive realization provides a terminal value. At one step the individual has reached the culmination of the infinite series of relative consciousness. This gives to the realized value a unique significance. It is more than an instrumental knowledge and more than the temporary satisfying of one desire in an endless series of desires. Desire as a genus is fulfilled, and the knowledge realized is culminating."¹⁰²

The direct Realization of higher states of Consciousness by humanity may offer our best hope for "survival of the species,"

as Dr. John C. Lilly has pointed out, in an interview by Omni Magazine:

"Omni: In your book, The Scientist you wrote, 'If we can each experience at least the lower levels of satori, there is hope that we won't blow up the planet or otherwise eliminate life as we know it.' Are altered states necessary to our survival?

Lilly: Yes, the experience of higher states of consciousness, or alternate realities- I don't like the term altered states- is the only way to escape our brains destructive programming, fed to us as children by a disgruntled karmic history. Newborns are connected to the divine; war is the result of our programmed disconnection from divine sources...

My experiences have convinced me that Eastern yoga philosophy is right: that there is a purusha or Atman (soul) for each person- one for the planet, one for the galaxy, and so on. As mathematician/philosopher Franklin Merrell-Wolff says in his book, The Philosophy of Consciousness Without an Object, consciousness was first- before the void even."103

Thus we find we are back at the beginning; the beginning of Franklin Wolff's "Realization" of the identity of the Self (the Atman) with the All (or Brahman), as symbolized in Figure 2, at the beginning of the essay. Dr. Wolff refers to this experience as a mystical realization of "Presence," which dispelled all feelings of "alienation" or "fragmentation" for him at once. At the end of the last chapter of his book, Introceptualism, Dr. Wolff describes his experience of this realized "Presence":

"It is not necessary to interpret Presence as meaning something beyond itself. It is the superlative value itself, without the intervention of agency...Presence is Identity, not

relationship. Conceiving it as relationship produces delusion. Presence is fullness of Life or of Consciousness. It is the normal condition and, for a being that had always been normal, the idea of Presence could never have arisen. Only those who were deluded through abnormal existence could feel the arising of a state of Presence, because, when realized, there is produced a contrast with the abnormal state. The realization of Presence is the sign that an insane man has at last become sane. It is conceived as a rare and strange state of consciousness in this world because this humanity has the perspective of the inmates of a lunatic asylum. For the truly normal, it is so natural as not to be noticeable.

In our ordinary usage we think of 'presence' in the sense of 'presence of.' It is thus conceived as the 'presence to a self of someone or some thing.' This is not the meaning of the mystical realization of Presence though, I must confess, a mystic who did not discriminate clearly between the mystical state, per se, and a subsequent complex of the memory of that state together with the ordinary consciousness might confuse the meaning. The mystical significance is nearer to the dictionary meaning as 'the state of being present.' The mystic is in the state of being present to himself, that is, in concentric relationship, rather than in the ordinary state of excentric relationship. Becoming consciously centered in the Center is to realize Presence."

Beginning with the problems of "alienation" and "fragmentation" (which have resulted from our "atomic" view of reality), we have come full circle in this essay with a final statement by Dr. Wolff which describes his "escape" from alienation, and the feeling that he was, at last, "coming Home":

"...the genuine realization of Presence might be said to have the value of escape from the alien, and centering in the proper... the realization had the value of being Home, in the most fundamental sense possible, of being right at last, of 'being on the beam,' in terms of modern technical slang, of everything being just what it should be, of at last being rationally attuned, and in every way in all stages, at the time, and ever since, it was most welcome."104

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