

Infinity and Consciousness

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How can there be any understanding or teaching of that which is wordless (i.e., inexpressible)? That can be understood and taught only by Samaropa—an ascribed mark.¹

Ascribed to the Buddha

Pure mathematics, in which the discerning student will find veiled the Wisdom Religion, may serve as a means to the Realization.²

Franklin Merrell-Wolff

Great clarity, great precision, great honesty—such are the characteristics of the individual man Franklin Merrell-Wolff, the author of this book. Since 1936 there is added a transcendental component. He is one of our precious fellow beings in whom has occurred a transfinite widening of consciousness. “Recognition” was his name for it in his first major book which was a personal record of transformation in consciousness.³ He would now describe this as the opening up of the faculty of “introception.”⁴ This is a term which we owe to Merrell-Wolff, in whose books—more than any other’s—we find described in precise Western terms the noetic quality of the yogic consciousness. The term ‘introception’ is constructed from the Latin *intro* (“within,” “into,” “in”) and *capere* (“take”). We may suggest as a capsulized definition of the “introceptive” or “yogic” consciousness that it is a “cosmic introspection.” In contrast to ordinary introspection, as considered in psychology, here the individual consciousness becomes cosmic while looking inward.⁵ The introceptive consciousness is responsive in the sense of “witnessing” but with a non-reactive detachment. This detachment from small self-interest orients the consciousness towards what is ultimately complete altruism—the non-ulterior Love often spoken of in religions. Introception is also affirmed to have other—noetic—value in providing us with a supremely vivid

¹ Theodore Stcherbatsky, *The Conception of Buddhist Nirvāna* (New York: Gordon Press, 1968), 51.

² Yogagñani, *Yoga: Its Problems, Its Philosophy, Its Technique* (Los Angeles: Skelton Publishing, 1930), 145. (Yogagñani was the pseudonym that Merrell-Wolff used for many of his pre-1936 writings.)

³ Franklin Merrell-Wolff, *Pathways Through to Space: A Personal Record of Transformation in Consciousness* (New York: Richard R. Smith, 1941). This work was reprinted by Julian Press (New York) in 1973.

⁴ Franklin Merrell-Wolff, *The Philosophy of Consciousness Without an Object: Reflections on the Nature of Transcendental Consciousness* (New York: Julian Press, 1973).

⁵ Merrell-Wolff has many discussions of the introceptive faculty in his books. One of the earliest technical definitions is found on p. 228 of *Pathways Through to Space*.

awareness of the intrinsic nature of all that is. Thus the introceptive or yogic consciousness complements as well as contrasts with the creative technological consciousness.

The evidence is overwhelming that the transformation in which the introceptive consciousness is awakened actually occurs in individuals. Further—as with the experiences which transformed Gautama to Buddha, or Jesus to Christ—they may affect human history to an extraordinary degree. Both the yearning for, and realization of, transcendental states of consciousness seem then to be individual and social facts, though it appears up to the present that the number who yearn far exceeds the number who realize. The question then arises for the “usual” human consciousness: how to live with this radical challenge—whether to deny or accept the reality of transformation of consciousness, and whether the denial or acceptance be unconditional or conditional. In view of the diversity of structures in which humans are immersed—religious, political, social, economic, academic and others—one can hardly speak of a single “usual” human consciousness. Nevertheless if one limits consideration to the generally recognized major psychological faculties—perception and conception—the issue becomes more clear-cut. How are the usual perceptions and conceptions, even highly evolved and refined, to accommodate what is purported to be a third organ of cognition—“introception,” in the apt nomenclature of Franklin Merrell-Wolff? Certainly the highly symbiotic perceptive and conceptive faculties do not easily give affirmation to this mysterious third faculty which is strictly neither perceived nor conceived. Here we must steer a course between arrant reductionists on the one hand and naive credulity on the other—between a sweeping dismissal, with a “nothing but” attitude, and an “everything claimed is true” attitude. However, we honestly own that though we eschew the extreme of naive credulity, we do take the position of resolute acceptance towards the existence of introceptive consciousness. It is our conviction that the advances in understanding of the universe, growing out of ordinary consciousness, not only remove the barriers but point the way towards accepting the existence of *an extraordinary noumenal consciousness different in nature from the perceiving and conceiving generally known*.

It will help remove some critical doubts if we recognize that our perceptions and conceptions constitute the *contents* of consciousness whereas the presumptive third (introceptive) faculty might relate to the *context* or “screen” of consciousness on which the contents are projected. It is thus possible in principle that, with the perceptual and conceptual contents reduced to a low noise level, a sensitized awareness of the context or screen could manifest—introception. This would be non-interfering or orthogonal to the contents. In the limit of zero noise, introception would be associated with “pure” consciousness or “consciousness without an object,” the title and subject of the author’s book immediately preceding this one.⁶ (The present volume is a continuation which may be read independently.) However much such remarks are evocative of the possibility of this fresh and wonderful cognitive faculty which opens the door on the previously unknown, they do not necessarily compel conviction of its existence. They do not strictly remove

⁶ This essay was originally written as the Introduction to *Introceptualism: The Philosophy of Consciousness Without an Object Volume II* (Phoenix: Phoenix Philosophical Press, 1981), which contains Parts 3 and 4 of Merrell-Wolff’s work *The Philosophy of Consciousness Without an Object*. The Julian Press edition contains Parts 1 and 2 of this work. An excerpted version of this essay was published in *Inner Paths* IV, no. 13 (March/April 1980), 39-45.

the conceptual or intellectual obstacles even to conditional acceptance. Only direct experience would give certainty. Such experience would establish the conditional existence of introceptive pure consciousness; we would say further that it exists unconditionally if it could be shown that it is potentially within the range of all consciousness — human, and in whatever other form it may occur within the cosmos. Notwithstanding these reservations, clear powerful and precise analysis, speaking the language of conception itself, can lower and even resolve the conceptual obstacles. This might be done individually in the realms of various major categories of thought —philosophical, mathematical and in the domain of the natural sciences. With the obstacles removed by effective analysis and parallels, these conceptual domains become allies in opening the door.

The present book, along with the larger work of which it is a part, is, in my opinion, a major landmark in the history of philosophy. In it the author accomplishes the indicated task of removing the obstacles to introception in the realm of philosophic thought. His qualifications for this task are impeccable. As a young man, having completed his studies and already teaching mathematics at Stanford, he renounced the prospective academic career; he had become convinced that this renunciation would facilitate his movement towards realization. This conviction was vindicated on August 7, 1936 when there began the profound series of transformations of consciousness described in his subsequent writings. In the ensuing years he has subjected these experiences to a thorough philosophical analysis affirming with great power that introception is the crowning empirical experience of philosophy.

There remain as possible allies in the effort to open the door to introception the domains of pure mathematics and of the natural sciences. Of the two, the former stands on its own foundation as an apex of human reasoning and also appears as the conceptual language of the sciences—certainly in the physical sciences and increasingly in the biological and social sciences. Hence the motivation for this essay in which we wish to give convincing analogues, metaphors, or paradigms, in modern mathematics, for introception. Franklin Merrell-Wolff (again by academic education, as well as a great natural gift for precision) is highly sympathetic to pure mathematics, and confirms its supportive role for introception. He indicates this in several places. In Chapter III on the New Realism he writes:

The third view, which is here called the “gnostic,” maintains that mathematical, and therefore logical, knowledge is essentially a priori, by which is meant that it exists independent of experience. It may be true that this knowledge does not arise in the relative consciousness, in point of time, before experience. Yet it is not derived from experience, however much it may employ language which is derived from experience. It is thus in its essential nature akin to mystical cognition—and hence gnostic in character—rather than similar to empiric knowledge.

In Chapter VI on Idealism he writes:

But when mathematics is related to introception it carries a religious force which is a kind of applied mathematics, but in quite a different sense. In the latter case, Truth is not an incidental notion employed by mathematics, but so largely becomes its soul that the word must be spelled with a capital T.

In the Epilogue of this volume we read:

There is frequent reference in the book to mathematical analogues. There is a reason for that. The underlying thesis is that the factuality of pure mathematics might be as much in doubt as the factuality of pure metaphysics. But as the factuality of pure mathematics is abundantly proven, there is the presumption that equally well the factuality of pure metaphysics may be proven.⁷

Finally, his view is most fully expressed in the original experiential record under the dateline of October 4, 1936:

Once one recognizes the fact that the relative world, or primary universe, is a valid part within the Whole and is relatively real, then the problem of cross-translation from the level of Cosmic Consciousness to that of subject-object consciousness is realized as being of high importance. The possibilities of cross-translation are admittedly limited. The immediate content of the Higher Consciousness cannot be cross-translated, but certain formal properties can be through the use of systematic symbols. In some respects it is like the old problem of the evaluation of irrationals in terms of rational number. The ultimate content of the irrationals cannot be given in the form of the rationals, yet, in the radical signs, we have symbols representing the essential unity binding the two sets of numbers. Just so soon as the mathematicians abandoned the effort completely to reduce the irrationals to rational form, and accepted the radical sign as an irreducible symbol of profound meaning, then they did succeed in integrating in their consciousness two quite differently formed domains of reality. This integration meant that the two domains were found to be logically harmonious, although that which we might call the 'affective' content was discrete. Cross-translation, in something of this sense, is possible with respect to Cosmic and subject-object consciousness. In fact, if the consciousness-equivalents of the entities and operations of pure mathematics were realized, we would find that, in that great science and art, cross-translation in a lofty sense already exists. The Root Source of pure mathematics is the Higher or Transcendent Consciousness, and this is the reason universal conclusions can be drawn with unequivocal validity in pure mathematics. The greater bulk of mathematicians fall short of being Sages or Men of Recognition because their knowledge is not balanced by genuine metaphysical insight. But they do have one-half of the Royal Science. Up to the present, at any rate, the fountain head of the other half is to be found mainly in the Orient. The union of these two represents the synthesis of the East and the West, in the highest sense, and is the prerequisite of the development of a culture which will transcend anything the world has known so far.⁸

⁷ Merrell-Wolff, *Introceptualism*, 28-9 (Chapter III), 129 (Chapter VI), 291 (Epilogue).

⁸ Merrell-Wolff, *Pathways Through to Space*, 208-9.

This masterly statement corresponds exactly to the saying ascribed to Buddha which is quoted at the beginning. It is in amplification of these statements that the present remarks are contributed by the editor.

We in modern science do not claim to have more than embryonic ideas about consciousness. In contrast, the traditional East, particularly in its ancient Shaivite and Vedic scriptures, together with the derivative six systems of Indian philosophy, and their formidable Buddhist opponent—the Madhyamika, does claim to have a well-developed understanding of consciousness. In the West, by practicing “outsight” energetically 500 years, we have been able to reach a powerful understanding of the outer physical (and, to some extent, biological) universe. It stands to reason and intuition that the wise men and women of the East by practicing *insight* for thousands of years would have come to a deep understanding of the inner universe of consciousness. Nevertheless, the success resulting from the insistence on a refined analytical and formalizable description of perceptual experiences of the outer world (which is standard in modern science) leads us to expect that these same analytical or mathematical methods may illuminate the subject of consciousness. Particularly relevant to our present inquiry is the analysis of “infinity”—a central theme in Merrell-Wolff’s reports of his own Yogic transcendental experiences as well as the visions of cosmogony in the ancient scriptures. In this essay we discuss infinity as considered in modern mathematics where it has undergone some fascinating developments. We then consider some further parallels with the foundations of modern physical science.

THE CONCEPT OF INFINITY IN MODERN MATHEMATICS

There is a statement in the Upanishads which speaks of the two infinities: (1) the universal Supreme Brahman or Self and (2) Creation or the visible universe—when the second emerges from or merges into the first, the first remains the same infinity.⁹ This is a remarkable anticipation of the concept of infinity as it is understood today. Infinite sets, which we discuss in the following in somewhat more technical terms, have just that characteristic property which no finite set has: in an infinite set a part can be equivalent to the whole. This means also that, unlike the finite set, no matter how many facsimiles of its parts are added to the whole, the infinite number of elements in the whole is not changed. This is quite opposed to what happens with a finite set.

Let us take an example to engage the imagination. Suppose we have an infinite hotel, with a principle of privacy so that there is only one guest to each room; suppose also that there is one room to each guest so that every room is filled and that there are no guests left out. Then a new guest arrives. Now if this were a finite hotel the management would have to say, “Sorry, try the

⁹ From the Brihadāranyaka Upanishad, Fifth Adhyaya, First Brahmana (also in the Prologue to the Isa Upanishad, as quoted from the White Yajur Veda, Book the Fortieth): “OM Infinite is that (the supreme Brahman), infinite is this (the conditional Brahman, or the visible universe). From the infinite (Brahman) proceeds the infinite. (After the realization of the Great Identity or after the cosmic dissolution) when the infinity of the infinite (universe) merges (in the Infinite Brahman), there remains the Infinite (Brahman) alone.” Swami Nikhilandanda, trans. and ed., *The Principal Upanishads* (New York: Bell Publishing, 1963).

hotel across the way.” But, if it is an infinite hotel there is no problem: install the new guest in Room No. 1, move “old” guest No. 1 to Room No. 2; move “old” guest No. 2 to Room No. 3, and so on. No guest is left unroomed and no room is left unoccupied. Now not only can the hotel accommodate one more guest, but it can accommodate a million more, or infinitely many more. And in fact, if we have infinitely many hotels, each of them infinitely large and all of them occupied, and we decide to dismantle all but one of these hotels, we can put infinitely many infinite hotel populations all into one hotel.

It is a characteristic property of an infinite set that a part can be equivalent to the whole, and from this follow all the consequences in the foregoing example. As we have said, this property was anticipated in the beautiful saying in the Upanishads in which, in some translations, the word “fullness” is used to designate what we call “infinity.” It was a brave mathematician named Georg Cantor (after the pioneering work of Bernhard Bolzano in 1851), who introduced the concept of infinity consistently, through the concept of set. The “new math” in which many modern children were educated is based on this concept of set.

Cantor’s own definition of a set was that “it is a multitude conceived of by us as a one.” We consider a collection of objects as one population and that makes a set. More picturesquely and explicitly, it has been suggested that we think of a set as follows: Imagine a transparent closed bag or impenetrable shell. Suppose that all elements of a given collection A, and no other objects, are present within the shell. This is a good way to visualize uniting all the elements into the set A.¹⁰

A set can be either finite or infinite, since it can contain either a finite or an infinite number of objects. Thus the concept of a set provides a very good foundation both for the mathematics of the finite and the mathematics of the infinite. For an example of the finite case, consider the set of all living people on earth. There is also a set of all living people who have passed their twenty-first birthday: it is a subset of the first set.

Sets and subsets can be infinite too. One of the first things that Cantor pointed out is that an infinite set has the property that an infinite subset can be equivalent to the whole (as with our infinite hotels). Now, how can that be? What do we mean by “equivalent”? And what does it mean for an infinite set to be not equivalent but “less than” or “greater than” another?

CARDINALITY

Even primitive peoples have two concepts of number: cardinal and ordinal. Ordinal number is the kind we are used to on an elementary level (1, 2, 3 . . .), when we not only encounter a finite set but have all its elements arranged in a definite *order*. Then ordinal number is based on straight counting. But this system of counting is not practical even for large finite groups (such as people in a big hall). There is, however, another way of measuring the size of a set—finite or infinite—by what is called “cardinal number” or “cardinality.” The cardinality concept involves matching between sets without restricting the orders of elements within the sets. We shall first explain the meaning of “equal cardinality,” and later the meaning of “greater” and “lesser” cardinality.

¹⁰ N. Ya. Vilenkin: *Stories about Sets* (New York and London: Academic Press, 1969)

Suppose we come into a large hall and are able to have a really good look at everything there. We see many people and many seats, with one person to each seat, and one seat to each person; every seat is occupied and no persons are standing. We see at once that there are just as many persons as seats because they are all paired off. This kind of one-to-one matching is usable with an infinite as well as a finite set. It is the way we measure one infinite set against another infinite set, and find them equal. What does it mean for one infinite set to be cardinally “smaller” or “larger” than another? Suppose that the hall is infinite and there are infinitely many chairs and infinitely many persons, but we see that by some systematic procedure—extrapolated to infinity—we can match all the chairs to a subset of all persons but we cannot by *any* procedure match all persons to chairs. In other words, although to every chair there is a person, there is not to every person a chair. (Every chair is occupied but for an unmatchable infinity of persons there is there is “standing room only”). We would immediately say there are fewer chairs than persons. This is how one defines “smaller than.” Alternatively expressed there are more persons than chairs. This how one defines “larger than.”

It is possible to construct an unending sequence of higher and higher infinite cardinal numbers—the so-called “transfinite cardinals.” The example with chairs and persons, while suggestive, is misleading. It is only the first of the transfinite cardinals which is “countable,” or “describable” by sentences made up of a finite number of words.

The transfinite cardinals are labeled not by Greek, or Roman, or Chinese characters, but by the Hebrew alphabet letters. The first one is called Aleph_0 , that is, the countable infinity, and the next one is called Aleph_1 . There arose the great question: Is the number of points C (for continuum) on a line, the next transfinite number following the cardinal number of integers? Or is there an Aleph_1 *between* C and Aleph_0 ? The hypothesis that there is nothing between is technically known as “the continuum hypothesis” and if it is valid then C is Aleph_1 .

Some very clever people tried for several generations to confirm or refute the continuum hypothesis. Finally it was proven by K. Gödel—whose general studies of the problem of consistency revolutionized formal logic—and P. J. Cohen that one can either accept (Gödel) or reject (Cohen) the continuum hypothesis. One has a consistent theory either way. The situation is similar to that which occurs with non-Euclidean versus Euclidean geometry. It is perfectly consistent either to abandon Euclid’s fifth postulate concerning the existence of a unique parallel to a given line through an outside point, or to accept this postulate. In the first case we have the two consistent systems of non-Euclidean geometry and in the second case we have the consistent system of Euclidean geometry. So in the same way it is possible to have numbers in-between Aleph_0 and C or not to have such numbers. Thus we are allowed to have different consistent systems of transfinite arithmetic.

The further development of the theory of sets is very interesting. It led to a revolution in mathematics because it provides a basis for both the mathematics of the finite and the infinite. One finds the theory these days in all kinds of books, some still called “set theory,” others “measure theory,” others “theory of real variables,” and so on. All the great branches of modern mathematics—functional analysis, topology, higher algebra—have set theory at their foundation. They in turn have many applications in modern science and in technology. Even in that grand old branch of mathematics, geometry, concepts which were originally taken for granted, such as ‘curve’, ‘surface’, and ‘volume’, have been revised. Propositions which everybody had thought were obvious, such as that a square is two-dimensional, a cube three-dimensional, and so on, had

to be re-examined, and very strange results were found by the mathematicians. Using Cantor's definitions, they found all kinds of new and bizarre mathematical objects coming into the mathematical zoo. For example, they found that there are infinitely prickly curves and also curves which have non-zero areas. If we define a curve as carefully as we can by a significant definition, then there are curves which are so complex and cover so much of a plane that they have a well-defined positive area. In contrast, there are domains which look two-dimensional—which look like surfaces—but which have no well-defined area. This can come about because we are dealing with a region for which the boundary curve turns out to have non-zero area. Therefore, if one adds the boundary to the region one has a larger area; if one takes it away, one gets a smaller area. All kinds of strange properties like this have emerged, and the mathematicians have become very careful in their definitions and very strict in their arguments.

And so too should we be in all formal matters. As we know, however, there are aspects of Reality which are not formalizable, and here the door must be left open to the intuition and insight by which alone the unknown may be experienced. The fact that the set of almost all real numbers, finite though each real number may be, requires an infinite expression in terms of the integers, evokes a resonance with the deeper levels of consciousness. Likewise the existence of an unending sequence of ever higher infinities is an intimation to us of the existence of higher levels of consciousness.

Referring back to the discovery of *alternative different systems* of arithmetic one can hardly overestimate the importance of the discovery that “both” possibilities are true in such instances but — let it be noted — not in conjunctive affirmation, but what may be called disjunctive or *complementary affirmation*: *There exists more than one geometry, more than one algebra, more than one transfinite arithmetic, etc.* This is a good place to refer to the devastating tetralemma dialectic (Catuskoti) of the great Buddhist anti-logician Nagarjuna (first to second centuries A.D.) The structure of this four-cornered negation which Nagarjuna employed to knock down (in good mathematical spirit by demonstrating internal contradictions) the arguments of those who attempt to analyze reality logically is as follows. There are four alternatives:

- i. A positive thesis
- ii. The opposite counter thesis
- iii. A conjunctive affirmation of the first two
- iv. A disjunctive denial of the first two

Clearly the fruitful development of mathematics shows the possibility of another alternative, modifying number (iii): both thesis and counter-thesis are true but in different systems, each self-consistent in itself. Thus might be resolved the remaining differences — subtler and lesser than the protagonists of each may have maintained — between Kashmir Shaivism or Sankara's Advaita Vedanta and Nagarjuna's Madhyamika Buddhism. Then the indescribable and translogical fullness of Shiva-Brahman and absolute subjectivity of Nirvana are complementary and equivalent.

Again, an informal response is evoked by the extraordinary theorem in formal logic which Gödel proved: in every sufficiently rich formal logical system there exist unformalizable elements which can neither be proved nor disproved. Such statements are called “undecidable statements.” (Echoes of Buddha and Nagarjuna!)

This theorem means that there exist unformalizable elements in every sufficiently rich formal system. It is not surprising that Gödel's discovery is regarded as one of the most profound of our time. It is a tremendous revelation to modern man that formal logic can prove its own limitations. One feels that this discovery is connected in a deep way with the principle which appears over and over again in Vedic science and in the entire Eastern traditional world view: the principle of inclusion or co-existence of opposites or, sometimes, the co-nonexistence of opposites. For example, the great Hymn of Creation in the Rig Veda begins: "There was not non-existence, there was not existence at that time . . ." One does indeed feel that an ancient door has been opened again by such theorems as Gödel's theorem. There is some profound nuance of meaning in that the principle of inclusion of opposites makes its appearance centrally in the ordering of those very infinities which provides such an evocative parallel to higher states of consciousness.

As Merrell-Wolff himself has described it, his realizations came in five stages.¹¹ The first stage can be summarized in the statement: "*I am Atman*" (universal consciousness — wherein the usual "point-I" has expanded to an "illimitable sphere" containing all objects); the second: "*I am Nirvana*" (pure subjective consciousness—context without content); the third: "*Substantiality is inversely proportional to ponderability*" (that is, "Reality is inversely proportional to appearance" or objects are structures of "lessness" not "moreness" in the fundamental field of reality — an insight which goes with "a state of inconceivable delight"). The fourth and fifth realizations which he denotes as "transcendental" relative to the first three are: "*I am Atman*" (in a profounder sense than the first—involving the actuality of the mystic death and disappearance of the difference between all selves) and the "*High Indifference.*" Merrell-Wolff does not assert that these five stages in the evolution of consciousness constitute the whole of truth. He is open to the possibility that there is an infinite sequence of ever more comprehensive levels of consciousness analogous to the sequence of ever increasing transfinite numbers. And we should remember the enormous subtlety of each of these infinite levels. As we have seen a part can be equal to the whole for each of the levels of infinite systems, which is reassurance to all of us because at any given level our consciousness is a part of the whole. *And we can only be part of the whole and equal to the whole if we are infinite: so there is an ultimate truth.*

THE INTROCEPTIVE COGNITION, SHAIVISM AND MODERN PHYSICS

A further remarkable parallelism, which I think will make a lot of difference in the future evolution of Yogic thought, is that the concepts implicit in Merrell-Wolff's cognitions come very close both to the grandfather spiritual tradition from India—Shaivism or Shakta Vedanta—and modern physics. The present scientific picture of the physical world can be described as being in terms of fundamental *entities* and *interactions*. The entities are of two types: matter and radiation. (The entities of radiation travel with the speed of light, the entities of matter with a lesser speed.) The entities are often called "particles," but actually they have aspects of vibrational patterns so that we

¹¹ The quoted phrases in this paragraph are taken from an abstract of his philosophy given by Merrell-Wolff in the audio-taped essay entitled "One Reel Statement of My Philosophy" (Lone Pine, CA: July 12, 1975).

can just call them “entities.” Similarly the processes of Nature are often described as based on “forces,” but actually a better word for the basic processes is “interactions.” The most fundamental theory of the elementary entities and interactions that we have is the Quantum Field Theory. The central concept in this theory is that of the *field*, which exists everywhere, and everywhen, and which contains the potentiality of all possible states or conditions in the universe. Of these states the most fundamental is the Ground State (or “vacuum” state) out of which everything—the totality of “excited states”—arises by *creation* processes and into which everything subsides by *absorption* processes. The ground state is characterized by the fact that it stretches to infinity uniform and changeless. It is the same everywhere and everywhen. In contrast to every other state it never changes under any process. One can expect that someday the universal quantum field will be recognized as the physical aspect of the Universal Consciousness—Chit or Brahman or transcendent Shiva-Shakti; the ground state will be recognized as the physical aspect of Nirvana or immanent shiva (Nirvishesha) and the totality of excited states as the physical aspect of Shakti (Atman or Savishesha).

The universal quantum field could be likened to a great cosmic piano capable of playing an infinity of tones and combinations thereof. The ground state, or immanent Shiva, would then be represented by that state in which the piano is quiet; no tone is being sounded. What about Shakti or the dynamic aspect of the Atman in modern physical science? All fundamental processes or interactions going on in the physical world are also described in quantum field theory. All the elementary entities of matter and radiation arise out of the ground state by the application of *creation operators* (analogous to the piano keys which are struck to make a tone sound). Then there are *sustaining operators*—which are called “propagators” in the technical language—which apply during the time of manifestation of the entity. (These correspond to the piano pedals, which as long as they are applied keep tones sounding.) Then there are the *absorption operators*, one for each creation operator, which cause the entity to disappear. (These would be represented in the piano analogy by dampers—one for each key.)

The correspondence of these with three of the fundamental five “deeds” or processes ascribed to Shiva-Shakti as basic attributes in all Shaivite philosophy, is striking. For instance, with a slight change of order, these are (1), (2), and (3) in the classic Tantra text, *Svacchanda*, which then reads (1st patal, 3rd verse): “(I bow to the) Divine who brings about (1) emanation (srsti), (2) re-absorption (sanihara) (3) maintenance (of the world) (sthiti), (4) concealment (vilaya), who dispenses (5) grace (anugraha), destroying the affliction of those who have bowed down (to Him).” Or as stated in that great classic of Siddha Yoga, *Pratyabhijnahridaya* (The [Heart] Secret of Recognition), Sutra 11 (again changing the order slightly): “Manifesting, experiencing as self, relishing, settling of the seed, dissolution.”¹² Though there is striking

¹² Jaidev Singh, ed., *Pratyabhijna Hridayam* (Delhi: Motilal Banarsidass, 1963). The translation given here is from Appendix II of *Introduction to Kashmir Shaivism* by Swami Tejomayananda (Oakland, CA: S.Y.P.A. Foundation, 1979). An extraordinary experiential account of Kashmirshaivism in practice is given by Swami Muktananda in his *Play of Consciousness: Chitshakti Vilas* (New York: Harper & Row, 1978).

agreement with three out of the five, it is to be noted that the correspondents of two of the fundamental process in the “five-fold act” are missing in the present quantum field theory.

By contrast, the correspondence between Franklin Merrell-Wolff’s stages of realization and the five-fold act of Universal Consciousness seems to be complete: The first three stages where a (non-egoistical center was still evident, correspond to the processes of emanating—manifesting, reabsorption—experiencing-as-self, and maintaining—relishing of the world. The last two stages, comprising the decentering process—the mystic death and return—to the universal field with a state of “well-nigh inconceivable delight” turning to High Indifference—correspond to settling of the seed and the grace-bestowing limitation-destroying dissolution of the center. Or if, once again, we may use the language of physics—perhaps in its future—this marks the return to the universal field to whom the values of the ground state and excited states are all one.