

The Matter of Psyche

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A review of *Psyche and Matter*, Marie-Louise von Franz. Boston & London: Shambhala, 1992.

There is a passage toward the end of *Memories, Dreams, Reflections* which frames the challenge for those who follow Jung. He remembers the morning, one year after his wife's death, when he awoke 'knowing' he had just been with her in the south of France as she carried on her quest for Grail material¹. A reader unfamiliar with Jung's sensibility might expect personal reminiscence to follow, but instead Jung flows into a not atypical stream of consciousness. Yes, he was comforted by his wife's 'continuing after death to work on her further spiritual development.' But, he notes, this idea is inaccurate, 'like a body projected on a plane, or conversely, like the construction of a four-dimensional model out of a three-dimensional world in order to represent themselves to us².' He then recalls that mathematics goes 'to great pains to create expressions for relationship which pass empirical comprehension' and remarks on the importance 'for a disciplined imagination to build up images of intangibles by logical principles and on the basis of empirical data,' such as 'on the evidence of dreams.' This is accomplished through 'the method of the necessary statement...the principle of amplification...' which, he says, is 'most easily demonstrated by the statements implicit in simple whole numbers³.' After a review of their properties and the infinite series of natural numbers, which 'corresponds to the infinite number of individual creatures, ...(and) are however, simultaneously properties of matter,' Jung ruminates on what he considers other statements of irrepresentable realities implicit in nature, particularly the imaginal expressions of archetypal motifs and myths. When we let myth amplify itself, he says, as do numerals, we are in a process 'convincingly repeated in every successful dream analysis,' thus guarding against 'monotony of interpretation.'

Next, Jung recalls a vision in which a friend who had just died shows him books. Shortly thereafter, Jung went to the friend's library, and found the volumes as in his



The founder of analytical psychology C.G. Jung (1875-1961) and his wife Emma (1882-1955, a Swiss Jungian analyst and author



Day of the Dead celebration. Cemetery of San Juan Achiutla, State of Oaxaca, Mexico, 2019

vision. This reminds Jung of his dream before his mother's death, and thence to associations of Wotan, Hermes, Merlin; reflections on Greek sarcophagi, Etruscan tombs, a Cabalistic tale, and the custom of picnics at graves on All Souls Day. Later in the chapter, Jung speaks to his central preoccupation—meaning—and its relevance to his life: 'The meaning of my existence is that life has addressed a question to me. Or conversely, I myself am a question which is addressed to the world, and I must communicate my answer.' Supposing 'my way of posing the question as well as my answer may be unsatisfactory,' then 'someone who has my karma—or I myself—would have to be reborn in order to give a more complete answer.' Perhaps he would be given several hundred years of peace 'until someone was once more needed who took an interest in these matters...I imagine that for a while a period of rest could ensue, until the stint I had done in my lifetime needed to be taken up again⁴.'

While, Jung notes, such questions of karma are obscure, the 'stint' has been taken up by many colleagues and students. Among the most dedicated and far-ranging is Marie-Louise von Franz. The scope of her pursuits is brilliantly showcased in the twelve essays collected as *Psyche and Matter*, Foreword by Robert Hinshaw, published in German by Daimon Verlag in 1988, and in English in 1992 by Shambhala as a C.G. Jung Foundation Book. Presented in the order of their complexity, these works, five previously unavailable in English, allow us to share in Dr von Franz's restless and persistent reaches into the far-flung territories Jung surveyed and staked as proper domain of psychology.

Ernest Rossi has delineated Jung's 'four broad approaches for exploring archetypal psychology':



Marie-Louise von Franz in a collage as a fictional character in Ottavio Rosati's Four Decades of Plays for the Theater of the Time

The primary data Jung was interested in as a psychiatrist was the phenomenological experience of his patients: their hopes, problems, dreams, belief systems, and the myths that apparently gave their lives meaning...the 'phenomenological contents of the mind' that he recognized as exhibiting certain apparently lawful, archetypal patterns⁵.

The second avenue involves hermeneutics, the science of interpretation, not only of the traditional religious texts, but also of mythology, alchemy, ancient cave art, and virtually any record of the evolution of psychological experience. The third realm of data for archetypal psychology embraces the sciences of anthropology and sociology: the study of collective and cultural patterns of behaviour:



Boys of the Yao tribe in Malawi participating in circumcision and initiation rites

the rites, rituals, games and ceremonies of small native societies as well as large urban cultures through human history⁶. This embraces rituals and ceremonies, and also the ‘architectural patterns that seem to transcend the personal experience of the individual,’ those ‘collective patterns of animal behaviour...the patterns of courtship, fighting, flight, and hunting in animals as well as humans all manifest archetypal motifs right down to the molecular level.’ The fourth path explores the possibilities of creating an integrated view of psyche, soul, and nature. It encompasses the foundations of physics, mathematics, logic, and epistemology...to include all the collective patterns for conceptualizing human experience, particularly those that are operative outside our current levels of consciousness. This conception of archetypal psychology is so broad, however, that we have been at a loss to formulate unifying principles to bring it all together within a single coherent framework⁸. It is just this effort—to bring it all together which von Franz has undertaken in a lifetime of barrier-breaking work. She has taught herself many languages: ancient and current, verbal and numerical, the soul-talk of the quest and the terminology of the laboratory, focusing now on an archaic creation story, and then on contemporary genetics. She counts time and peers into space as she explores the underpinnings of human spirit, imagination, and intellect in myths, rituals and religions, philosophy, mathematics and science. Like Jung, she is especially attracted to subjects which reveal interconnections—subatomic physics, and dynamic mathematics—to find or confirm intersecting networks. Adept in the esoteric traditions of the East and West, alert to the latest scientific theory and discovery, to use an old analogy, she produces countless metaphorical nuggets of gold, or to borrow the physics language on which she draws, presents brilliant particles of insight and summary from the wave field of human intelligence.

The specific themes are announced in the first essay, where we are made aware that the author intends to follow Jung’s belief that ‘psyche and matter exist in one and the same world, and each partakes of the other⁹.’ Her major fields of exploration are the images transmitted to Jung through alchemy, such as the *unus mundus* and the



Microcosmos and macrocosmos

notion of macro- and microcosmos; the approach to psyche and matter in alchemy and modern science; Number, as ‘an archetype of order that is in the process of becoming conscious¹⁰’ and as ‘that objective-mental element which jointly orders psyche and matter¹¹’; Time—its rhythms and our psychological experience and perception of it; meaning and order.

Through his abiding curiosity in these matters, Jung came to the idea of synchronicity, which von Franz furthers and places in the context of current understanding. She most thoroughly explores three ideas—the *unus mundus*, synchronicity, the archetype—which follow from Jung’s conception of the continuous continuum of the collective unconscious. She is also especially absorbed with space/time/existence implications of Jung’s essential triad: the *unus mundus*, the mandala as its psychological equivalent, and synchronicity as its parapsychological equivalent. In several of the pieces, she pursues the thesis put forth by Jung and physicist Wolfgang Pauli, of the constant connections of cause-effect causality, and the inconstant connections of synchronicity through contingency, equivalence, meaning.

In her signature style, these seemingly impersonal and transpersonal issues are consistently and deftly turned back to the individual, Jung’s central concern. No matter how far out she goes, von Franz never loses sight of the human psyche. Indeed, she takes as her subject nothing less than what Jung called the ‘cosmogonic meaning of human consciousness,’ and elaborates with both mythopoetic and modern analogies which range ‘from pure parallelism to an even more precisely determined relationship between the macro- and microcosmic aspects of the Opus¹².’ The crucial and stunning question, which many traditions—the shamanic, the Taoist, and the alchemical—have taken as just so, here is approached cognitively and empirically rather than magico-religiously: if our minds and brains have evolved in such a way that psyche may perceive and mirror matter, ‘can matter also mirror the psyche?’¹³ Noting the belief in physics that the observer



During his therapy with Carl Jung (left), Wolfgang Pauli (right) came to embrace Jung’s archetypal idea of dualities



Collective Unconscious

affects—even determines—the matter observed, von Franz speaks to the ‘possibility of reconstructing psychological processes in another medium, that is, in the microphysics of matter,...supposed to be going on as constantly as the psyche perceives the physical world¹⁴.’

The mandate to pursue both the irrepresentable and the concrete as proper to depth psychology is taken from Jung’s view that the reality described in the introspective approach to the collective unconscious is the self-same reality which atomic physics describes from the outside as material reality¹⁵.

The Source

Von Franz starts from the ancient idea of the single source, the one arche or principle of matter, pursues its unfolding multiple phenomenological expressions, and finds the conjunctions. She embraces the holistic universe of older intuitive and experimental systems like the ‘tender-minded’ alchemistic doctrine of signatures with its universal continuum of correspondences from the mineral through the vegetable, animal, human, to the planetary, citing such texts as Zosimos’ Hermetic synthesis of Creation:

...a symbol of chemistry may be deduced from the Cosmogony, for then the following analogy holds good; as the sun is the heavenly blossom of fire and the right eye of the Universe, so also is the ore, when through the purification it is brought to its flowering, an earthly sun, a king upon earth, as is the sun in the heavens¹⁶.

Von Franz also invokes ‘tough-minded’ modern parallels from astronomy, physics, chemistry and biology which demonstrate the inter-related realities of a cosmic network evolving from one energy. A group of scientists

give such data in an October 1994 *Scientific American* article, ‘The Evolution of the Universe,’ summarizing the theory of a ‘big bang’ between 20 and 8 billion years ago when the universe spewed forth from a single dime-sized intensity of energy into the world’s manifold forms. The authors note that ‘scientists of many traditions—from atomic and nuclear physics, geology—attempt to estimate the universe’s age as do astronomers by measuring cosmic expansion¹⁷.’ Intuitions of ‘correspondences’ are confirmed with technological means, as astronomers assessing the distances to galaxies and the density of the universe,



The Magician from the Rider-Waite tarot deck, often thought to represent the concept of ‘as above, so below’

physicists who study gravitational pull, and chemists who determine the ages of the oldest known chemicals proceed from and arrive at an idea included in the alchemists' 'All that is above/Also is below.'

For psychologists who look to myth for the meaningful aspect of knowledge, there are striking similarities in the imagery of ancient mythopoesis and religions with current speculations on the universe's 'big bang' origins and its 'big crunch' extinction some five million years hence. And through the physics approach to reality as consisting of energy radiating in the bundles or packets called quanta, or as is currently speculated, loopily linked by superstrings, science has moved closer again to the alchemical perception of one inter-related world which also includes the human. But with her archetypal alchemical view, von Franz ultimately moves the one arche, one source, one world and one goal motif beyond both the material realm of Western science and the European basis of Western psychology to a cross-cultural perspective and to the plane of the numinous. She sees a possible meeting between the approaches of East and West, for 'while the technology of the West is intruding more and more destructively into the spiritual tradition of the East, a strange conversion seems to be beginning in Western science¹⁸. If a tunnel breakthrough between psychology and atomic physics were to take place, confirming Jung's intuition of the archetype of the natural number as the joint ordering principle of the domains of psyche and matter, we would emerge at a place where lie the most ancient knowledge and traditions of the East, which in part have even long been forgotten there. This would empirically prove an ancient conviction of the Buddhists that the deepest, most profound level of human nature, at the place where our psyche fuses with the unknown of the cosmic whole, remains the same everywhere¹⁹. With this perspective, von Franz believes the 'Jungian concept of a single energy that manifests itself in lower frequencies as matter and in more intense frequencies as psyche in many ways resembles the Chinese idea of ch'i²⁰.'

Her central fascination remains with the numinous, the transcendental background on which 'the world inside and outside ourselves rests.' As Gerhard Adler writes:

Here we seem to be in the area of the deepest numinous mystery of the psyche, and the interconnectedness of all life and its events shows through the veil of our daily existence with all its inherent blindness... We are, each of us, cells or particles in the corpus mysticum of a divine universe²¹.

Archetypes

Von Franz's ability to move among the many manifestations of the single energy and to extend Jung's definitions into still unfolding consciousness and language is most evident in her discussion of archetypes, which draws from classical Jung to current constructs.

In a 1957 letter, Jung stated his continuous fascination with 'the manifestation of archetypes, of archetypal forms, in all the phenomena of life: in biology, physics, history, folklore, and art, in theology and mythology, in parapsychology, as well as in the symptoms of insane patients and neurotics, and finally in the dreams and life of every individual man and woman²².' He alludes to 'the intimation of forms hovering in a background.' Von Franz takes her references and analogies for these hovering forms from many realms. She believes the 'Jungian concept of a single energy that manifests itself in lower frequencies as matter and in more intense frequencies as psyche in many ways resembles the Chinese idea of ch'i²³.' Archetypes are 'inborn dispositions or unobservables, psychic structures that in recurring typical situations produce similarly structured ideas, thoughts, emotions, and fantasy motifs²⁴.' Not only 'elementary ideas, but also elementary feelings, elementary fantasies, visions,' only 'when they are stimulated by some inner or outer state of need (either inner compensations, processes or outer stimuli) do they, at crucial moments, produce an archetypal image, an archetypal fantasy, a thought, an intuition, or an emotion²⁵.'

Archetypes are 'the psychic preconditions of our entire human existence, and we can go neither over nor around them. We can, however, develop them further or refine them²⁶.' They not only inform 'mankind's religious and mythical conceptions, ...are not only the basic categories of human fantasy: they of course also underlie science in its intellectual premises.' For Jung, 'the basic structures were always there, but within them, ever new acts of creation are taking place²⁷.' Thus, archetypes may most accurately be described as 'nodal points of psychic energy,' 'systems of readiness for action...inherited with the brain structure—indeed its psychic aspect' whose images are 'the instinct's perception of itself.' While archetypes are 'the final observable entities in the psyche,' they are 'not static structures, but rather systems of psychic energy or a mode of various relationships of energy, manifestations of a general psychic energy.' This parallels the physicists' search not for 'building blocks in matter,' but 'transient configurations of universal energy²⁸.'

Like Wolfgang Paul's 'statistical laws with primary probabilities,' archetypes are also 'a list of expectation values or "primary probability" for certain psychological (including mental) reactions.' Or, referring to physicist David Bohm's grid, 'the archetypes can be understood as



The Benevolent Mother Archetype: Demeter, Olympian goddess of the harvest and agriculture, presiding over grains and fertility

dynamic, unobservable structures, specimens of the implicate order. If, on the other hand, an archetype manifests as an archetypal dream image, it has unfolded and become more “explicated”²⁹.

Archetypes are ‘contaminated with one another.’ They are ‘not like separate particles, as electrons were formerly viewed as little particles, but are more like an “electron smear”...like a blurred cloud; at their edges, they run over into parallel phenomena⁵⁰.’ Comparing the Jungian view with the absolute categories of the structuralists, von Franz emphasizes that we cannot ‘separate the archetypes from each other... The archetypes do not swim around in the collective unconscious like pieces of bread in a soup, but rather they are the whole soup at every point and therefore always appear in specific mixtures...so hard to describe clearly outside of an individual psychological context⁵¹.’ In a comment which is soothing to the practitioner aware of limited ego ability in relation to the psyche, she notes that ‘archetypal dream images still have the “cloudy” nature of absolute knowledge’ in that they always seem to contain more than we can assimilate consciously, even by means of elaborate interpretations⁵².’ Nonetheless, as Jung wrote, ‘the intimation of forms hovering in a background not in itself knowable gives life the depth which, it seems to me, makes it worth living⁵⁵.’

Number

One of the manifestations of form is number. In a paradigm of understatement, von Franz once described herself as ‘pretty quick on the uptake⁵⁴.’ This is most evident in her work on Number, where she has followed Jung’s interest and carried it farther. The personal history behind these efforts is here worth recounting, for while the accomplishments of these intellects is enormous, there is of course a very human background.

In his autobiography, Jung stated: ‘My psychology was at last given its place in reality and established upon its historical foundations. Thus my work was finished, my work done, and now it can stand. The moment I touched bottom, I reached the bounds of scientific understanding, the transcendental, the nature of the archetype per se, concerning which no further scientific statements can be made⁵⁵.’ Yet, von Franz tells it that when Jung attempted a universal formula from the parallel numerical structures that appear in the psychic and the physical, he said: ‘Now I have the feeling that I’ve hit my head against the ceiling. I can’t get any farther than this⁵⁶.’ Less than four years before his death, Jung wrote in a letter ‘I always come upon the enigma of the natural number. I have a distinct feeling that Number is a key to the mystery, since it is just as much discovered as it is invented.... It seems that I am

too old to solve such riddles, but I do hope a young mind will take up the challenge. It would be worthwhile³⁷.' Von Franz tells us it was 'Jung's idea that one should study the individuality of these numbers, be interested in what each has that the others have not, rather than what they have in common³⁸.'

He made a note three inches square, on which he wrote: one, the all; two, the only even prime number; three, the first uneven prime number, the sum of one and two, the first triangular number; four, the first quadrangular number, the first square number; and so on. Then he said he couldn't do it; he felt too old. That was about two years before his death. He gave me that little paper—he said, 'I give it to you'³⁹.

Von Franz 'never found out whether he thought I should do it, or if he thought I should keep it and hand it over if ever I should meet somebody I thought would be suitable to do such a study. After his death, I preferred to assume the latter because I was much too hopeless to do anything myself. Then, as I didn't meet anybody for a long time, my conscience began to bite me, and that's why I have now written this rather unreadable book, *Number and Time*, making at least a little attempt⁴⁰.' In that volume, 'I counted to four and tried to assemble the qualities of each in psychology, mythology, physics and mathematics...Then I discovered...that Chinese mathematics were completely built on this idea of the quality of numbers⁴¹.' She recounts how she made a 'modest little start—to go into a modest little corner—not attack the big problem, because I did not feel up to it, but I wanted to see if I could find in mythology and fairy tales (because there I knew the field) if there



Fragment of an 'astrolabe text' from Nineveh featuring a circular schematic calendar indicating prominent stars and asterisms which rise in each month of the Babylonian calendar

are not number sequences in tales which might reveal certain structures.' She knew that Mayan, Chinese, and Babylonian gods belonged to a specific calendar number, specific day, in 'a clear relationship between time, number, and archetypal image,' but this is 'not sufficient.'

I have a feeling that one could find out more. I have made endless charts, and then I have been discouraged and left it. I have left it a year, and now my dreams say I should not leave it, that it's still there, that I've only attacked it from the wrong angle. So now I have to pick it up again and try from another angle. I don't know, I'm just groping...⁴²

She begins with Jung's 'idea that number is an archetype of order that is in the process of becoming conscious. It is the most primitive manifestation or the most seminal of all manifestations of archetypes or archetypal processes⁴³.' Number is 'the precondition of all knowledge,' and thus 'not only enacted by an act of consciousness but is something found in nature.' It is inherent in matter itself:

From what we know today, the most elementary particles, such as the quarks, protons, mesons, and baryons, 'know how to count.' They combine in hexagons, triplets, octuplets, and so forth. Particles would not know how to count as we do, but would be more like a primitive shepherd, who, without knowing how to count beyond three, can tell in the twinkling of an eye whether his herd of 137 animals is complete or not⁴⁴.

As archetypes are 'systems of psychic energy or a mode of various relationships of energy, manifestations of a general psychic energy,' like the physicists' 'transient configurations of universal energy,' number is 'a dynamic structure or, more precisely, a rhythm configuration of energy that appears isomorphically in the psyche and physical domains of reality⁴⁵.'

Physicists nowadays sometimes speak of a 'proto-consciousness' in inorganic matter. I would propose saying that proto-consciousness consists in 'knowing how to count.' (That would be a first step toward greater precision of focus of the luminosity of the 'absolute knowledge,' a first individuation of the 'fossil radiation' of the diffuse knowledge of the *unus mundus*⁴⁶.) In seeing numbers 'as irrational facts of nature, like strange animalia,' not as 'static structures, but as rhythmical configurations of psychic energy and—as I would add today—of psychophysical energy,' von Franz proposes the term 'one-continuum' as 'a numerical equivalent of the *unus mundus*.' In this understanding, 'all numbers (including unity) would be configurations of rhythm⁴⁷.'

Von Franz looks to Number as uniting 'both order and meaning, and is therefore, together with its topological



Proto-consciousness, *Spencer Sass, 2020*

spatializations into patterns, a possible meeting point for the two fields of science,—physics and depth psychology⁴⁸. As the ‘most primordial archetypes’ and the ‘actual matrix of the archetypes’ number lies behind the psychic realm as a dynamic ordering principle, the primal element of that which Jung called spirit. As an archetype, number becomes not only a psychic factor, but more generally a world-structuring factor...numbers point to a background of reality in which psyche and matter are no longer distinguishable...numbers appear to constitute the actual bridge between regular acausal orderedness and irregular synchronicity phenomena⁴⁹.

She is particularly taken with the observation that the mathematical forms of order which a physicist’s mind manipulates coincide ‘miraculously’ with experimental measurements, an example of an ‘unreasonable effectiveness of mathematics in science’ about which the mathematician Eugene Wigner spoke⁵⁰. In *Dreams of a Final Theory*, Nobel physicist Steven Weinberg validates von Franz’s belief in the primordial place of mathematics with a story well known among scientists. ‘If there is any moment that marks the birth of quantum mechanics,’ Weinberg writes, it was in 1925, when the highly allergic young Werner Heisenberg fled to a lonely North Sea island for a hay fever-free vacation. While there, he continued the struggle with a problem that physicists had been dealing with since Niels Bohr’s 1913 formulation of atomic theory. He investigated the measurable energies of quantum states by making a table from the rates at which an atom

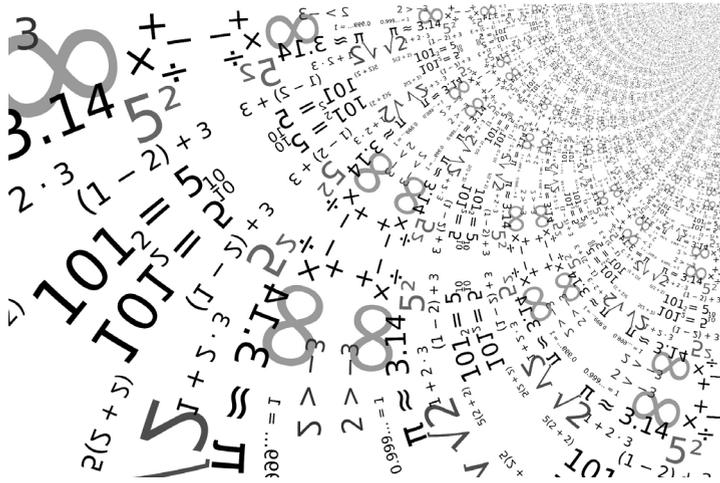
makes transitions from one to another quantum state by emitting a particle of light, a photon. He introduced mathematical operations that yielded one type of table for each physical quantity like the position, velocity, or square of the velocity, for the quantities whose squares give transition rates. Finally able to calculate a table of the energies of the system in its various quantum states, upon his return from vacation, he discovered that this tremendous work was already familiar to mathematicians, who knew the tables as matrices, and the operation of going from the table of velocity to the table of its square as matrix multiplication. Weinberg comments: ‘This is one example of the spooky ability of mathematicians to anticipate structures that are relevant to the real world⁵¹.

Von Franz believes there is also a ‘spooky’ analogy between the numerical order in the genetic code of DNA and in the *I Ching*. Weinberg writes that when molecular biologists searched for the governing principles of the code, they found that the ‘genetic code is pretty much a mess...was not designed; it developed through a series of accidents at the beginning of life on earth....’⁵² The information for selecting from twenty important amino acids in a protein molecule, he continues, ‘is carried by the choices of three successive pairs of chemical units called bases, of which there are only four different kinds. So the genetic code interprets three successive choices each out of four possible base pairs.’

English theoretical physicist, Paul Davies also notes ‘meaningful coincidences in the constants of nature in numbers which appear in the laws of physics: the mass of the electron, the charge of the proton, and the gravitational constant: nature thus seems to be possessed of remarkable numerical coincidences⁵⁵.’ Von Franz suggests



Nobel laureates, theoretical physicists Werner Heisenberg and Eugene Wigner in 1928



that as ‘we cannot indicate a cause (for these regularities), we generally express this just-so-ness by a number’ which in turn is ‘based on an arbitrarily chosen length of space-time⁵⁴.’

Von Franz contrasts Eastern and Western approaches to number. She opines Western mathematics is ‘not interested in the individual number as a qualitative number’ but ‘only as a class, only interested in making logical deductions that apply to a whole class of them.’ She looks to ‘another view of number: number symbolism,’ which studied ‘the individual qualities of the numbers’: But this was simply a wild mythological speculation. These symbolists discarded the mathematical qualities, and the mathematicians discarded the symbolic qualities. So we have two streams of science. And there is nothing in between⁵⁵.

Von Franz goes down exactly that seemingly non-existent in-between stream, between the mathematical and symbolic, the hard and the soft sciences, the factual and the probable, order and meaning, physics and psychology. She presents number as both ‘a quantity and an active specific qualitative manifestation of the one-continuum, i.e., the *unus mundus*. Each natural number (positive integer) would then possess four basic aspects: 1) relationship to space-time and geometrizable, 2) quantity, 3) positional ratio, and 4) quality, i.e., a specific retrograde Gestalt relation to the one-continuum⁵⁶.’

Acausal Orderedness

Summarizing Jung’s ‘two new concepts...concerning the world of so-called chance,’ von Franz discusses ‘acausal orderedness’ as ‘a regular omnipresent just-so-ness, such as for instance, the specific speed of light, the quantization of energy, the time-rate of radioactive decay, or any other constant in nature.’ Synchronicity occurs with events

of ‘not an absolute but a relative simultaneity⁵⁷.’ When an archetype is constellated, something synchronistic might happen; ‘and if it does happen, it will have the same meaning as the archetype⁵⁸.’ But this cannot be predicted—it might or might not occur. Echoing Jung, she cautions that ‘on no account should we regard the archetype as the cause of synchronistic events... To do so would be once again to think causally...⁵⁹’ Davies discusses Jung’s contention that scientific thinking has been unreasonably dominated by notions of causality for the explanation of physical events. He was impressed by the fact that quantum mechanics undermines strict causality, reducing it to a statistical principle, because in quantum mechanics events are connected only probabilistically...‘there may exist alongside causality another physical principle connecting in a statistical way events that would otherwise be regarded as independent⁶⁰.’

Another physicist, F. David Peat, believes that ‘just as Einstein added time and space to produce the much deeper concept of space-time, so Jung proposed completing causality by adding a non-causal link. Certain patterns, he argued, are linked in nonmechanical ways to form a causeless order...its patterns are meaningful and are echoed in both mind and matter⁶¹.’ But von Franz concludes that it is not possible ‘to introduce the notion of synchronicity into the body of the sciences as they are today.’ Nor, in true Jungian understanding, is the human ego the arena for the outcome: With this notion, we find ourselves on the threshold of a radical transformation toward what the sciences could become, a transformation that will not do away with them but will put them in their appropriate place in a much vaster vision of reality. Ultimately, general acceptance of this concept will depend on the universal Self and its creative acts of synchronicity...it will depend on whether the notions of synchronicity and of individuation are within the creative plan for the general evolution of the sciences in the West⁶².

Time

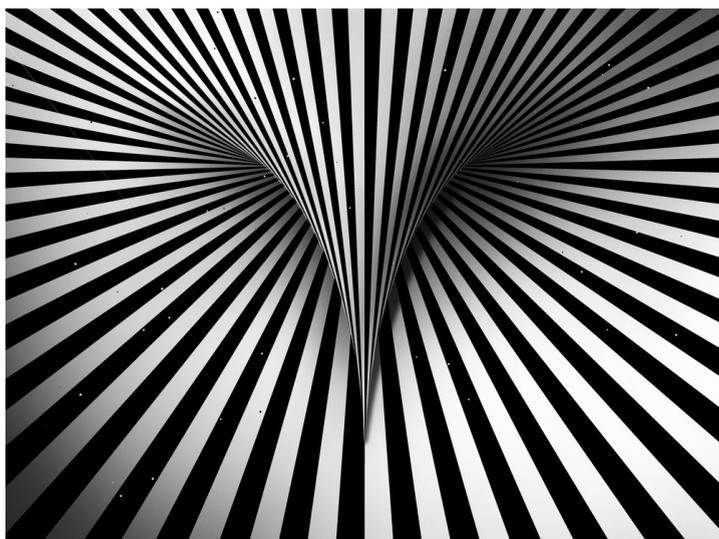
In the current evolution of science, our heretofore ordinary sense of time is challenged. In the Far Eastern worldview, time is ‘a continuum which contains basic conditions that manifest relatively simultaneously in different places in a parallelism of events that cannot be explained causally⁶³.’ In the West, it was Einstein who ‘realized that temporal indications were always relative to the position of the observer’...Einstein’s theory of special relativity is ‘a step which in a strange way revives the primitive intuition of time as a flow of inner and outer events, now grasped in precise mathematical formalism⁶⁴.’ As a result, ‘time has also become a problem. David Bohm and others point out

that time can no longer be represented by a simple vector: According to Bohm, an electron is a ‘set of enfolded ensembles’ and it is only at certain instants that it manifests as localized—which also entails that linear time does not exist. Bohm proposes conceiving of time as multidimensional and thinks it consists of ‘actual occasions’ rather than of a continuum⁶⁵.

Jung described time ‘as a mere *modus cogtandi*; what we perceive in fact is a stream of inner and outer experiences; time is the flow of outwardly perceived events and the inwardly experienced train of thoughts, feelings, and emotion⁶⁶.’ Linking inner and outer exploration, to von Franz,

it is a remarkable coincidence that, at approximately the same time as physicists discovered the relativity of time in their field, C.G. Jung came across the same fact in his explorations of the human unconscious. In the world of dreams, time also appears as relative and the categories of ‘before’ and ‘after’ seem to lose their meaning. If we go as deep as the archetypal layer of the unconscious, time even seems to disappear completely⁶⁷.

From their joint efforts on synchronicity, Jung followed Pauli’s suggestion to replace ‘the opposition of space and time in the classical schema by (conservation) of energy and the space-time continuum⁶⁸.’ Von Franz comments that since Jung sees the image of two intersecting systems as ‘a source of space-time, this would mean no less than that the conscious realization of time is “engendered” in the intersections of the conscious and unconscious psychic systems⁶⁹.’



Implicate order, *Divin Creador*



Time is ‘closely linked with the existence of our psyche in its incarnated form in the brain; in its non-incarnated aspect, the psyche appears rather to be at least partly outside of time⁷⁰.’ In von Franz’s understanding, ‘the concept for time would be based on the concept of numerically structured rhythms’ for ‘the common movement patterns of the psychophysical energy are numbers. These, with their rhythms of progression, form the basis of the idea of time, and in their field nature, the basis of a timeless order⁷¹.’ Given this perception, ‘the Self is not only a centre of stillness outside time but lives in a dynamic process’ whereas the human ‘perception of time is...closely linked with the existence of our psyche in its incarnated form in the brain⁷².’ Time thus ‘comes into being’ as the ‘eternal atemporal order of the Self meets with the time-bound order of our consciously experienced world⁷³.’ Only if our egos live in contact with the Self is our relationship with time correct. ‘Whenever an individual fails to live the meaning of his life or loses sight of its eternal pattern on account of rationalistic prejudices, it gets at odds with time, and when too many people do this, “time is out of joint”⁷⁴.’ In a characteristic, sweeping summary, von Franz comments that the ‘paradox of time is not difficult to understand, but to live with it—to fulfill the demands of clock time and simultaneously to follow the rhythms of the Self—requires a considerable maturity... Seen in this way, time becomes a touchstone which can show us exactly how much or how little we are in harmony with ourselves⁷⁵.’

Absolute and Limited Knowledge

Expanding on Jung’s theme, von Franz writes of the collective psyche as possessing ‘absolute knowledge,’ not mediated or involved with sense organs, but rather with transpersonal, not conscious knowledge. It ‘seems to consist of images, of subjectless “simulacra”⁷⁶’: Linking psychology and science, she refers to absolute knowledge as ‘another dimension where perhaps more than a simple analogy exists between the concepts of physics and of

Jungian psychology⁷⁷. For example, relativity experiments have led to the supposition that particle B ‘knows’ instantly and without any communication (slower than the speed of light at least!) what change has been undergone by particle A, with which it was initially connected (the change being imposed on particle A by the very fact of being observed). Finally, this same cosmic knowledge appears in the half-life law of radioactive decay. Each atom that decays ‘knows’ in relation to the whole to which it belongs when it must do so. Thus there is here not only a total acausal order, but this knowledge also possesses ‘knowledge’ of a nature that calls for closer investigation.

Von Franz then makes a compelling comparison:

We might compare this ‘absolute knowledge’ of the unconscious universe to...that cosmic background ‘fossil radiation,’ a luminous continuum of millimetric waves which are nevertheless distinct from the luminescence of the stars and sun, which would correspond in my comparison to the images of a more or less conscious ego⁷⁸.

Von Franz cites the quantum uncertainty rule of relation between two complementarities, in which variables, such as position and momentum, cannot simultaneously be measured, making it impossible to learn everything about a quantum object acting both as a particle and a wave. It is von Franz’s conviction ‘just as physics experienced a limitation of its knowledge potential through the discovery of the uncertainty principle, psychology also acquired knowledge of its limits through this factor. Here microphysics and Jungian depth psychology come together...it is neither molecular biology, nor psychology—nor brain research to be sure—but rather quantum physics that has turned up insights whose relationship with the psyche of the observer has made an impression on physicists⁷⁹.

In his *Bright Air, Brilliant Fire: On the Matter of the Mind*, Nobel neuroscientist Gerald Edelman also cites Heisenberg’s uncertainty thesis ‘that the operation of measurement in the domain of the very small ineluctably involves the actions of the observer who has to choose... the level of precision with which he or she wishes to know either the position or the momentum of a subatomic particle⁸⁰.’ He moves, as does von Franz, from the physics thesis that ‘at very small distances the observer is embedded in his or her measurements’ to the psychological and existential queries about the observers—are they things, why can they refer to and categorize other things, and what occurs ‘when we ourselves observe observers⁸¹.’

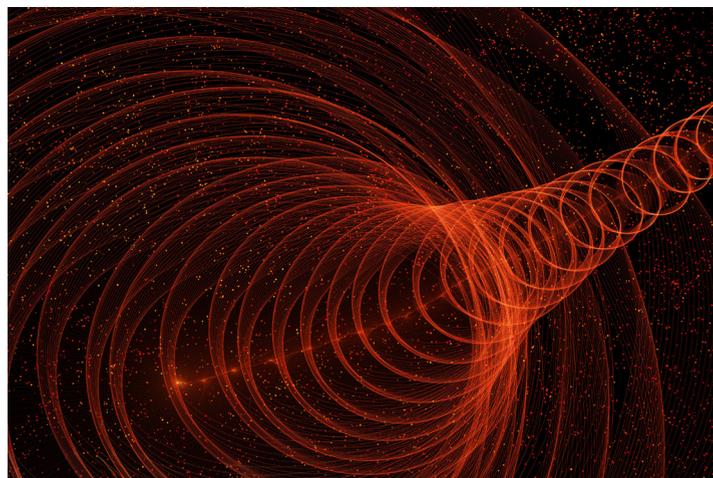
Mind and Process

Relativity and quantum physics count the presence of the observing scientist, but Edelman notes, ‘Einsteinian and Heisenbergian observers, while embedded in their own measurements, are still psychologically transparent. Their consciousness and motives do not have to be taken into account to practice physics. The mind remains well removed from nature⁸².’ He posits that ‘there must be ways to put the mind back into nature that are concordant with how it got there in the first place⁸³.’

In *The Re-enchantment of the World* Morris Berman gives historical background and context:

From the 16th century on, mind has been progressively expunged from the phenomenal world. At least in theory, the reference points for all scientific explanation are matter and motion—‘the mechanical philosophy.’ Developments that have thrown this world view into question—quantum mechanics for example—have not made any significant dent in the dominant mode of thinking, (which)...insists on a rigid distinction between observer and observed⁸⁴.

Through alchemy, as well as atomic physics, Jung had come to see consciousness and the unconscious not as collections of contents, but as process dependent on the active participation of the human agent. For Jung, mind is ‘an active, dynamic ordering factor that operates in and behind the unconscious psyche⁸⁵,’ the ‘active, winged, moving, alive, stimulating, provocative, arousing, inspiring, dynamic element of the psyche, that which produces enthusiasm and inspiration...a spontaneous principle of movement and activity, in which inheres the faculty of free generation of symbolic images beyond the sense perceptions and the capacity for sovereign, autonomous manipulation of these images⁸⁶.’



While von Franz defines mind as ‘an inspired cluster of thoughts and meanings based on an archetypal structure,’ she sees ‘processes everywhere rather than structures or static orders.’ Her acceptance of the unconscious as ‘a psychism *sui generis* which seems to work differently from our conscious mind’ places her in the modern era: ‘Following William James, Jung and Pauli compared this concept with the concept of field in physics, and Niels Bohr pointed out that the relationship between conscious and unconscious is a complementary one⁸⁷. Along similar lines, Edelman cites William James’s view that ‘consciousness is a process not a substance’ and ‘mind is a process, not a stuff.’ Indeed ‘matter itself may be regarded as arising from processes of energy exchange. In modern science, matter has been reconceived in terms of processes; mind has not been reconceived as a special form of matter. That mind is a special kind of process depending on special arrangements of matter is the fundamental position I will take...⁸⁸.’ If psyche and the unconscious are perceived primarily as process, as archetypal fields of ‘readiness,’ the dynamic context and placement of images is as important as their content. This affects how a practitioner hears, understands, and interprets the psychodynamics of both life and dream.

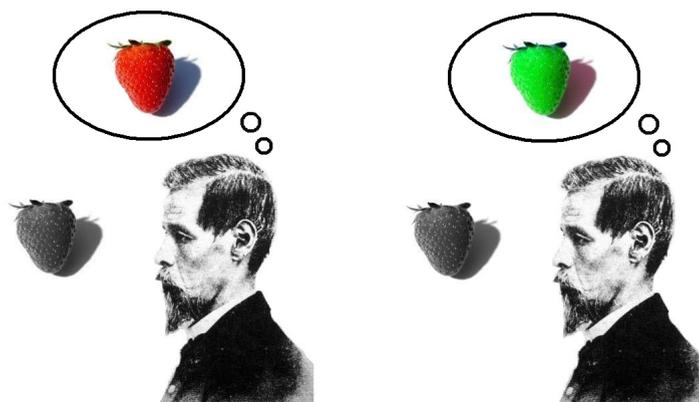
The Mirror

Von Franz posits that there are inherent and particular constraints faced by psychologists, that are not issues for scientific investigators of matter. Psyche’s knowledge of its own processes, its study and explanation of itself takes place entirely in one and the same medium, psyche as object of psyche as subject. ‘Psychology describes psychic contents with psychic means⁸⁹.’ In contrast, she believes physics has the advantage of approaching material processes from the outside, from the mental medium: ‘The physicist mirrors matter in his psychic processes’ whereas psychology ‘lacks an Archimedean point outside of itself and in this respect is critically limited⁹⁰.’ This adds import to Jung’s assertion of the objective psyche. Between the consciousness of the complexes, the consciousness of the ego, and the ‘knowledge that is conscious only in the archetypal realm⁹¹,’ the psyche may reach toward the ‘other’ point from which to know itself. Edelman discusses ‘qualia,’ that is, phenomenal or felt properties, ‘the collection of personal or subjective experiences, feelings, and sensations that accompany awareness.’ They are ‘phenomenal states—“how things seem to us” as human beings... Qualia are discriminable parts of a mental scene that nonetheless has an overall unity... Yet the actual sequence of qualia is highly individual, resting on a series of occasions in one’s own personal history or immediate experi-

ence.’ From this, he concludes that we ‘cannot construct a phenomenal psychology that can be shared in the same way as physics can be shared.’ To him, ‘the paradox is a poignant one: To do physics, I employ my conscious life, perceptions, and qualia⁹².’ But he asks ‘what alternatives are open to us if we want to pursue a scientific analysis of consciousness?’ And he answers: ‘It is our ability to report and correlate while individually experiencing qualia that opens up the possibility of a scientific investigation of consciousness⁹³.’

Meaning

In *The Act of Creation*, Arthur Koestler observes that ‘it has been said that we know more and more about less and less. It seems that the more universal the “laws” which we discover, the more elusive they become, and that the ultimate consummation of all rivers of knowledge is in the cloud of unknowing⁹⁴.’ Even with our advances in consciousness and knowledge, empiricists of many different disciplines have been humbled—astronomers cannot find 90% of the universe’s dark matter, neuroscientists are unaware of 90% of the brain’s workings, just as Jung sensed that the unconscious is immensely vast and ultimately ungraspable. Koestler is certain ‘that the quest for meaning is a problem that is much more vital to us than the quest for partial information⁹⁵.’ Von Franz insists that above all, Jungian psychology is ‘an attempt to describe participles, or man, as a holon of meaning...’ Jung saw ‘meaning’ as a transcendental notion that



The ‘inverted spectrum’ is the hypothetical concept of two people sharing their colour vocabulary and discriminations, although the colours one sees— one’s qualia (individual instances of subjective, conscious experience)—are systematically different from the colours the other person sees



*Orpheus and Death gaze into the mirror,
from Jean Cocteau's film Orphée (1950)*

we cannot define consciously. It is not of 'the order of discursive thought that is based on a mathematico-logical order. Realization of meaning is a "quantum leap" in the psyche⁹⁶.' Von Franz takes the leap, and so enters into 'the greatest mystery,' which expresses itself in 'these strange psychic processes through which these powers actualize themselves as an experience of meaning in man and seek to attain consciousness in the mirror of his psyche⁹⁷.' Its realization is not information or knowledge, but 'a living experience that touches the heart just as much as the mind.' This is more than 'information, superintelligence, cosmic or universal mind—because feeling, emotion, the Whole of the person is included⁹⁸. This has bearing on the understanding of synchronicity. For an acausal orderedness to be a synchronicity, Jung insisted that it must have meaning which 'only reveals itself on the condition that we understand the event symbolically and not just intellectually⁹⁹.' The 'meaning' of a synchronistic event, von Franz cautions, is not the same as 'absolute knowledge,' for 'it has added to it the realization of temporal localization arising from a conscious individual at a certain moment of his life¹⁰⁰.'

The *unus mundus* for which Jung strove will not be expressed when physics finds the 'theory of everything' to explain the universal laws, for it is embedded in the alchemists' goal of accord with the wholeness of the universe as imagined to have been initially held in the mind of the God. The goal for Jung is meaning as well as knowledge. And, as von Franz writes, 'individuation and realization of the meaning of life are identical—since individuation means to find one's own meaning, which is nothing other than one's own connection with the universal Meaning¹⁰¹.'

The God Image and Death

Weinberg believes that the 'experience of the past 150 years has shown that life is subject to the same laws of nature as is inanimate matter,' but with 'no evidence of a grand design in the origin or evolution of life¹⁰².' But for von Franz, the permission for psychology to move between heaven and earth, between the universal and the personal comes from an entirely different thesis: 'Up to 95 percent of these ideas that constitute basic themes of modern natural science (I have yet to find an exception but say 95 percent out of prudence) are images of the divine¹⁰³.' As a depth psychologist, she discusses the awareness of the Self in relation to the theory of cosmic intelligence:

There are today a certain number of physicists who admit something like a universal mind... Jung calls it a 'luminosity' to distinguish it from the clearer and more definite light of our consciousness. He also calls it elsewhere a 'cloud of cognition.' This cognition seems to be an awareness, which on the one hand encompasses a far vaster field of information than ours, but on the other lacks precise focus and detail¹⁰⁴.

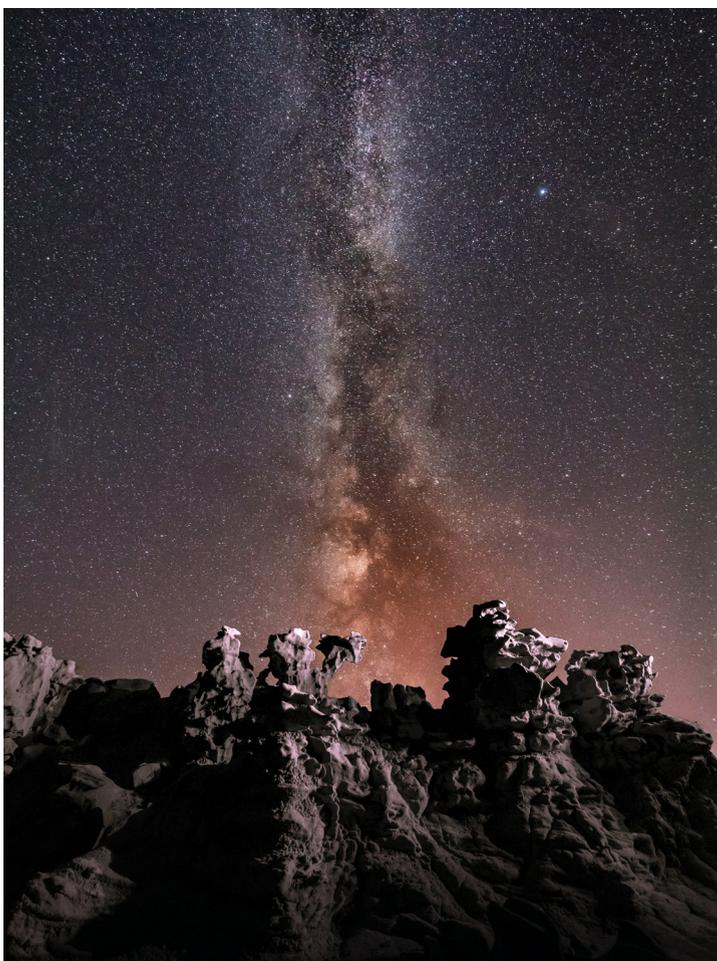
While she sees the similarities between Jungian thought and the speculations of physicists, she emphasizes the differences which exist 'because although the physicists in question believe in God as a superdominant ultimate intelligence with which we can play' this cosmic intelligence or mind 'does not, or rather only partially comes to meet us in our soul.' In contrast, for Jung, 'the dramatic encounter of man with the personified God-image in his psyche is the essential meaning of man's existence¹⁰⁵.'

The Princeton physicists imagine God as a cosmic dominant supra-intelligence far transcending the intelligence of man, so it seems not concerned with details. We also would say: yes, the Self is a supra-intelligence far transcending that of man, but it is the intelligence of the collective unconscious. It is vast but not focused. On this planet, at least, humans have probably the most focused consciousness; they can experience definite realizations of meaning which are more real than these latent clouds of cognition in the unconscious¹⁰⁶.

Von Franz also struggles with the theme of death which Jung confronted when 'knowing' he accompanied his dead wife in the south of France. She reaches back to a stunning description from an ancient Egyptian text:

...when the Self, after having grown within the earthly man, has completely reached its goal, i.e., the mandala of the unus mundus, then it has a deadly effect on the earthly body because it has reached a form of definite oneness with the all-pervading cosmic One-continuum, which seems to be hostile to separated existence. If it happens this way, death seems to be the 'right' thing, i.e., something naturally connected with the goal¹⁰⁷.

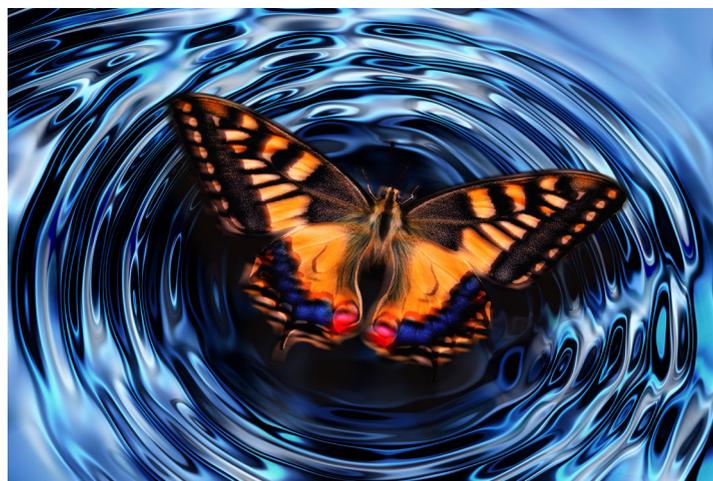
She also stretches to the farthest edges of science for a moving, modern—and timeless—image. Noting the similarity between the archetypal aspect of psychology and astrophysics, insofar as we ‘can look at stars and clusters of stars at all stages of their evolution, looking at them, so to speak, backward in time,’ von Franz wonders if death is like an ‘event horizon’ forming around a star, ‘beyond which nothing is any longer observable and no clock signals can reach us;—in a way, the star walks out of time for us. It seems to me that something analogous might happen to us in death. ... In dying, we may only step outside the event horizon of the living, but still exist in an unobservable state¹⁰⁸.’



Conclusion

Science has moved on since these essays were written. Von Franz notes that ‘most physicists say that which is random and unique does not enter the sphere of physical research. They simply exclude the random...because it cannot be grasped by the mathematical instruments. Any unique-experience information is simply ruled out¹⁰⁹.’ This situation is changing with the cutting edge, developing theories of complexity and the non-linear dynamics of chaos. In so-called chaotic systems, which are ‘sensitive dependence on initial conditions,’ nearly identical initial conditions can lead to very different outcomes: ‘Tiny differences in input could quickly become overwhelming differences in output¹¹⁰.’ Stephen Jay Gould notes that ‘History includes too much chaos, or extremely sensitive dependence on minute and unmeasurable differences in initial conditions, leading to massively divergent outcomes based on tiny and unknowable disparities in starting points¹¹¹.’ Mathematics is also engaged in dynamic description, particularly in the effort to penetrate turbulence. Jung cautioned against ‘monotony of interpretation’ and urged that we let myth amplify itself. While amplification is ‘the necessary statement’ achieved through ‘disciplined imagination’ and an openness to the message of an archetypal structure, which ‘imposes’ appropriate associations on us, there are also individual and personal associations to symbolic images made by and especially relevant to the particular ego¹¹². Any clinician recognizes these efforts as relevant to individual personalities and lives, and indeed, relies on those tiny and unknowable disparities and great turbulences as the places where individual destiny may enter.

Scientists who view humankind as part of the fabric of the whole are also now coming to a non-Archimedean view of their study of matter. Weinberg writes that ‘we do not understand even in principle how to calculate or interpret



the wave function of the universe, and we cannot require that all experiments should give sensible results, because by definition there is no observer outside the universe who can experiment on it¹¹⁵. He states an obvious but profound truth: that any 'living beings who evolve to the point where they can measure the constants of nature will always find that these constants have values that allow life to exist. The constants have other values in other parts of the universe, but there is no one there to measure them¹¹⁴. He also insists that there are well known problems in the description of consciousness in terms of the working of the brain. They arise because we each have special knowledge of our own consciousness that does not come to us from the senses. 'In principle, no obstacle stands in the way of explaining the behaviour of other people in terms of neurology and physiology and ultimately, in terms of physics and history...we should find that part of the explanation is a program of neural activity that we will recognize as corresponding to our own consciousness...I keep encountering a stubborn duality in the role of intelligent life in the universe, as both subject and student...although opinions differ, it is hard to identify anything special that qualifies some process to be called a measurement except its effect on a conscious mind¹¹⁵.'

In alchemy, however, the notion of participating consciousness considers not only the presence of the observing, measuring experimenter's mind, but also the state of mind, particularly the moral state (and in psychology the degree of consciousness) as a crucial correlation with the matter at hand. As Berman observes, it was central to the tradition that each student learn this complex procedure by himself. There was no standardized recipe that could be handed on, but rather an elaborate practice that required a profound commitment. Because matter possessed consciousness, skill in transforming the former automatically meant that one was skilled in working with the latter. If the state of mind can at all be imagined, we can say that the alchemist did not confront matter; he permeated it...the medieval alchemist was completed by the process; the synthesis of gold was his synthesis as well¹¹⁶.

With alchemy's individual, introverted bias, and its penchant for secrecy—based in part on the prophetic fear of danger for all humankind if the knowledge to change the nature of matter were known—its goal is dramatically different from the extroverted value of secular science to establish invariant laws in the public domain. For Weinberg, 'it is not clear whether the universal and the historical elements in our sciences will remain forever distinct...it is possible that eventually the initial conditions will appear as part of the laws of nature¹¹⁷.' But a passage in a letter to Pauli demonstrates not only Jung's radical understanding, but also how, for all their shared concern, analytical psychology and physics come and go in opposite, if complementary, directions. Jung writes of 'an absolutely

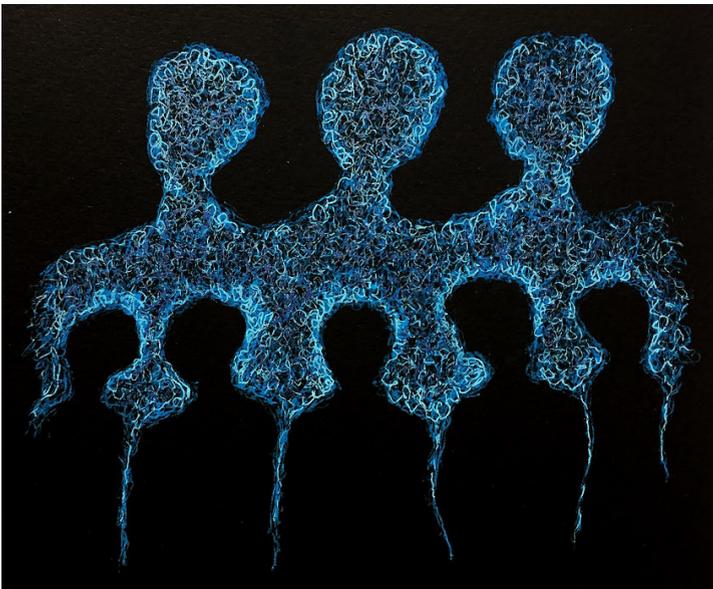
Chemical Signs explained.

<i>Acids.</i>	<i>Alkalies.</i>	<i>Metallic Calces.</i>
1. + @ vitriolic	20. @ v r pure fixed vegetable	44. ♀ 0 gold
2. + @ ♁ phlogisticated	27. @ v r pure fixed mineral	45. ♀ 30 platinum
3. + 0 nitrous	28. @ v r pure volatile?	46. ♀ 7 silver
4. + 0 ♁ phlogisticated		47. ♀ ♀ mercury
5. + 0 marine	<i>Earths.</i>	48. ♀ 10 lead
6. + 0 ♁ dephlogisticated	29. ♀ r pure ponderous	49. ♀ 9 copper
7. ∇ Aqua regia	30. ♀ r pure calcareous Lime	50. ♀ 8 iron
8. + F of fluor	31. ♀ r pure magnesia	51. ♀ 2 tin
9. 0 arsenic	32. ♀ r pure argillaceous	52. ♀ 8 bismuth?
10. + ▽ borac	33. ∇ r pure siliceous	53. ♀ 8 nichle
11. + @ sugar	34. ∇ water	54. ♀ 0 arsenic
12. + = tartar	35. ∆ vital air	55. ♀ 8 cobalt
13. + ♁ sorrel	36. ♁ phlogiston	56. ♀ 0 zinc
14. + C lemon	37. ∆ matter of heat	57. ♀ 8 antimony
15. + @ benzoin	38. ♁ sulphur	58. ♀ 8 manganese
16. + 0 amber	39. @ ♁ saline Separ	59. ♀ 8 siderite
17. + @ sugar of milk	40. ∇ spirit of wine	
18. # acious distilled	41. 3 0 ether	
19. + @ milk	42. 0 0 essential oil	
20. + F acids	43. 0 unctuous oil	
21. + 0 fat		
22. + ♁ of phosphorus		
23. + ♁ perlatum		
24. + 0 of profian blue		
25. ∆ aerial		

*Alchemical symbols in Torbern Bergman's
1775 Dissertation on Elective Affinities*

unconscious space in which an infinity of observers observe the same object...in the unconscious there is only one observer who observes an infinity of objects¹¹⁸. The *unus mundus* is then not just the understanding of the basic laws, but a sense of living one's life in right order, as if taking one's place as perceived in the Mind of the creator-observer. Thus von Franz takes as her task to observe, observe the observers, and attempt both to understand universal laws and to imagine from the mind of the one Observer.

In publishing this volume, the editors further the service which von Franz has rendered in her sorting through, connecting and relating, and presenting material from all times and places, compelling enough for a lifetime of research. One serious limitation—for not only a reviewer, but any reader—is the lack of an index, especially frustrating in a group of essays with complex overlapping material. That grumble aside, even the untraceable quotes matches the 'soup' or 'smear' or 'holon' which this volume engages. In terms of content, given the otherwise expansive and fluid grasp manifest in these essays, I found the traditional fixing of Spirit with Father and Matter with Mother constricting. Also, in the current understanding of quantum relatedness, I wondered if synchronicity might nowadays be aptly described as a-mechanical orderedness as well as a-causal orderedness.



Top: An Alchemist, after Jan Havicksz Steen, 1626-1679;
above: Observers and Observed, Richard Bright, 2016

In striving to understand late Jung and this volume, we are taken not only back to early wisdom, and to the outer boundaries of the impersonal aspect of Jungian thought about the objective psyche, but also to the cutting edges of what is observed and known about our world and our place in it. Jung was interested not in matter per se, nor in mind per se, but in matter-and-mind-and-psyche, as different expressions, manifestations, frequencies of a single force. In contrast with science's concern with knowledge of the seemingly infinite finite, for Jung, the telling question of our lives is whether or not we are able, with all our finite concerns, to stay related to the infinite. 'Only if we know that what truly matters is the infinite can we avoid fixing our interests on futilities. In the final analysis, we count for something only because of the essential we embodied, and if we do not embody that, life is wasted'¹⁹.

These essays are an example of the essential work embodied in von Franz's unwasted life. 'It seems to me,' she writes, 'one of the greatest merits of Jung, that he did not leave an intellectually closed system or doctrine, but that he opened so many doors, through which we can perceive an enormous amount of new, creative, possibilities for insight'²⁰. This volume is a guide across the threshold and a fair way beyond the doors. The vast amounts of knowledge in *Psyche and Matter* give information, insight, and perspective of the essential interfaces between material and psychic, human and archetypal realities, and also impart wisdom. It is thus only material to learn, to try to understand, to know, but also to reflect upon and engage in as a process by which one is changed.

Notes

¹ Jung, C.G. (1965) *Memories, Dreams Reflections*. New York: Vintage Books, pp. 309-319.

² Ibid p. 310.

³ Ibid

⁴ Jung, C.G. (1965) *Memories, Dreams Reflections*. New York: Vintage Books, pp. 309-319.

⁵ Rossi, E (1989b). 'Archetypes as strange attractors.' *Psychological Perspectives*, 20, 4-14, p. 5.

⁶ Ibid.

⁷ Ibid, p. 6

⁸ Ibid.

⁹ CW 9, ii, para. 41.

¹⁰ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 255.

- ¹¹ von Franz, Marie-Louise. (1992) 'Symbols of the *Unus Mundus*' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 52.
- ¹² von Franz, Marie-Louise. (1992) 'The Idea of the Macro- and Microcosmos,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 173.
- ¹³ Ibid. p. 18
- ¹⁴ Ibid.
- ¹⁵ von Franz, Marie-Louise. (1992) 'Symbols of the *Unus Mundus*,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 40.
- ¹⁶ 'The Idea of the Macro-and Microcosmos,' p. 173, quoted from the *Book of Sophie*, in the Berthelot Collection (1887), vol. 1, p. 213.
- ¹⁷ P. J. E. Peebles, D. N. Schramm, E. L. Turner, and R. G. Kron, 'The Evolution of the Universe' *Scientific American*, Oct. 1, 1994, p.55.
- ¹⁸ von Franz, Marie-Louise. (1992) 'Symbols of the *Unus Mundus*,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 59
- ¹⁹ Ibid.
- ²⁰ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 252.
- ²¹ Adler, Gerhard. 'Reflections on Chance, Fate, and Synchronicity,' *Psychological Perspectives*, vol. 20, number 1, 1989, pp. 29-30.
- ²² Jung, C.G. (1975) Letters, vol. 2. Princeton, NJ: Princeton University Press, p. 397.
- ²³ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 252.
- ²⁴ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 6.
- ²⁵ Ibid., p. 8
- ²⁶ Ibid., p. 19
- ²⁷ Ibid., pp. 29-30
- ²⁸ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 245.
- ²⁹ Ibid., p. 252.
- ³⁰ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 9.
- ³¹ Ibid.
- ³² von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 254.
- ³³ C.G. Jung. (1975) Letters, vol. 2. Princeton, NJ: Princeton University Press, p. 397.
- ³⁴ Sieg, C. 'Love, War, and Transformation, An Interview with Marie-Louise Von Franz,' *Psychological Perspectives*, vol. 24, 1991, pp. 54-63.
- ³⁵ Jung, C.G. (1965) *Memories, Dreams Reflections*. New York: Vintage Books, p. 221
- ³⁶ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 37.
- ³⁷ Jung, C.G. (1975) Letters, vol. 2. Princeton, NJ: Princeton University Press, p. 400.
- ³⁸ von Franz, Marie-Louise. (1992) 'Psyche and Matter in Alchemy and Modern Science' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p.163.
- ³⁹ Ibid.
- ⁴⁰ Ibid., pp. 163-164.
- ⁴¹ Ibid., p. 164.
- ⁴² Ibid., p. 165.
- ⁴³ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, pp. 225-256.
- ⁴⁴ Ibid. p. 256
- ⁴⁵ von Franz, Marie-Louise. (1992) 'Symbols of the *Unus Mundus*,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 51
- ⁴⁶ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 256.
- ⁴⁷ Ibid.
- ⁴⁸ von Franz, Marie-Louise. (1992) 'Meaning and Order,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 289.
- ⁴⁹ von Franz, Marie-Louise. (1992) 'The Synchronicity Principle of C. G. Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 217.
- ⁵⁰ von Franz, Marie-Louise. (1992) 'Meaning and Order,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 269.
- ⁵¹ Weinberg, Steven. (1994) *Dreams of a Final Theory: The Scientist's Search for the Ultimate Laws of Nature*. New York: Vintage Books, pp. 66-67.
- ⁵² Ibid., pp. 162-163.
- ⁵³ Davies, Paul. (1988) *The Cosmic Blueprint: New Discoveries in Nature's Creative Ability to Order the Universe*. New York: Simon & Schuster, p.196.
- ⁵⁴ von Franz, Marie-Louise. (1992) 'Meaning and Order,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, pp. 267-269.
- ⁵⁵ von Franz, Marie-Louise. (1992) 'Psyche and Matter in Alchemy and Modern Science,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 163.
- ⁵⁶ von Franz, Marie-Louise. (1992) 'Symbols of the *Unus Mundus*,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 55.
- ⁵⁷ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 23.
- ⁵⁸ Ibid, p. 27
- ⁵⁹ (Ibid., p. 29
- ⁶⁰ Davies, Paul. (1988) *The Cosmic Blueprint: New Discoveries in Nature's Creative Ability to Order the Universe*. New York: Simon & Schuster, p.196.
- ⁶¹ Peat, F.D. 1987. *Synchronicity: The Bridge Between Matter and Mind*. New York: Bantam Books

- ⁶² von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 262.
- ⁶³ von Franz, Marie-Louise. (1992) 'The Synchronicity Principle of C. G. Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 203.
- ⁶⁴ von Franz, Marie-Louise. (1992) 'Time: Rhythm and Repose' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 71.
- ⁶⁵ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 247.
- ⁶⁶ von Franz, Marie-Louise. (1992) 'The Psychological Experience of Time' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 123.
- ⁶⁷ von Franz, Marie-Louise. (1992) 'Time: Rhythm and Repose' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 72.
- ⁶⁸ C.W., ii, para. 963.
- ⁶⁹ von Franz, Marie-Louise. (1992) 'The Psychological Experience of Time' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 134.
- ⁷⁰ Ibid., p. 137.
- ⁷¹ von Franz, Marie-Louise. (1992) 'Symbols of the *Unus Mundus*' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 54.
- ⁷² von Franz, Marie-Louise. (1992) 'The Psychological Experience of Time' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 136.
- ⁷³ Ibid., p. 135.
- ⁷⁴ Ibid.
- ⁷⁵ Ibid., p. 140.
- ⁷⁶ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 253-254.
- ⁷⁷ Ibid., p. 253.
- ⁷⁸ Ibid., p. 254.
- ⁷⁹ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 17.
- ⁸⁰ Edelman, Gerald M. (1992) *Bright Air, Brilliant Fire: On The Matter Of The Mind*. New York, Basic Books, p.10.
- ⁸¹ Ibid.
- ⁸² Ibid., p. 11.
- ⁸³ Ibid., p. 15.
- ⁸⁴ Berman, Morris. (1989) *The Re-enchantment of the World* (New York, Bantam Books, p. 2.
- ⁸⁵ von Franz, Marie-Louise. (1992) 'Symbols of the *Unus Mundus*' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 53.
- ⁸⁶ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 16.
- ⁸⁷ von Franz, Marie-Louise. (1992) 'Time and Synchronicity in Analytical Psychology,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 294.
- ⁸⁸ Edelman, Gerald M. (1992) *Bright Air, Brilliant Fire: On The Matter Of The Mind*. New York, Basic Books, p.6.
- ⁸⁹ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 17.
- ⁹⁰ Ibid.
- ⁹¹ Ibid., p. 25
- ⁹² Edelman, Gerald M. (1992) *Bright Air, Brilliant Fire: On The Matter Of The Mind*. New York, Basic Books, p.114.
- ⁹³ Ibid., p. 115.
- ⁹⁴ Koestler, Arthur (1964) *The Act of Creation*. New York: The Macmillan Company, p. 252.
- ⁹⁵ Ibid.
- ⁹⁶ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 258
- ⁹⁷ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 17.
- ⁹⁸ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 258
- ⁹⁹ Ibid., p. 255
- ¹⁰⁰ Ibid., p. 258
- ¹⁰¹ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 258
- ¹⁰² Weinberg, Steven. 'Life in the Universe,' *Scientific American*. October 1994, p. 47.
- ¹⁰³ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 12.
- ¹⁰⁴ von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 254
- ¹⁰⁵ von Franz, Marie-Louise. (1992) 'Meaning and Order,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 286.
- ¹⁰⁶ Ibid., p. 287.
- ¹⁰⁷ von Franz, Marie-Louise. (1992) 'Symbols of the *Unus Mundus*,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 58.
- ¹⁰⁸ von Franz, Marie-Louise. (1992) 'Time: Rhythm and Repose' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 73.
- ¹⁰⁹ von Franz, Marie-Louise. (1992) 'Matter and Psyche from the Point of View of the Psychology of Jung,' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 15.
- ¹¹⁰ Gleick, James. (1987) *Chaos: Making a New Science*. New York: Penguin Books, p. 8.
- ¹¹¹ Gould, Stephen Jay. 'The Evolution of Life on the Earth,' *Scientific American*, October 1994, p. 85.
- ¹¹² von Franz, Marie-Louise. (1992) 'Some Reflections on Synchronicity' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 259
- ¹¹³ Weinberg, Steven. 'Life in the Universe,' *Scientific American*. October 1994, p. 48

¹¹⁴ Ibid., p. 49

¹¹⁵ Ibid., pp. 47-48

¹¹⁶ Berman, Morris. (1989) *The Re-enchantment of the World* (New York, Bantam Books, p. 83.

¹¹⁷ Weinberg, Steven. (1995) *Dreams of a Final Theory: The Search for the Fundamental Laws of Nature*. New York: Vintage, p. 34

¹¹⁸ Jung, C.G. (1965) *Letters*, vol. 1, Princeton: Princeton University Press, pp. 174 ff.

¹¹⁹ Ibid., p. 325.

¹²⁰ von Franz, Marie-Louise. (1992) 'Psyche and Matter in Alchemy and Modern Science' from *Psyche and Matter*. Boulder CO: Shambhala Publications, p. 162.



“**I** stepped down into the most hidden depths of my being, lamp in hand and ears alert, to discover whether, in the deepest recesses of the blackness within me, I might not see the glint of the waters of the current that flows on, whether I might not hear the murmur of their mysterious waters that rise from the uttermost depths and will burst forth no man knows where. With terror and intoxicating emotion, I realized that my own poor trifling existence was one with the immensity of all that is and all that is still in process of becoming.”

Teilhard de Chardin

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