

Joseph Cambray

Synchronicity

Nature and Psyche in an Interconnected Universe

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1 Introduction

The concept of synchronicity

I felt the need to reexamine his notion (of synchronicity) in light of **new models of the mind** and changes in scientific understanding (the emergence of the field of **complexity studies**).

Synchronicity as „a meaningful coincidence“ and „an acausal connecting principle“ was a provocative hypothesis when it first was published and has remained so up to the present. In it **C.G.Jung aimed at expanding the Western world's core conceptions of nature and the psyche**. By requiring that we include and make room for **unique individual experiences of life** in our most fundamental philosophical and scientific **views of the world**, Jung challenged the status quo, **urging us to go beyond the readily explainable, beyond the restrictions of cause-effect reductive description of the world, to seeing the psyche as embedded into the substance of the world**.

Boe: subjectivity –objectivity vgl.FuchsProspect7: **Das Unjekt System** – Unjekt: „Begriff der die **Trichotomie** von **“Sein/Nichts/ Möglichkeit”** unterläuft durch die Referenz auf Dinge die es gibt aber nicht auf die Weise gibt, wie wir gewöhnlich dieses **“Es gibt”** verstehen“.

2 As in so many of his ideas and projects, his genius resided in his capacity to see great depth in the odd, curious, and seemingly erroneous aspects of existence...His was a mind open to exploring the **possibility of meaning in chance or random events, deciphering if and when meaning might be present even if outside of conscious awareness**.

In these endeavours Jung was radically transgressive, he cared little for the confines of boundaries of different disciplines but **sought the most profound patterns in mind, culture, and nature, what he called „archetypes“**.

field theories – complexity-theory – complex adaptive systems with their capacity for self-organisation and emergence

6 Chapter 1: **Synchronicity: The history of a radical idea**

8 Jung's interest in the orient (meaning Chinese thought, especially Taoism):

1928 Jung's interest in the orient intensified – he had received **“The Secret of the Golden Flower”** from his friend Richard Wilhelm:

„The East bases much of its science on this irregularity and **considers coincidences as the reliable bases of the world rather than causality. Synchrony as is the prejudice of the East; causality is the modern prejudice of the West**. The more we busy ourselves with dreams, the more we shall see such coincidences - chances. Remember that the oldest Chinese scientific book (the I Ching) is about the possible chances of life“.

1929: “I have invented the word **synchronicity** as a term to cover phenomena, that is **things happening at the same moment as an expression of the same time content**“.

In the following year (1930) Jung made his first public proclamation of the term „synchronicity“ at the memorial address for Richard Wilhelm: **„The science of the I Ching is based not on the causality principle but on one which - hitherto unnamed because not familiar to us - I have tentatively called the synchronistic principle“**.

9 Erano lecture „On Synchronicity“ (1951) - which is itself drawn from the more complete essay „**Synchronicity: An Acausal Connecting Principle**“ (1952).

14 Jung uses this material in conjunction with his **synchronicity hypotheses** to dismiss causality on the grounds that **these kinds of phenomena cannot be understood in terms of energy** but as „a falling together in time, a kind of simultaneity“, which then becomes the reason for his choice of the term **synchronicity**.

I (Chambray) have examined this hypotheses regarding energy and have shown that the constraints Jung was applying (from 19th-century views on thermodynamics of systems at equilibrium) should be reconsidered in the light of the **study of open systems, far from equilibrium, such as all forms of life, that can dissipate energy to create order locally**. This in turn leads to the **study of self-organising systems within complexity theory**.

Comprehending synchronistic events beyond the **notion of chance** or manifestations of **probability** associated with large numbers, as is typically done by mathematicians, was something Pauli was able to address directly with Jung.

Pauli's **linking Jung's use of time with his concept of the „psychoid“**: „inasmuch as „synchronistic“ events form what you have termed a „**psychoid**“ **initial stage of consciousness**, it is understandable if (not always, but in many cases) they also share this standard characteristic of simultaneity. This also suggests **the meaning-connection, as primary agent, produces time as the secondary one**“.

15 The **notion of the psychoid** was coined around 1907 by the biologist **Hans Driesch**; he used it as „the bases of instinctive phenomena“ in an idealistic sense; it is **a nonphysical entity, the potential in the psyche with intensive, qualitative properties but without extension**.

Boe: potential – potentiality – potentiality space? - qualitative properties but without extension – Laozi 42

道德經：道生一，一生二，二生三，三生萬物

The transformations of the Dao

The Dao produced One;

One produced Two;

Two produced Three;

Three produced All things.

<http://www.uboeschstein.ch/texte/Dao/laozi42.html>

Jung intends it as „**quasi-psychic**“ at the **interface where the psychological and the material are undifferentiated and capable of reaching consciousness as such; it operates prior to any Cartesian-like separation of mind and body, rather like an aspect of the unus mundus of alchemy, the unitary world at the fundament of our world**.

Curiously, some cosmologies of the premodern era, such as the alchemical one parallel that of subatomic physics with **an original stage prior to any differentiation of substances**.

They present a world of relations rather than objects, that is, attending to the interconnectedness of all things, where interactive processes appear more fundamental than discrete particles.

Pauli's suggestion does help Jung reconsider **the notion of qualitative time** as found in the I Ching, or more generally in prescientific cultures.

Grappling with the new worldview arising through physics in the first half of the 20th century Jung remarks:

15 „But if **space and time are only apparently properties of bodies in motion** and are **created by the intellectual needs of the Observer**, then their relativisation by psychic conditions is no longer a matter for astonishment but this brought within the bounds of possibility“. (Jung Synchronicity 20)

Boe: **meaning-time** **the notion of qualitative time** vgl. Fuchs Prospekt

16 „It was Einstein who first started me thinking about the possible relativity of time as well as space, and their psychic conditionality. More than 30 years later this stimulus led to my relation with a physicist Wolfgang Pauli and do my **theses of psychic synchronicity**“.

This **psychic relativism is then linked to the underlying affect** associated with the archetypal energies are engaged:

„Meaningful coincidences seem to rest upon an archetypal foundation. Affectivity, however, rests to a large extent on the instincts, whose formal aspect is the archetype“.

16 **Jung is seeking to create a theory of the world based on the psychoid archetype as an originary point from which the subjective and objective realms emanate.**

20 (Jung Synchronicity 28: „Synchronistic events rest on the simultaneous occurrence of two different psychic states. One of them is the normal, probable state (the one that is causally explicable), and the other, the critical experience, is the one that cannot be derived causally from the first...29 An unexpected content which is directly or indirectly connected with some objective external event coincides with the ordinary psychic state: this is what I call **synchronicity**, and I maintain that we are dealing with exactly the same category of events whether their objectivity appear separated from my consciousness in space are in time... **Space and time, the conceptual coordinates of bodies in motion, are probably at bottom one and the same** (which is why we speak of a long or short „space of time“). Synchronicity in space can equally well be conceived as perception in time, but remarkably enough it is not so easy to understand synchronicity in time as spatial, for we cannot imagine any space in which future events are objectively present and could be experienced as such through a reduction of this spatial distance....)

20since experience has shown that **under certain conditions space and time can be reduced almost to zero, causality disappears along with them**, because **causality is bound up with the existence of space and time and physical changes, and consists essentially in the succession of cause-and-effect**. For this reason **synchronistic phenomena cannot in principle be associated with any conceptions of causality. Hence the interconnection of meaningfully coincident factors must necessarily be thought of as acausal**“ (Jung-Synchronicity28-29).

Jung is speaking here about **acausal coincident phenomena that are meaningfully linked**, but the collapse of space time together with the disappearance of the principle of causality is **remarkably congruent with the best theories in physics for the origins of the universe**. The point in this is to try and articulate what Jung may be reaching for with his theory of synchronicity.

Boe: **the psychoid archetype – ordering principle – numbers** vgl. Robertson

It is as if at the deepest level he is finding a place for the psyche at the origins of the universe through **the psychoid archetype**. This is not an intelligent design argument but an indication that **the universe is as permeated with psyche as it is with space, time, and matter**; that **synchronicities provide traces of an original undifferentiated state**. In such a cosmogony I suggest Jung is leading us to see psyche as another of the potentials inherent in the singularity.

Boe: **information!!** vgl. Peirce Firstness - emergence

20 As the universe expands from the primordial singularity and cools, matter is separated from energy yet can interact with it 21(for example, as radiation) and **space-time emerges; patterns begin to take shape and become substantial**, first in the form of particles, which make up matter, then with greater cooling and expansion into clouds, which becomes stellar and galactic nurseries from which eventually **the patterns that lead to life emerge and so on to consciousness**, that is, **patterns with the potential to form psyche and hold meaning**.

That Jung recognised such potentials within the context of evolution on Earth is evident from his March 1959 letter to Erich Neumann:

„In this case of chance, synchronistic phenomena were probably at work, **operating both with and against the known laws of nature to produce, in archetypal moments, synthesis which appeared to us miraculous...** This presupposes not only **an all-pervading, latent meaning which can be recognised by consciousness**, but during that preconscious time, **a psychoid process with which a physical event meaningfully coincides. Here the meaning cannot be recognised because there is as yet no consciousness**“.

21 Jung's identified **forerunners to the idea of synchronicity**:

22 Albertus Magnus – Avicenna – Goethe

23 After presenting the astrology experiment, Jung returns to the forerunners now with more detailed exploration of the philosophical side of **Taoism**. Wilhelm's **translation of the Tao as „meaning“** is key for Jung. Lao Tsu's description of **the nature of the Tao as „no-thing“ is tied to meaning or purpose for Jung**. He notes that **„it is only called nothing because it does not appear in the world of the senses, but is only its organiser“**; the capacity for **organisation, more exactly self-organisation, as the source of synchronistic meaning is crucial**.

Searching for a parallel in the history of Western thought, Jung moves to the medieval world with a theory of *correspondentia*.

25 Hippocrates: There is one common flow, one common breathing, all things are in sympathy. The whole organism man each one of its parts are working in conjunction for the same purpose... **The great principle extends to the extremist part, and from the extremist parts returns to the great principle, to the one nature, being and not-being**“.
(Jung-Synchronicity74)

This is **a model of a wholly or radically interconnected universe**.

Jung continues to amplify this viewpoint with a series of philosophers from the ancient world through to the Renaissance. The last and most useful for his study is **Gottfried Wilhelm von Leibniz** (1646-1716)

Boe: **theory of monads – vgl. Medium Sinn (Information: (Bateson) a difference that makes a difference.)**

Leibniz's notion of the **„pre-established harmony“**, which was in part his rejoinder to Descartes' mind/body split, is particularly of interest to Jung.

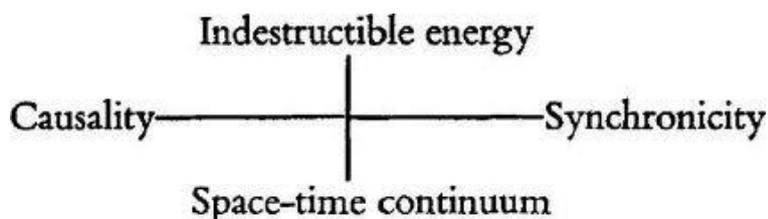
Leibniz was opposed to dualism, seeing mind and body as ultimately composed of the same substance, yet each remains metaphysically distinct without interaction. The idea is drawn from his **theory of monads**, the **basic units of perceptual reality that form all substances**; for Leibniz the **soul is seen as a rational monad**. To review Descartes, Leibniz postulates monads as being wholly without interactions among themselves but having been initially coordinated by God in a preestablished harmony that keeps them in tandem with one another, linked but without causality.

26 Jung's reading of Leibniz focuses on how the monads are each an „**active indevisible mirror**“, a microcosm with connections „which express all the others“; „**a perceptual living mirror of the universe**“. (Jung-Synchronicity83)

27 Jung's **Conclusions**: The final section of the monograph is mostly devoted to discussing the need for the concept of synchronicity. Jung is especially concerned about the **psychophysical parallelism** including the mind/body problem and the expanded question of general acausal orderedness. The first issue he raises is „absolute knowledge“, which he feels is „characteristic of synchronistic phenomena, a knowledge not mediated by sense organs“, which in turn „supports **the hypothesis of selfsubsistent meaning**, or even expresses its existence“. This would be **a form of unconscious knowing mediated by archetypal processes**.

Jung's second example of **non-cerebral intelligence** came from the then recently published study of The Dancing Bees by Karl von Frisch. The purposeful, intelligent communicative power of the dance of bees providing a navigational information to hive mates so as to locate a source of Poland was I opening to Frisch and many others at the time. The **adaptive intelligence of social insects** was a subject of growing interest in the scientific community through the middle years of the 20th century. As the field has developed, more explicit, detailed studies of what is now often called **swarm logic** have appeared in a variety of disciplines. These demonstrate “bottom up” organisational features with emergent properties.

28 In the final portion of the conclusion Jung raises the question of the frequency of synchronicities, rare or common, and moves into a discussion of **general acausal orderness**. **For Jung this includes the properties of numbers** (for example, consider prime numbers), radioactive decay, the possible relations between mind and body, and so on - the role of radioactivity in Jung and Pauli's correspondence and in the synchronicity hypotheses will be taken up when we look at symmetry. Jung's penchant for quaternities led him together with Pauli to suggest several diagrams for re-envisioning of Western science and philosophy (that is, space and time on the vertical axis with causality and synchronicity on the horizontal axis; **indestructible energy and space-time continuum on the vertical, and constant connections through effect (causality) and in constant connections through contingents, equivalence, or „Meaning“ (synchronicity) on the horizontal**.



Jung relies on the psychoid aspect of his archetypal theory to provide a bridge between causality and synchronicity:

„Archetypal equivalences (outer physical and inner psychic processes) are *contingent* to causal determination, that is to say there exist between them and the causal processes no relations that conform to the law... It is **an initial state which is „not governed by mechanistic law“but is the precondition of law, the chance substrate on which law is based. If we consider synchronicity or the archetypes as the contingent, then the latter takes on the specific aspect of a modality that has the functional significance of a world constituting factor. The archetype re-presents psychic probability“**. (Jung-Synchronicity99)

Thus synchronicity is leading Jung to an expansion of his archetypal theory, while at the same time he subsumes **synchronicity as a special subset of the general acausal orderedness**.

29 The **archetype-as-such is without formal content, only the potential to express**, as in the axis of a crystal lattice, one of his metaphors for it. Pauli remarks that „the archetype should not be seen as an „inborn structure“ lying „latent“, just waiting to manifest itself, but as something that constellates, or emerges at certain stages and situations in life. Thus the concept is moving towards **an emergentist view**, and in the passage above it is **the archetype-as-such that serves as the explanatory principle that would gained the status of a new paradigm. Within this view it becomes the deep background organising force for all knowledge of the physical and the psychological universes; psychology itself becomes the guardian of the arts and sciences, holding the keys to cosmological as well as ontological secrets. Here we have a grand vision to which Jung is striving and to give birth late in life.**

30 As a theory, synchronicity therefore seeks to present a universal principle, something fundamental to the world, at the core of existence and not only human existence but of the world itself. Jung seeks to go beyond the description of classical physics, as the best of his contemporaries in physics were doing, but using his psychological understanding to derive a compensatory notion to causality. This is guided in part by the project of articulating a holistic science, valuing the profound interconnectedness of all things. Discerning patterns of the whole that links disparate elements into a unity that cannot be adequately described by reductive approaches provided perspective Jung felt was missing from the scientific world view of his day... And then

Jung's search for **an ordering principle at the origins of creation** (natural and human) involves a great intuitive leap that has the potential to demonstrate the utility of a psychological approach to knowledge - **synchronicity as a theory of creativity** at the edge of genius and madness... Jung was one of the first scientific psychologists to adopt what might now be called **a qualitative phenomenological approach** to research using clinical data.

As **a creative act**, developing the theory of synchronicity required Jung to go to the edge of his own knowledge as well as seeking the limits of his collaborators, especially Pauli. Just **as the capacity for metaphor has been linked to the formation of mind, synchronicity could be traced as a specific kind of metaphor-forming process when reflected upon from outside the event - an objective metaphorizing tendency of the world itself.**

Disparate elements without apparent connection are brought together or juxtaposed in a manner that tends to shock or surprise the mind, rendering it open to new possibilities, for a broadening of the view of the world, offering a glimpse of the interconnected fabric of the universe.

Boe: creativity

32 The term **holism** goes back to the ancient Greeks – **holos** - meaning whole, entire, complete. Aristotle states: „In the case of all things which have several parts and in which the totality is not, as it were, a mere heap, but the whole is something beside the parts, there is a cause“; or in the shorthand of **Gestalt psychology: the whole is greater than the sum of its parts.**

Throughout Western history there has been **a tension, at times complementarity, between holistic and reductionistic approaches to understanding the world.**

Reductionism is the method of breaking down something complex into its component parts and explaining its operations and functions through these components. Western science with its analytic paradigm as primarily focused on the explanatory power of the reductive approach, especially as this lends itself more readily to quantitative and mathematical treatments.

33 **Holism:** While Jung does not use the term holism or its variants, he writes extensively about the value of „**wholeness**“. Thus, his model of psychological health and maturation focuses on the integration of the personality. The process of individuation is a sustained dialectic that occurs through the conscious self, the sense of I, identifying, engaging and/or confronting unconscious dimensions of the personality.

In discussing **individuation**, becoming more fully oneself, Jung repeatedly points out that this is not a form of perfectionism but is about **completeness**; it requires finding ways to deal with all aspects of one's personality, positive and negative. Because Jung includes the undesirable aspects of personality, both individual and collective, **the holistic goal tends to differ from that of morality, which is commonly found in many philosophical or religious systems that emphasise seeking only the good in oneself and the world.**

34 Related to **individuation** is Jung's larger view of **the Self, as the centre and circumference of the entire personality, conscious and unconscious.** For Jung the ego is merely the centre of consciousness, while **the Self is the archetypal potential from which the ego complex emerges.** The Self serves as the deepest source of motivation for the unfolding and subsequent reunification of the personality.

Models of the development of the personality associated with this view have a trajectory beginning with **ego emergence from the primal Self** followed by the need for **sustained interaction between ego and self**...The Self appears as a paradoxical, quasi-religious entity for Jung, it is **the central archetype but also encompasses the whole of the archetypal world, the collective unconscious, as well as the conscious personality;** it is clearly a whole that cannot be described solely in terms of its parts and is not definable as a completely largest equally consistent term.

35 Philosophically Jung was intrigued by **binary oppositions**, such as conscious/unconscious, day/night, and such, together with their compensatory relationships. **The resolution of the psychological tension engendered from attempting to hold opposites in mind comes through the emergence of a third position**, reminiscent of the Hegelian theses, antitheses and synthesis. However, for Jung the **third is did not achieve wholeness until becoming a quaternity**; fourfold structures were seen by him as balanced and complete.

Jung developed his own unique methods for handling unconscious material, they too had a **holistic focus** to them. When first formulating his **method of amplification** in 1914 he explicitly stated that he was seeking **a way to analyse that was not reductive but constructive.**

By this point he is already differentiating his approach from a strictly causal one, referring to the human psyche he says:

„Only on one side is it (the psyche) something that has come to be, and, as such subject to the causal standpoint. The other side is in the process of becoming, and can only be grasped synthetically or constructively.

The causal standpoint merely enquires how the psyche has become what it is, as we see it today.

The constructive standpoint asks how, out of this present psyche the bridge can be built into its own future“.

36 Holism in science, Field Theory

While **traditional cultures have often viewed there are entire world as alive and profoundly interconnected in mysterious, magical ways, frequently portrayed in their mythologies**, these notions are usually dismissed and omitted from the history of science as mere superstitions. However, in the last half-century the way in which the history of science itself has been constructed is under investigation by scholars, and **alternative views are emerging**.

Val Dusek The Holistic Inspirations of Physics (1999):

Dusek identifies **three worldviews as having links, either directly or indirectly, to classical field theory: traditional Chinese thought, Renaissance hermetic or occult theory, and German Romantic philosophy.**

Students of Jung will immediately recognise **the relevance of all these systems to Jung's psychological theories, including synchronicity**; they would include his interest in texts such as the **I Ching** and **The Secret of the Golden Flower**, many other sources for his alchemical writing, as well as the philosophical roots of much of depth psychology in 19th-century German philosophy and literature.

To locate the **development of classical field theory**, itself a 19th century achievement, in the history of scientific ideas, a bit of historical background will help.

Copernicus,

Galileo,

Kepler,

René Descartes with his analytical geometry. Descartes is also known for his philosophical views stemming from his meditations, especially **the view of soul as wholly separate from the body, a radical dualism in which matter and mind are completely distinct entities.**

Isaac Newton: The success of Newtonian physics resulted in a **mechanistic worldview** that held sway for several centuries and still has application for human scale observations.

38 The model implicitly held space to be empty and absolute, a three-dimensional Cartesian framework through which bodies moved. Time was likewise seen in absolute terms, a constant one-way flow from past through the present to the future that could be arbitrarily subdivided into units using mechanical devices such as clocks.

Leibniz: the codiscoverer of calculus alongside Newton, was deeply concerned about **symbolic thought - for him mathematics as part of a search for a universal language**. Most of the scientists and mathematicians of the period had **strong philosophical interests that went well beyond the bounds of what could be quantified**, but these views were edited out of the subsequent Enlightenment's reductionistic reading of nature... Leibniz with his attention to the **continuum (the sort of pleromatic background to the universe, a holistic fundament)** oppose the atomistic view of Newtonian particulate bodies, he also

presented perspectives linking time and space is being relational - the later caused Einstein to declare himself a „Leibnizian“ - rejecting Newton's absolutes of time and space. For Leibniz **matter consisted of intensifications of forces or energy as dimensionless points in the continuum, expressions of monads...** that served as one of the **key precursors to Jung's idea of synchronicity**. For Leibniz each monad is as if **a mirror in which all of the universe/all other monads is reflected**.

Spinoza in rejecting Descartes's dualism developed his **dual aspect of monism (mind and matter are two different aspects of an underlying unity, a radically holistic stance)**. Strikingly, this last theory has recently enjoyed a resurgence among some neuroscientists examining the brain/mind interface (Damasio-Spinoza).
Kant

39 Michael Faraday: In his study of electrical and magnetic phenomena he identified **lines of force**, for example, seeing magnetic strain as permeating the space around magnetic phenomena, he identified the **circularity of the force and its persistence in a vacuum**, that **it was nonlinear and impacted space itself without a particulate medium**. He develop this into an **idea of a field** (1845). Rejecting Newtonian views of space as empty and absolute, Faraday instead envisioned the space around electric and magnetic phenomena as permeated, even composed of lines of electromagnetic force. From a Jungian perspective we would identify this as the **reemergence of an archetypal idea leading to a vision of a wholly interconnected universe**, an image that Jung would draw upon.

40 James Clerk Maxwell:

41 The parallels between the study of electromagnetism in 19th-century science and the fascination with hypnotic phenomena often referred to as a form of „magnetism“ linked directly to the intense interest at the time in mediums, as in William James study of Leonora Piper and in Young's medical dissertation where he reports his observations...on „magnetic passes“.

Einstein: special theory of relativity (the relativity of all inertial frames of reference)
general theory of relativity, unifying special relativity, Newton's universal gravitation with a new, and **non-Euclidean geometric view of space-time**.

Field theories: Field theories generally are derived from studying interactions; whatever discipline uses such a theory, its application focuses on **manifestations or expressions of an underlying connecting principle**. As traced above, during the period from the 1870s well into the 20th century, Field theories were defining the Zeitgeist, especially in the physical sciences and were being imported into psychology by notable figures such as William James with his „**field of consciousness**“

118 William James **The Varieties of Religious Experience:**

„The expression „field of consciousness“ has but recently come into vogue in the psychology books. Until quite lately the unit of mental life which figured most was **the single „idea“**, supposed to be a definitely outlined thing. But at present psychologists are tending, first, to admit that **the actual unit is more probably the total mental state, the entire wave of consciousness or field of objects present to thought at any time**; and, second, to see that **it is impossible to outline this wave, this field, with any definiteness...**

The important fact which this „field“ formula commemorates is **the indetermination of the margin**. Inattentively realised as is **the matter which the margin contains**, it is nevertheless there, and helps both to guide our behaviour and to determine the next movement of our attention. It lies around us like a „magnetic field“, inside of which our centre of energy turns like a compass needle, **as the present phase of consciousness alters into its successor**.

42 Jung: **It is Einstein who first started me thinking about the possible relativity of time as well space, and their psychic conditionality.**

43 Although Jung does not explicitly refer to his model of the psyche as a form of field theory, it clearly owes much to this formulation. Nevertheless, his understanding of such theories tended to be more classical than modern. **Pauli was unconvinced by Jung's views of an objective psyche.**

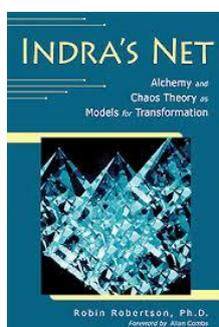
Gieser: Jung's assumption that the unconscious contains autonomous, regular processes that are *unrelated* to consciousness was epistemologically unacceptable to Pauli. It reminded him of the **antiquated viewpoint of classical physics that one can describe the objective order in the cosmos without taking the moment of observation into account**. Pauli labelled this position „ the classical idea of the objective reality of the cosmos“. He compared Jung's way of describing the unconscious with the classical field concept of physics and Maxwell's equations. **Jung still used a mode of description which did not take the new epistemological situation revealed by quantum physics satisfactorily into account. Despite many advances in that direction he still had a tendency to treat the unconscious as a field that may be observed without considering the influence of the observation.**

44 That these field descriptions derived from archetypal fantasies can be seen through amplification. The **unus mundus** of alchemy is one example of a **unified field**. Another **archetypal field image** is „**Indra's net**“ from Indian and Chinese Buddhist philosophy. This image is one of the primary metaphors of the **Hua-yan, or flower garland school**:

In the heaven of the great God Indra is said to be a vast and shimmering net, finer than a spider's web, stretching to the outermost reaches of space. Strung at each intersection of its diaphanous threads is a reflecting jewel. Since the net is infinite in extent, the jewels are infinite in number. In the glistening surface of each jewel is reflected all the other jewels, even those in the furthest corner of the heavens. In each reflection, again are reflected all the infinitely many other jewels, so that by this process, reflections of reflections continue without end.

David Mumford, Caroline Series, and David Wright: *Indra's Pearls: The Vision of Felix Klein*; Cambridge University Press, 2002.

As already seen, Leibniz's monads also share this same fundamental image, his mirror thesis insists that each monad reflects all others, that is, the whole universe in itself. **A holistic, radically interconnected, reflective universe** has been a recurrent imagining of humanity, and **Jung's theory of the self together with a collective unconscious** offer a psychological reading of this archetypal pattern. **Synchronicity becomes a particularly potent manifestation of the field with the resonant reflections of internal and external events.**



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46 The new science of **complexity and emergence**

Several streams of research have converged over the past half century to create a new way of looking at phenomena that had been too difficult to assess with previous scientific models... It became possible to **analyse systems operating far from equilibrium**, systems that interact with their environments and had **spontaneous, adaptive responses**. The systems of interest **display complexity, that is, they have emergent properties**, meaning that **interactions among the parts produce behaviours that are greater than the sum of the interactions** but also manifest new, unexpected higher levels of functioning and order in the process of adapting to their surroundings... In their macrobehaviours **complex adaptive systems (CAS) with emergent properties display holistic features**.

The **return of Holism** in the sciences through complexity theory has cut across traditional academic disciplines. The **emergentist paradigm** appears to have applicability at all levels of scale from the most microscopic/subatomic descriptions of physics, on through aggregate phenomena in chemistry, biology, and astronomy, as well as in the human and social sciences. Complex systems operate at all these levels, but it also appears to be integral in our understanding of the **transitions between levels**. Perhaps one of the most relevant examples is the **emergence of mind from the body/brain matrix**.

Boe: Fuchs – conditioned coproduction

46 **Complex systems are non-linear**, so that seemingly minor alterations in initial conditions, can result in surprisingly large changes. Complex adaptive systems are distinct for their **self-organising properties**, new levels of organisation come at the expense of dissipation of energy. Such systems **operate far from equilibrium and so cannot be analysed by the classical laws of thermodynamics**.

The last point can serve as a starting place for **a reconsideration of Jung's formulation of synchronicity in terms of emergence**.

In his synchronicity essay Jung saw **meaningful coincidence** as being inexplicable and acausal because for him they lay outside of energetic phenomena. With access to complexity theory, this can be reconsidered in the light of **energetics of open systems far from equilibrium**, capable of developing CAS... The higher-order phenomena associated with a self organising features, that is, **emergence**, tends to appear at the edge of order and chaos. This seems a remarkably useful way of describing and tracking Jungian analytic processes. In terms of field theory, **emergent phenomena would be expected to occur in just those regions of the field that are undergoing self-organisation**.

48 Jung's notion of the **Self can be read as an emergent property of the psyche**, and synchronicity is consistent with an emergentist paradigm. In recent years growing numbers of analytical psychologists have begun to apply systems and complexity theories of the Jungian approach.

49 **Dynamic networks**, composed of things and/or processes that are interconnected, make up a particularly interesting and relevant subset of complex adaptive systems. These networks tend to be described in terms of „hubs“, centres that are richly linked to other centres, and „nodes“ that have lesser numbers of links. Mapping the hyperlinks between various sites of the World Wide Web was one of the systems that gave rise to this description.

An essential feature of these networks is their „**scale-free**“ **properties**, that is, **they are fractal-like, appearing similar at various levels of scale**. Many natural systems display self-similarity at several scales, for example, the branching of nerves, blood vessels, mountain ranges, and so on. Significantly, **scale free networks are known to have self-organising properties**.

50 A transpersonal psyche with a collective unconscious composed of the sum of all the archetypes as Jung's model proposed would have features of a scale free network structure.

51 As the current generation of Jungians study and incorporate these models into analytic theory, a full formulation of **a psychological network model** probably could assist in broadly integrating psychoanalytic models into a holistic one. The personal complexes residual from childhood would be seen is organised around the major archetypes active during early development; these would form the hubs of analytic theory.

52 Symmetry

Scientific studies across a variety of disciplines have revealed the **importance of symmetry in relation to complexity**. The primary observation is that the formation of, or increasing, complexity is characterised by **a breaking of the symmetry of the precursors state**.

53 The human mind's capacity to use symmetry unconsciously can be striking.

56 degrees of symmetry - M.C.Escher

57 Field theories all exhibit significant symmetry in terms of laws of nature, and especially in time – a new form of symmetry not fully recognised prior to modernity. However, with the advent of dynamic quantum theory and studies in high-energy physics, some shocking new results emerged.

58 For Pauli the whole question of the relationship between physics and psychology „is that of **a mirror image**“... The attempt to restore symmetry becomes linked to synchronicity: „If the parapsychological phenomena go deeper, then the psyche has to be taken into consideration so as to be able to see the full symmetry of the phenomenon..

Jung replies: „a constellated, i.e., activated, archetype may not be the cause but is certainly a condition of synchronistic phenomena... Occurrences might be expected that correspond to the **archetype as a sort of mirror image**“.

59 Jung then goes on to discuss the **role of symbols in the individuation process**, with the goal of wholeness, which he says „should mean that **the mirror image effect, which dazzle us, would be removed... This would be done by an „asymmetrical“ Third**, which **prefers one direction; namely - according to legend - the direction toward greater differentiation of consciousness, as opposed to the balance of conscious-unconscious... The parity operation corresponds to the psychological opposition...** The fact that it is precisely the weak interactions that exhibited asymmetry forms almost comic parallel to the fact that it is precisely the infinitesimal, psychological factors, overlooked by all, that shake the foundations of our world.

As he nears the end of his letter, Jung makes a statement that is of particular interest. He says: The **psychoid archetype, where „psychic“ and „material“ are no longer viable as attributes or where the category of opposites becomes obsolete** and every occurrence can only be asymmetrical; the reason for this is that an occurrence can only be the one or the other when it proceeds from an indistinguishable One.

Boe: Laozi42 – 1,2,3 – Tertium semper datur: an asymmetrical Third

Thus in dialogue with Pauli, **Jung moves beyond the bounds of symmetry, placing the deepest levels of psychological development as well as synchronicity in the realm of the asymmetric**, coming through small seemingly insignificant breaks in symmetry. The furthest reaches of Jung's psychology can only be assessed through **breaking symmetry, which we have seen is a way of complexification**.

60 Jung's four **quaternios**

62 Although from a contemporary vantage point Jung's entire opus has an emergentist feeling to it, he builds his theories without the benefit of the scientific findings on complexity which were not yet available during his lifetime. **At times his view seemed too constrained by the longing for order that may have caused him to over-symmetrize his model**.

Boe: longing for order – language; Beobachtung Erster Ordnung
over-symmetrize – static models/dynamic models; systemstheory

Symmetry breaking and synchronicity

For simple **linear systems** (which can be complicated but are not complex in the sense of emergent properties) the whole is equal to the sum of its parts. In these, **symmetric features are common and introduce redundancy into the pattern of the whole**, so that one only needs a portion of the information in a linear system to construct the entire thing. The **repetition of a pattern producing order** tends to engender an aesthetic experience of beauty, which can of course have a calming effect on the mind, inducing a feeling of tranquillity in resonance with the harmony of the symmetric form. The building up of symmetric forms is also crucial in early psychological development, hence the value of imitative learning (symmetrically internalising the other, a route of empathy).

64 However, in the **generation of complex systems reduction in symmetry is integral to emergence**. In a truly complex system no single aspect as adequate information to **represent the whole**, nor can any single part statistically **predict the dynamic behaviour of the system**, especially when it self-organises.

Symmetry is broken in what are called **phase transitions**, rapid, **abrupt reorganisations of a dynamic system that radically restructure the system, allowing new forms to emerge**. Bearing the psychological equivalent of a phase transition and reorganisation can be highly stressful for an individual even if ultimately positive in transformative effect.

Boe: creativity = phase transition

In the past half-century spontaneous symmetry breaking has become recognised, not just as a disappointment of physicists seeking perfection, but also as a key to the existence of our cosmos. There are several extremely important **spontaneous breaks in symmetry** in the natural history of the world. The first has to do with the current model of the origins of our universe, the **Big Bang**... The second relevant cosmic symmetry break, at least for life on Earth, comes from the chemical history of our planet. Many **biomolecules**, the chemicals of life, have a distinct asymmetry about them (handedness).

Boe: vgl. Lloyd - information

65 Recall Jung's letter to Erich Neumann, quoted in chapter 1, in which he suggested a **psychoid aspect to synthesis that seem to transcend ordinary natural laws during a period before consciousness at emerged**. The original synthesis and selection of chiral molecules will certainly be a candidate for one of those **synchronistic moments that would lie at the root of all living matter**.

Boe: matter and living matter, and purpose and meaning!!

66 The early mother-infant dyad often sustains a feeling of **symmetric wholeness** (oceanic states) that helps serve to contain the infant... However, **for the child to develop a separate mind, a series of breaks in symmetry occur**, around what we commonly think of as developmental milestones, which can be understood as **phase transitions**, most likely with concomitant psychological and neurophysical reorganisation, such as the smile response. Classically, it has been the role of the father to **function as an asymmetric third**, to use Jung's terminology, to facilitate phase transitions in a manner that is optimally disruptive rather than excessively so - to **generate increased order through self organisation rather than dissolution into chaos**. Obtaining the meaning from the psychoid dimension of such a process is where **the symmetry breaking aspect of synchronicity** enters.

67 **Events** that are unique, not reproducible, and have an idiosyncratic quality are subjective, and **subjectivity thus has an asymmetric dimension**. Synchronicity is the study of such events where the **meaningful experience of the person the event is happening to** can be understood by others, as in **the metaphoric resonance of the coincidence**, but **the unique quality of the experience cannot be wholly communicated**.

More deeply, grappling with the **significance** of the synchronistic experience will at some point require differentiation, a breaking of the symmetry between inner and outer aspects of the event. The initial felt symmetry is a powerful inducement to attend to such events, but **psychological development requires that we suffer awareness of the asymmetry** - this I believe was what Jung was trying to communicate to Pauli about his „mirror complex“.

Boe: Varela – life is sense-making

Joseph Cambray
Synchronicity

Nature and Psyche in an Interconnected Universe
TexasA&M University Press 2009

68 Empathy

Previously I have published a potential classification of synchronistic events occurring in psychotherapy based on a model from studies in **self-organising criticality**. In that paper I suggested that an examination of the intensities of synchronicities plotted against their frequencies could be explored. If a **power law relationship** between these variables were obtained this would then indicate an underlying commonality of processes across a range of synchronicities. These events can also be described in terms of **emergent properties of field phenomena**. As a tool to help identify emergent events in an interactive field I will look at one form of **resonant phenomena**. In general, resonance indicates some form of attunement among elements or agents in a field; such interactions in turn can lead to emergent properties.

70 The notion of a **resonant, mirroring capacity of mind** that can bring knowledge of our environment as a particular parallel in western psychology that can be explored through the **concept of empathy**.

Empathy is not an inference from analogy but a unique form of knowledge (Theodor Lipps).

71 Neuroscience

In the last two decades the increasing sophistication of technical instrumentation and scientific formulations has opened new frontiers in exploring the neurobiological foundations of the mind. For most contemporary scientists and philosophers the phenomena of mind are neither reducible to neural processes not wholly separate from somatic experience, but the mind is set to emerge from the ease in the sense of emergence. The mind is conceptualised as being embedded in the body, and terms like embodied cognition are used to express the intimate and extensive involvement and interdependency of mental processes with those of somatic ones.

72 Aspects of mind-body resonance

73 Humans tend to spontaneously mimic and synchronise with the emotional behaviour of others, often without consciously registering the phenomena. Evidence supports the role of imitation and mirroring of others as generating the psychosomatic conditions enhancing feelings of intimacy. Such observations have been put to use in many areas of modern life. **These studies have led to a view of the Self as inherently social and based in intersubjective experience.**

76 mirror neurons

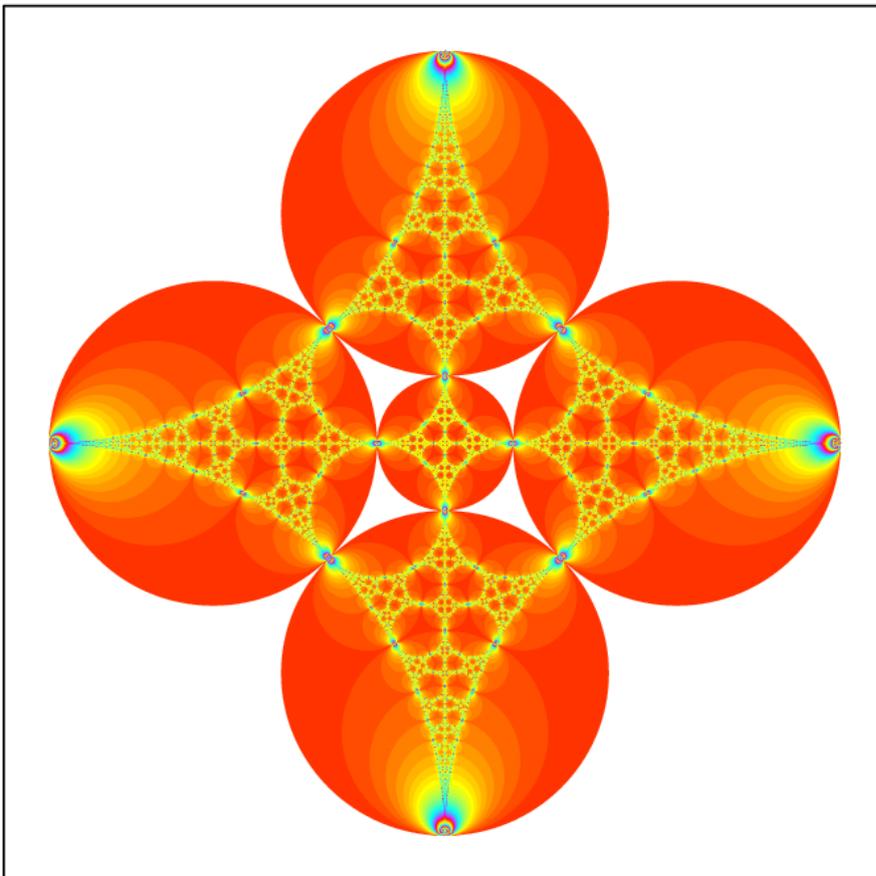
There is growing evidence that mirroring processes are involved across the spectrum of emotional resonances, feeling responses, and cognitive reflections on others' actions, as well as being a fundamental part of the origins and development of language.

77 Iacoboni: a wonderful simple neural distinction between self and other.

Iacoboni sees **mirror neurons as being formed and shaped by social interactions**, starting with the mother-infant dyad, and being essential to self recognition. Further, he states: clearly, **mirror neurons learn to predict the actions of other people**. This ability was not present at birth, the mirror neurons system may be shaped by experience. **Culture and biology are finding a meeting point in these systems; they form one of the links between Psyche and Soma, and may be a means of exploring the psychoid realm.**

The discovery of mirror neurons has generated intense multidisciplinary interest in intersubjective forms of communication, beginning with imitation and mimicry and progressing to simulating the mind of others as a way of grasping their intentions.

80 In terms of symmetry and psychological systems, empathy permits temporary symmetrizing, linking Self and Other in a unifying field. For useful psychological reflection to emerge from this state of immersion breaking of the transitory symmetrisation will need to occur eventually. This can then lead to a full emergence of empathic understanding. Empathy then is a connecting principle that links us to our world in ways that feel deeply meaningful, especially when we can step back and reflect on our experience (that is, upon breaking the symmetry). The causes that activate the empathic systems are often unconscious with the psychoid quality, that is, beyond our capacity for awareness and can feel as an adcausal coincidence. There can be **a synchronistic field dimension** to our empathic experiences.



81 An ancient, profoundly philosophical network image with multiple levels of nested mirroring is „Indra’s Net“ (Yin to lo kang) from Indian and Chinese Buddhas philosophy; it is used in the Hua-yen school - the primary sutra of this school, the Flower Garland Sutra, is regarded in the Maya are not tradition as the Buddha’s first sermon. This sutra emphasises interdependence; it is a radical field model. Analogues from fractal geometry had been recognised recently by Western mathematicians. The convergence of introverted Eastern meditative practices with extrovert it Western science has produced resonant images of „objective truth“; an example is the image on the cover of this book, The Glowing Limit - the glowing yellow lacework manifests entirely of its own accord out of the initial arrangement of

just five touching red cycles.

This „mirroring net“ metaphorically offers the viewer the wholly interconnected universe, in which all the parts are interdependent and mutually conditioned. These tenants also form the core of a holistic, emergentist viewpoint, which when applied to human relationships is the paradigms gaining ascendancy in the analytic world. As previously mentioned, Jung presaged this network model in various remarks about the interwovenness of the archetypes in the psyche, the deepest source of human patterns and hence, implicit, thus also all wisdom.

82 The third patriarch of Hua-yen, Fa Tsang, explicating this net of interrelatedness saw it as especially true of the „unending relationships between wisdom and compassion.

85 Mirror neurons operate as field resonators, contributing to the neural apparatus that allows detection of the visit dudes of the intersubjective, analytic „third“ through empathic channels...The emergence of the third in the field was facilitated by the unconscious effective attunement or mirroring that when processed with conscious empathy supported the intensifying constellation and subsequent use of the „wounded healer“ pattern in the field. Thus empathy when combined with the processing of counter transference reactions is not constrained Solly to be an introspective examination through brief trial identification of the mental worlds of others but actually a way of experiencing the resident field itself, like the emerging pattern in the „Glowing limit“; and more generally a way of engaging in and with the world.