

A PROJECTOR THEORY FOR UFO'S ACCORDING TO THE
UNIFIED FIELD THEORY BY BURKHARD HEIM

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Abstract

This paper discusses an ansatz of an unified theory of unidentifiable light appearances (UFO's) based on the new 6-dimensional unified quantum-geometrodynamics by Burkhard Heim. Some introductory remarks concerning Heim's theory will be made: 6-dimensionality, ~~differences~~ geometry (selectors instead of tensors), poly-geometry instead of only one non-Hermitean fundamental tensor (in Einsteinian unified field theory). It is shown how the field equations (world selector equation), which were describable by eigenvalue equations because of the discontinuous geometrical quantity will reduce to those of the General Relativity by setting the area quanta (metrons) to zero. The interpretation of possible geometrical (hermetry) forms yields four different geometrical structures, which were physically interpretable as gravitons, photons, neutrocorpuscula and as charged corpuscula.

Spaced curvatures in Heim's theory were replaced by metronic condensations in sub-spaces. The transcoordinates (x_5, x_6) condense in every interpretable geometrical form. These gravitons or activity streams evaluate quality states. Since the Aristotelian logic (and mathematics) is only applicable for quantities, Heim developed a general multi-dimensional logic, with which it is possible to describe quality states within a formal system (syntrometry). Heim's syntrometry is ~~written~~ ^{described} in three books (1980a, 1980b, 1984) in German on about 800 pages, therefore only some hints can be given on the networks of conceptual systems to understand the meaning of "informational distances", and metroplex-totalities which are the quantum steps in (x_5, x_6) -activity-streams.

These activities can change the probability state of a material system the more the metroplex totality distance is from where they come. Gravitational waves, if they could generate artificially, ~~are~~ ^{would be} bearer of information patterns. These information patterns in high (x_5, x_6) -regions correspond with

the same patterns which come from distant locations, bridging space distances by making their entelechial structures equal. As in special relativity a length dimension of an object will be exchanged by the time dimension, if that object moves relatively with light velocity, in Heim's theory the three spatially dimensions of an object would reduce to zero, if his extensions in x_5 and x_6 will be changed in their evaluation in time three gravitational waves under the condition $\dot{x}_5 + \dot{x}_6 = \frac{7}{9} c^2$. That object - ~~invisible~~ in space - will be an "idea" in regions of high metroplex totalities and will follow patterns, which were modulated up these activity streams. If these patterns adapt the same patterns from very far distant locations, the object-idea can bridge space by climbing up via activity streams either to the origin in space or to the distant location. This displacement via x_5, x_6 is a possible explanation for observations of apports in parapsychology and for the most of the UFO observations. This explanation encourages the thought of interstellar location changes by a future "metatechnology" and for the probability that UFO's may be projectors from very distant sun systems.

KEY WORDS

General Relativity
 Unified Quantum Field Theory by B. Heim
 (metrons, metronic differentiation, selectors, correlators, space compressor)
 6 world dimensions
 (hermetry forms, gravitational waves, activity streams, world selector)
 mass spectrum of elementary particles
 syntrometry (general multivalued logic)
 formal description of qualities
 metroplex structures
 (metrophors, syntrices, metroplex totalities, syntroclines, syntropodes, information distance)
 projector theory
 superluminal velocity of gravitational waves
 Heim-Lorentz-transformation
 space flight by apportation
 ETH

INTRODUCTION

1. Why UFOs cannot be space vehicles

Among experts it is generally assumed that UFOs are not space vehicles, although perhaps an alien intelligence lies behind these appearances (Jacobs 1976¹³), Guérin 1979⁶), Hynek 1978¹²). This statement may appear self-contradictory, but what is meant is that we do not know how these objects get here.

In founding the ETH it was put forward that highly technical civilizations in neighboring star systems could have discovered of flying through space at speeds approaching that of light, in which case the relativistic time dilation in the system of the moving spaceship should reduce the life processes of the occupants to such an extent that a journey over great distances could be completed in a relatively short time as far as the travelers are concerned.

Even if one wanted to interpret time dilation in this Einsteinian sense, the fact would remain that a spaceship would have to be underway for several light years to reach the nearest neighboring star system - provided it flew with an "absolute propulsion" that would make speeds near to that of light possible.

Sagan (1978)¹⁸) feels that the argument the earth would be of special interest to higher civilizations contradicts the assumption that there are many civilizations - that civilizations are, in other words, commonplace. If we weren't commonplace, then there wouldn't be enough civilizations advanced enough to even find us, let alone visit us frequently.

The question of prehistoric spaceships is unscientific because it isn't "falsifiable", which is a requirement for scientific method (Popper 1959¹⁷)). No significant artifacts were ever found and possible oral reports of landings, in the form of myths, are interpretable in other ways.

We can still support Sagan in his argumentation against the possibility that the earth is being visited by spaceships through the fact that interstellar dust makes speeds in excess of 10,000 kms impossible for space vehicles, since at such speeds the friction heating due to interstellar dust and gas clouds can no longer be disregarded and would lead to the vehicles' burning up.

In our opinion, guaranteed first-hand accounts are to be placed above "explanation theories", in which case the naive ETH becomes, indeed, increasingly more difficult to advocate. As calculations show, direct interstellar space journeys with recoil propulsion systems (e.g. photon rockets) would be impracticable because of energy requirements (Mead 1972¹⁵)).

Among 60,000 collected UFO reports, there are only roughly a few dozen reports in which the same object has operated near the ground longer than one day (the Rev. Gill-Papua New Guinea case, for example). Were these objects spacecraft -- as we imagine them -- which had "suffered through" an endless journey through space to finally reach us, one would assume that their missions to be carried out here -- which were well worth the price of such a journey -- would require a somewhat longer stay.

Obviously the ETH can easily be refuted when its orientation is toward the conventional concept of the space-time continuum.

2. The need for a Unified Theory and its implications

Were we to achieve the certainty, based on a clear proof (artifacts, crashed objects, etc), that UFOs really come from planets in other star systems -- for which there aren't yet any such proofs --, it would be a sign that our conceptions of the universe are still very incomplete.

On the other hand, we know that our knowledge of many other areas is also scant and full of gaps. At the present time we have no satisfactory answers to important questions regarding

- the spectrum of the elementary particle masses
- the origin of the universe from a singularity
- the necessity of the values of natural physical constants
- the self-organization of matter in evolutionary processes
- the origin and "structure" of the mind
- the autonomy of mental structures -- viz. their abode after bodily disintegration
- the interaction mechanisms between body and psyche in medicine and parapsychology

just to name a few of the most important open questions. Without a unified description of nature these individual questions cannot be answered, as we shall see.

The right, i.e., complete and consistent, unified quantum field theory of matter and gravitation would have to be so comprehensive that various theoretical and practical discoveries could be expected in all those areas that at present are only incompletely or not at all understood. It would not be exaggerated to speak of a new era in our understanding of nature and to differentiate this epoch from the presentday "pre-unified physics" by the designation "unified physics". In my opinion the solution of the UFO-problem will be found when the correct unified field theory is found. This will be obvious, when we discuss the "projector theory".

Currently, the projector hypothesis still has a strongly speculative character. Such deliberations must, however, be undertaken if we do not want to despair in the face of unbelievable and "physically impossible" UFO manifestations -- unless one were at the outset to agree with the opinion of the skeptics, who maintain that there is no UFO phenomenon that it is merely unleashed on the world by liars and dolts, and that the study of this "nonsense" will contribute nothing to the enlargement of scientific knowledge.

Pierre Guérin holds the view (1979, p.16)⁶) that the bastions of the oppositional forces -- independently of UFO research -- will break down first when fundamentally new developments in theoretical physics deliver a conceptual framework within which the strange effects and operational methods of these "machines" -- which still appear "magical" to us -- can be understood by reduction to pure physics, thus facilitating a rational integration of the UFO phenomenon into the general edifice of our science.

The author is convinced that Heim's theory could bring about this "magical physics."

Assuming that unidentifiable aerial phenomena are artificial objects-- for which all indications speak -- the question of their propulsion arises.

In order to be able to seriously consider the realization of field propulsion on the basis of our current state of knowledge, it is necessary to investigate the various interaction forces. The source for all interactions is the elementary particles. Therefore a knowledge of the structures of the elementary particles and how they change into one another is a prerequisite for an understanding of interaction forces and how they are transformed into one another (Brand 1983²⁾).

3. The Unified Field Theory by Burkhard Heim

The implications of Heim's theory (1977⁷⁾, 1980a⁹, 1984¹¹⁾), contain the mass spectrum and characteristics of all the elementary particles. Heim has demonstrated, that a unified description of the elementary particles in the 4-dimensional space-time continuum alone will not be possible, and that the existence of additional x_5 and x_6 world coordinates requires working in a new, more general, formal logic. Only then will one be able to see that the foundation for a preliminary model of a projector theory is adequately established.

The importance of a higher-dimensional description of the world does not lie solely in the possibilities it offers for the unification of physical interactions, but in the interpretation of the additional dimensions as well.

Recently, a six-dimensional theory was developed by a group of Oxford theoreticians. Just as with Heim, in R. Penrose's twistor theory (1975¹⁶⁾) the three real dimensions are coupled with three imaginary timelike dimensions to build a world continuum. An attempt is made to unite the event spaces or continua described by contradictory theories -- quantum theory and relativity theory -- by means of a so-called twistor space.

In twistor theory, the basic geometrical elements are not viewed as being fundamental. Points do not exist. Instead, there exist only the world lines and directions of particles and spin nets, which are determined by their interactions. The usual geometrical concept of continuity is eliminated and replaced by combinatorial processes and numbers, which won't be further entered into here.

But how do the twistor theorists interpret the significance of imaginary world directions? Some authors (Demers 1975⁵⁾, Kowalczyński 1984¹⁴⁾) hold that time, like space, can be conceived of as being three-dimensional. Each time dimension is coupled to one of the three spatial dimensions, i.e., the time

coordinates $x_4 = ict_x$, $x_5 = ict_y$ and $x_6 = ict_z$, with $i = \sqrt{-1}$, can be formed. If this were so, then six-dimensional calculations of the paths of astronomical objects should not lead to inconsistencies with observation. But they do lead to inconsistencies (Cole 1978³).

Heim gives the fifth world dimension a fully nonphysical significance: it contains different values of organization (i.e., negative entropy) states, while x_6 measures the "directions" this organization takes (i.e., probability which measures ambiguity)(Heim⁷).

It now becomes understandable why the equations of motion must lead to false results in $R_6 \equiv (x_1, x_2, x_3, x_4, x_5, x_6)$ they hold for mass points, and x_5 and x_6 cannot act to effect an organization of such "structural singularities". And mass points cannot "travel" through these dimensions as a short cut between three-dimensional locations. Therefore x_5 and x_6 don't enter the equations.

In Heim's theory, as in twistor theory, an event space is postulated that combines the properties of a geometric area with those of a Hilbert space. In Heim's theory there are likewise no points. Contrary to twistor theory, which works with differentiable fiber bundles, Heim modifies differential geometry into a discrete geometry in which the square of Planck's length L defines an ultimate unit $\tau \approx L^2 = \frac{h\chi}{c^3}$ (h = action quantum, χ = gravitational constant, c = light velocity) the so-called metron, thus replacing the concept of points. The place of differential geometry is taken by metron (area) difference calculations, i.e., the differentiation $\frac{d\varphi}{dx}$ in differential geometry will be replaced by metronic differentiation $\delta \varphi(n) = \varphi(n) - \varphi(n-1)$. Each one of the metrons is bearer of an elementary spin. The domain of the observable world will be reached first for a very great number of metrons.

Like Einstein, Heim also uses nonsymmetrical complexes, i.e., non-Hermitian fundamental tensors of Cartan geometry. Contrary to Einstein, who assumed there was only a single absolute velocity in the world, the velocity of light c , which accounts for space-time, Heim allows this proposition to hold only for electromagnetic interaction processes. According to Heim, there is still an additional absolute velocity: gravitational interactions are propagated with the velocity $\omega = \frac{4}{3} c$.

A six-dimensional description of the world is arrived at with the requirement that the laws of nature not only remain unchanged in moving frames of reference where the velocity of light represents the upper limit for motion (Lorentz invariance), but in addition to this also remain unchanged in those frames of reference where ω is a further absolute velocity.

Heim also, like Einstein, interprets the metric fundamental tensor of Cartan geometry as interaction potentials but let their physical interpretation open. Einstein identified the symmetrical fundamental tensor g_{ik} ($i, k = 1, \dots, 4$) with the gravitational potential and the nonsymmetrical $\hat{g}_{ik}$ with electromagnetic potentials:

$$\bar{g}_{ik} = g_{ik} + \hat{g}_{ik} = \begin{pmatrix} g_{11} & 0 & 0 & 0 \\ 0 & g_{22} & 0 & 0 \\ 0 & 0 & g_{33} & 0 \\ 0 & 0 & 0 & g_{44} \end{pmatrix} + \begin{pmatrix} 0 & g_{12} & -g_{13} & -g_{14} \\ -g_{21} & 0 & g_{23} & -g_{24} \\ g_{31} & -g_{32} & 0 & -g_{34} \\ -g_{41} & g_{42} & g_{43} & 0 \end{pmatrix}$$

In Heim's theory, instead, the world is not only described by a single geometry (like $\bar{g}_{ik}$) but by a metric fundamental selector ($\approx$ tensor) γ_{ik} build up from $\mu = 3$ mutually interacting partial structures $\bar{g}_{ik}^{(\mu)}$ ($i, k = 1, \dots, 6$ and $\mu = 1, 2, 3$):

$$\gamma_{ik}^{(\mu\nu)} = \gamma_{ik}^{(\mu\nu)} + \hat{\gamma}_{ik}^{(\mu\nu)} = \sum_{m=1}^6 \bar{g}_{im}^{(\mu)} \bar{g}_{mk}^{(\nu)}, \quad (1 = \mu, \nu = 3)$$

Each of the metric fundamental tensors, or "correlators", each of which is made up of two out of three possible partial structures (geometrical base structures) four kinds of correlation tensors $\gamma_{ik}(x)$ ($x = a, b, c, d$) are basically possible. This is because there are four non-interchangeable world coordinates in the six-dimensional world R_6 : the real linear dimensions $R_3 = (x_1, x_2, x_3)$ which are mutually interchangeable with each other; the time dimension x_4 ; x_5 ; x_6 .

The fundamental tensor of the multi-metric is only a Hermitean in R_6 with the signature $(+++---)$ but his part, which corresponds to R_4 , is not-Hermitean.

$$\hat{\gamma}_a = \begin{pmatrix} \bar{\gamma}(11) & \bar{g}(1) & \bar{g}(1) \\ \bar{g}(1) & E & E \\ \bar{g}(1) & E & E \end{pmatrix}; \quad \hat{\gamma}_b = \begin{pmatrix} \bar{\gamma}(11) & \bar{\gamma}(12) & \bar{g}(1) \\ \bar{\gamma}(21) & \bar{\gamma}(22) & \bar{g}(2) \\ \bar{g}(1) & \bar{g}(2) & E \end{pmatrix}$$

$$\hat{\gamma}_c = \begin{pmatrix} \bar{\gamma}(11) & \bar{g}(1) & \bar{\gamma}(13) \\ \bar{g}(1) & E & \bar{g}(3) \\ \bar{\gamma}(31) & \bar{g}(3) & \bar{\gamma}(33) \end{pmatrix}; \quad \hat{\gamma}_d = (\gamma_{(\mu\nu)});$$

$$\mu, \nu = 1, 2, 3; \quad E = \begin{pmatrix} 1 & 1 & 0 \\ 0 & -1 & -1 \end{pmatrix}$$

with

$$\begin{aligned} \bar{g}(1) &= \bar{g}_{ik}^{(1)} & \text{with } \mu \equiv (1) &\equiv (x_5, x_6) \\ \bar{g}(2) &= \bar{g}_{ik}^{(2)} & \text{with } \mu \equiv (2) &\equiv (x_4) \\ \bar{g}(3) &= \bar{g}_{ik}^{(3)} & \text{with } \mu \equiv (3) &\equiv (x_1, x_2, x_3) \equiv R_3 \end{aligned}$$

In microregions of R_6 , correlating tensors (correlators) δ_x can effect deformations in the metronic grid (in the language of differential geometry: curvatures of space). The deformations work to press the grid of the Cartesian reference system, which corresponds to a vacuum, together.

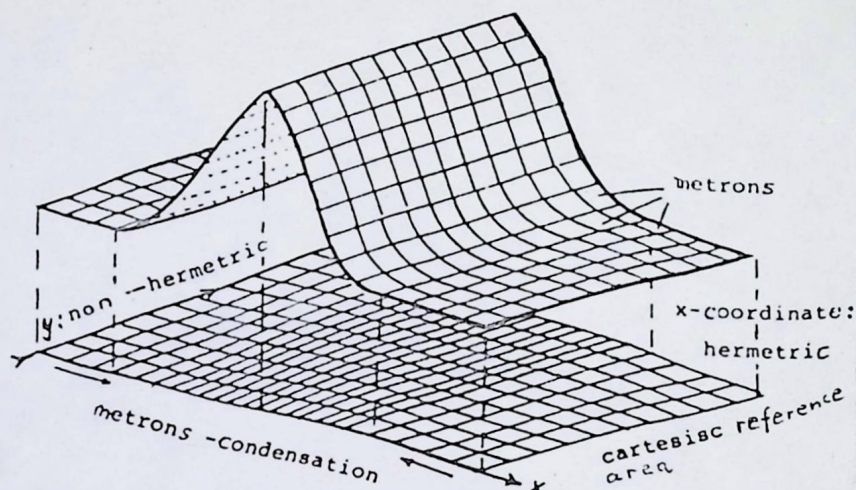


Figure 1 Projection of metrons of a curved area onto a Cartesian reference area

Heim speaks therefore of the "space compressor" ρ^i_{klm} , which takes the place of the curvature tensor R^i_{klm} of general relativity (GRT). ρ^i_{klm} causes or determines structural condensation levels in the six-dimensional space in which Heim is working.

These structure condensations follow from the hermeneutics (interpretation) of possible geometry forms and are therefore called "hermetry" forms:

$$\begin{aligned}
 a &\equiv (x_5, x_6) && , \text{ i.e., structure condensation only in } x_5 \text{ and } x_6 \text{ in } \delta_a \\
 b &\equiv (x_4, x_5, x_6) \\
 c &\equiv (R_3, x_5, x_6) && \text{ ect.} \\
 d &\equiv (R_3, x_4, x_5, x_6) && \text{ where } R_3 \equiv (x_1, x_2, x_3)
 \end{aligned}$$

The condensation levels of hermetry form a which are not reproduced in this form in antihermetrical subspaces are not interpretable under established physical categories. In order to do this, Heim specially developed a general formal-logical method to describe qualities as well as quantities.

In the case of interaction of the pure imaginary hermetry form a with structural condensations in R_4 there is no exchange of energies but an exchange of "informations" or evaluations of the organization states, i.e. a shift of the probabilities of the microstates.

Since the coordinates x_5 and x_6 in the structures b, c and d are likewise hermetric, Heim concludes that a reproduction process in the form of gravitations of static gravitational fields of the material field quanta takes place, so that fundamentally there can be no gravitation-free matter or gravitational shielding.

The same computations for the pure imaginary hermetry form b yield to the result that all world-lines of it lie in the conical world asymptote space and satisfy a complex harmonic vibration law. Such world-lines are geodesic null-lines in R_4 which intersect the antihermetrical R_3 . Hermetry form b proves this to be the spectrum of possible photons, and approximately to be the entirety of classical electromagnetic waves.

The condensation levels of gravitons reproducible in R_4 should transmute into photons and vice versa. The transition ⁴ between both structural forms is solely dependent on the temporal behavior of time (x_4), i.e., when in the hermetry form b the x_4 condensation would disappear the hermetry form a would appear.

The complex condensations c and d show properties like those possessed by ponderable material field quanta (i.e., they can never reach the speed of light), so that the eigenvalues λ_{kl} describe quantum levels of ponderable matter in the case of complex condensations.

Hermetry form c describes neutro-corpuscles whose interaction can consist only of a gravitational exchange and a proximity action exchange. The hermetrical units during condensation are time functions, such that the quantum numbers n grow with time. Only in a given time interval does n describe a stable corpuscle, which afterward can change into other ones.

The total R_6 -hermetry d resembles for the most part the solution formalismus of c-hermetry, except that the time coordinate x_4 must be taken into consideration. From the d-structure, a structure arises which satisfies an oscillation law and is propagated in R_3 at light velocity. d can be conceived of as a consequence of the time dimension involved in the condensation process, is coupled to an electromagnetic (photon) field; i.e., the elementary structures are electrically charged corpuscles

The $\bar{g}_x$ (with $x=a,b,c,d$) show, that a condensation of a hermetry form $R_4 \equiv (x_1, x_2, x_3, x_4)$, i.e., the space-time continuum, can never exist alone since x_5 and x_6 always appear simultaneously.

Were there in each case only a hermetry form x_5 or x_6 , the eigenvalues would yield $\lambda_m = 0$. This means there are no condensation levels in x_5 or x_6 , and R_3 or x_4 would likewise be antihermetric, i.e., $g_{(\mu\nu)} \cdot \gamma_{(\mu\nu)} = \delta_{\mu\nu} (=1 \text{ if } \mu=\nu, \text{ otherwise } =0)$.

Four hermetry forms, remain as physical solution manifolds; namely, to condensations a to d. The interpretation of the solution of the hermetry problem leads to the interesting conclusion that the existence of the three imaginary world coordinates first causes the hermetrical condensations. In a three-dimensional world build up of real world coordinates there could be no metrical condensation levels as quantum levels in the R_3 projection.

In the approximation $n(\tau) \rightarrow \infty$ there exists an "infinitesimal range" in which the metron number are so large that metrons can be ignored, but quantum levels exist. In this case a simple differential equation can be given for the solution of hermetry form a for $\varphi(\mu\nu) = \varphi(x_5, x_6) = \varphi(f)$:

$$\frac{d\varphi}{df} + \varphi^2 = -\lambda\varphi \quad \text{with} \quad \frac{d\varphi}{df} = \frac{\partial\varphi}{\partial x_5} + \frac{\partial\varphi}{\partial x_6}$$

A physical interpretation is possible only for the case that the structure a effects the antihermetrical (undeformed) R_4 , i.e., when f is in some form dependent upon the R_4 -coordinates, since the function φ is hermitian φ^* :

$$\varphi = \left\{ \begin{matrix} 5 \\ 5 \end{matrix} \begin{matrix} 6 \\ 6 \end{matrix} \right\} + \left\{ \begin{matrix} 6 \\ 5 \end{matrix} \begin{matrix} 6 \\ 6 \end{matrix} \right\} = \varphi^*,$$

and hermetry form a is not defined in R_4 .

It turns out that the latent processes first take effect in R_4 when events are described through the field function $\psi = 2 \, d\varphi/df$ which are metrically constituted in such a way that the metric of the pseudo-Euclidean R_4 : dr^2 is equivalent to $df^2 = dx_5^2 + dx_6^2$, i.e., when the world-line of ψ is a geodesic null line

$$ds^2 = dr^2 + df^2 = 0 \quad (df = i \, dr)$$

In this case a space-time equation which can be interpreted is yielded. ψ appears in R_4 in such a way that a propagation velocity $\omega \neq c$ occurs which also has the character of discrete quantum levels and therefore must be considered a graviton.

which can exchange photons during interactions. In the formula for the mass spectrum of the d-forms, an ambiguous function crop up in the space condensations, which can be conceived of as sources and depressions, or an electrical charge field.

The structures of hermetry forms c and d alone are neither elementary particles nor quarks, but only subspaces in which those structures of masses can appear. A single condensation level cannot exist by itself: for this, reciprocal relationships of different exchange processes (of at least two such condensation levels) in the form of "cyclical fluxes" are required, i.e., the solution of all partial structures c and d produces structural maxima (metrical deviations from the pseudo-Euclidean metric $\delta_{\mu\nu}$) which in every case exists as external coupling maxima of two partial structures in temporally periodic exchange processes. From these cyclical elements Heim developed an "algebra of metrical structure fluxes".

There are measures of structurization for which preservation laws be valid which cause the timely stability of periodic structure fluctuations what appear as subconstituents of elementary particles.

Inertia and gravitation are two different phenomena in Heim's theory. Gravitation is a field structure of the metronic R_6 . But inertia as a resistance against an imaginary tilting in R_4 fully conforms to the phenomena of gravitation.

4. Syntrometry -- a general logic for quantities and for qualities

While hermetry forms b, c, and d are objects of physical research, it remains unknown what the (x_5, x_6) structures are. Seen physically, i.e., in terms of length, times, or weights, the interactions in the fifth and sixth dimensions are unmeasurable. Since, however, all material structures "are extended up" into x_5 and x_6 , the qualitative effects of the structures on the organizational states of matter should be observed but not measured.

A "packet" made up of elementary (x_5, x_6) structural levels can be present in various (x_5, x_6) levels. These "entelechiial information entities" can temporally rise up from R_4 into higher levels and vice versa. The transcondensor terms, are called falling or rising activities, i.e., activity streams, by Heim (1978¹⁰).

World coordinate x_5 evaluates the organization states (i.e. "enumerates the qualities") independently actualizing themselves in time. The x_6 -coordinate controls the ambiguous actualization orientation of these x_5 structures in the direction of x_4 . Since the x_5 interactions change organization

states in time, Heim calls $x_5 = \varepsilon$ the entelechi and $x_6 = \eta$ the aeonic world coordinates⁵ (after Hedwig Conrad-Martius 1944⁴⁷)).

When the (x_5, x_6) structures, which according to Heim (1980b¹⁰) are gravitations or free activities $I(x_5, x_6)$, intersect physical space they fall into an entelechial null-level. Here they contain information which generally lies far above that of the zero state. Interaction with matter expresses itself to the effect that, among other things, the activities can change the probability state of the material system. According to the fundamental theorem of information theory the information content of a sign is equivalent to the negative binary logarithm of an event probability. A reorganization corresponds to an information probability when the new organization state is more improbable. These gravitations therefore make their appearance in R_4 as information entities or quanta for specified organization powers or states. They are integral multiples of geodesic null lines of elementary (x_5, x_6) -condensations.

The integral of the probability distribution of the system's microstates, which are changed by $I(x_5, x_6)$, remains in any case one, i.e., very probable states are eliminated and very improbable ones appear with greater frequency. The observable macrostate is organized in correspondence with the new, fully improbable, state.

The usual methods of mathematical physics cannot be used in describing the interrelationships of these ideas and activities, since the informational content of these entelechial entities of powers of inductive organizations is of a relative kind, i.e., in each case it must be declared to which structure the content of such an entity is related. The transitivity axiom of mathematics: if $a < b$ and $b < c$, then $a < c$, is based solely on quantitative numerical evaluations by means of ordering relations, but not upon qualitative evaluations and ideas.

A logical-mathematical methodology had to be developed -- the so-called "syntrometry" -- which permitted a uniform description of both the quantitative and qualitative evaluations of structures, since in this case the physical propositions developed for R_4 were capable of a further formal development for the transregions through information propositions and relative qualities. After carrying out this task Heim was able to uniformly describe such concepts as life, psyche, mind, or consciousness directly as interacting geometrical structures of a six-dimensional world.

In every kind of logic, propositions must be made about how concepts stand in relation to one another. Human logic has two possibilities for propositions: true or false. In multivalued logic, formal propositions are associated with several truth values.

Within a system of logic there are very different aspects, i.e., coordinations of dialectical adjectives to predicates. One must make a distinction between subjective aspect and logical system. The logical system delivers the possible predicates and the linguistically possible dialectical adjectives.

But how must a logic be constituted in which for two arbitrary concepts a connection is always possible, without having to first resort to a "back translation" into a special linguistic reference system? In other words, which system must be connected by predicates such that a structure remains intact?

When one has two concepts a_i and a_k and connects them to one another with a predicate Π_i to make a proposition, it may happen that under the application of another n-valued logic and the connection of both concepts by a suitable proposition of this logic the proposition can be translated, but that the concepts no longer exist, while other suitable concepts associated with the proposition are very likely to crop up. In other words, in this form simple predicate connections a_i, Π_i, a_k are bound to a specific system of logic or to a specific aspect. This means that nothing can really be done with simple predicate connections of concepts.

It looks otherwise when not only individual concepts but whole systems of concepts are connected by predicates. The concepts should be mutually dependent, give rise to one another.

If these reciprocally causative conceptual systems are ordered by degrees of conditionality, then the predicate connections are transposable. One gets networks of conceptual systems.

It is not possible here to go into details of Heim's new logic, with which both quantitative and qualitative states can formally be described.

Some illustrations may give an impression of the new concepts. The matrix scheme which predicates that constitutes the bearer of manner (the apodictical complex) is called the metrophor $\tilde{a} = a_{ik}$. If from the metrophor the concepts of a first conditionality will be taken by connecting for instance each two concepts, which will generate new concepts of a second degree of conditionality, then these will be ordered in a concentric scheme around the metrophor as a "syndrom of first conditionality". By a law of induction f will be generated syndroms 1^{th} , 2^{nd} and n^{th} conditionality.

By analogy to the syllogisms of classical logic Heim defined a syndrom by a system which contains the number of elements m of a metrophor $\tilde{a}$ which are selected by a law of inductions f

$$\langle f, \tilde{a}, m \rangle$$

$\forall$ syndroms will generate a "syntrix" $\tilde{a}$ from the metrophor $\tilde{a}$.

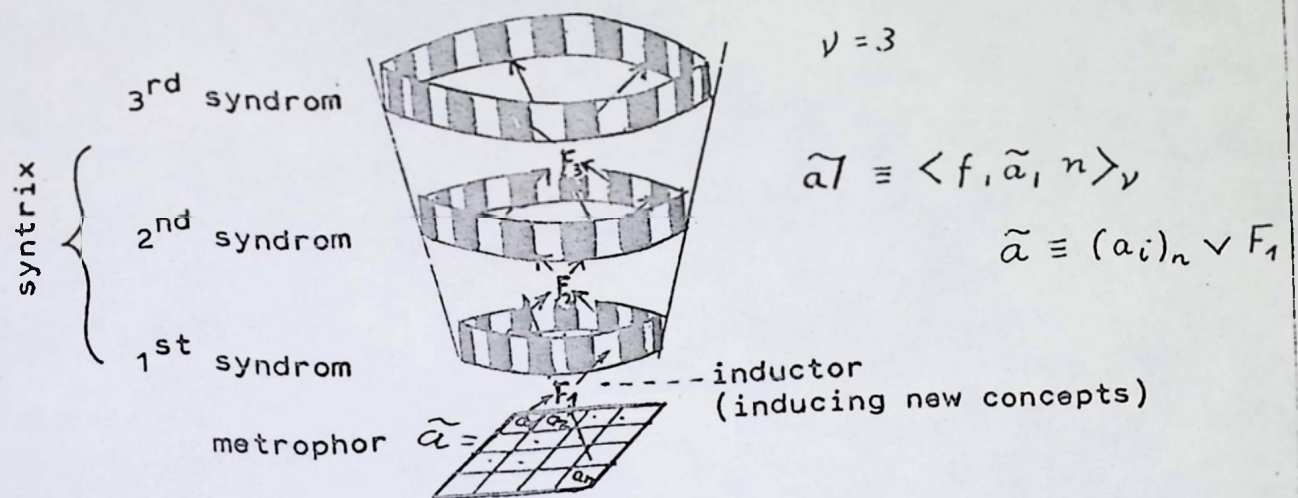


Figure 2 Connections of predicates

All of the syndroms can be taken as metrophors which can be connected by predicates. Four syntrices with syndroms k and l and contents of values k_s, k_m, c_s, c_m build up a "totality" of syntrices of degree $0:ST(0)$.
 n totalities as metrophors generate a metrophorical complex - a "metroplex" $\tilde{a}$, called by Heim.

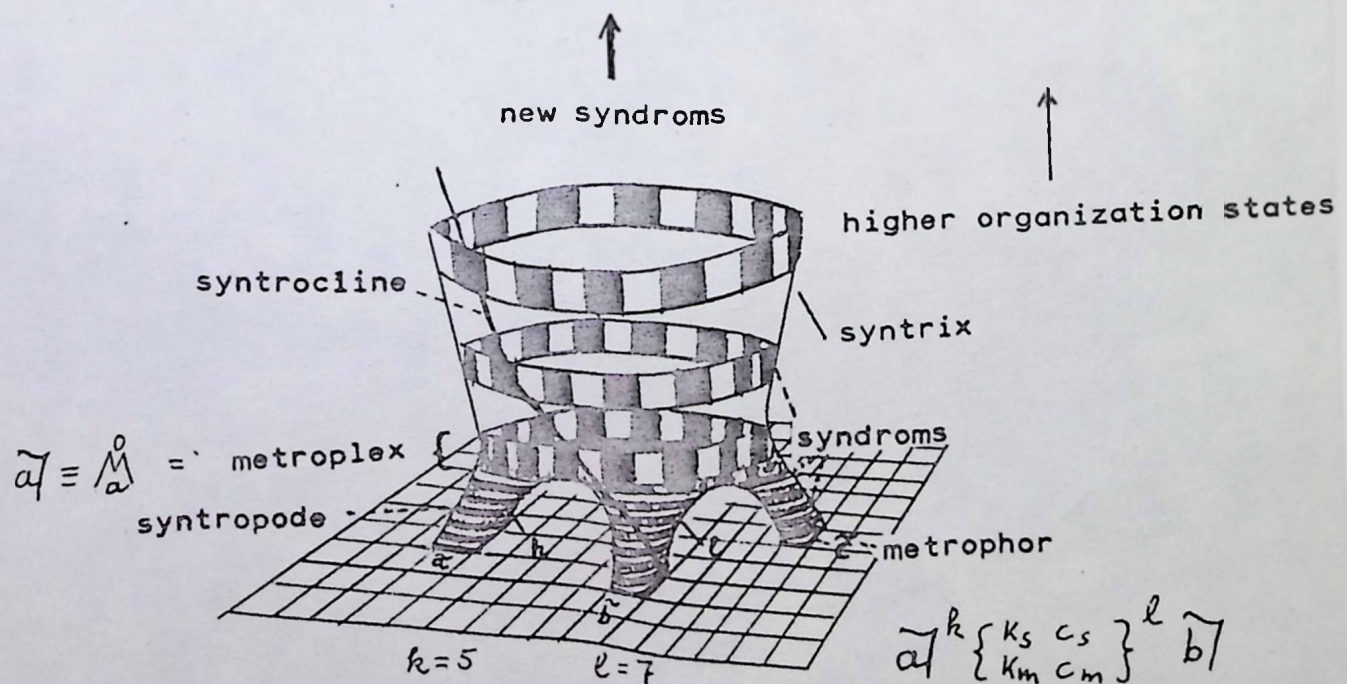


Figure 3 Metroplex concept

Totalities are the quanta steps of the hermetry form a. Lines which connect metrophores of the lowest levels ("fundamental syntropodes") with higher metroplex totalities of metroplex combinations is called a "syntrocline".

Now one can describe distances in the transdimensions of the world. x_5 -distances of metroplexes, i.e.. conceptual patterns, are determined by similarity. A pattern $T(n)$ will be reached from a totality $T(i)$, if the "informational distance" $T(n)-T(i)$ can made to zero by a factor of assimilation ε ($0 \leq \varepsilon \leq 1$). For example: all the spheres - great and small - are connected with the conceptual pattern, the idea "sphere". No time is required to connect all pictures of spheres by syntroclines. The velocity for reducing the x_5 -distance to the idea "cube" onto "sphere" is infinite. The only way to change the x_5 -distance is a change of ε in time, which is guided by the coordinate x_6 .

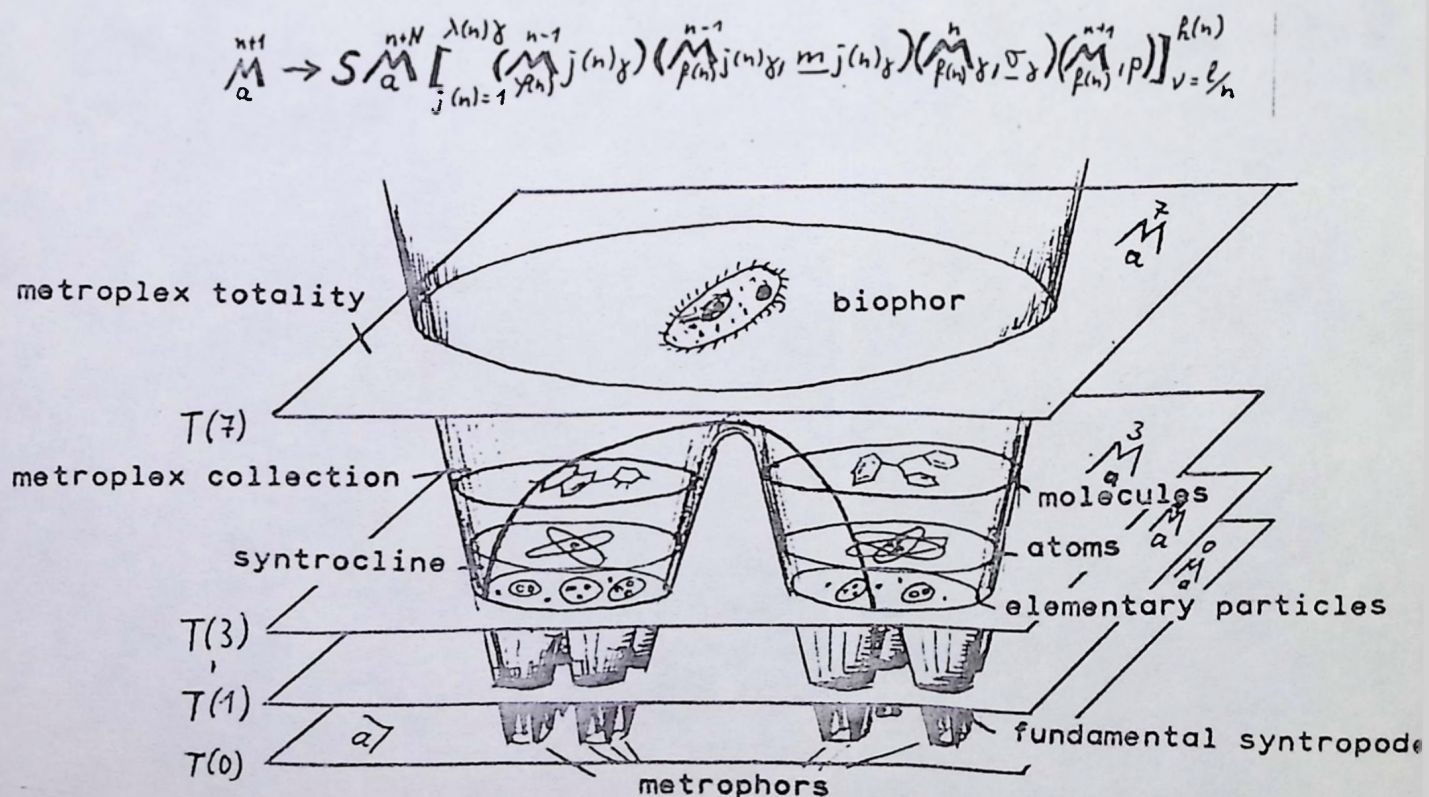


Figure 4 Syntrix totalities and metroplex associations

The dynamic of metroplex structures consists of correspondences of these metroplexes via activity streams (x_5, x_6), whose elements are given by condensor terms of hermetry form a. The transmission of activity streams requires the nearness of corresponding metroplexes. The transmission of activity streams is yet possible if $\varepsilon \lesssim 1$. These information streams go up and down along syntroclines.

Physical, chemical, biological and psychological phenomena are hierarchically structured in metroplexes. Without going into details we give a picture which will show this hierarchy.

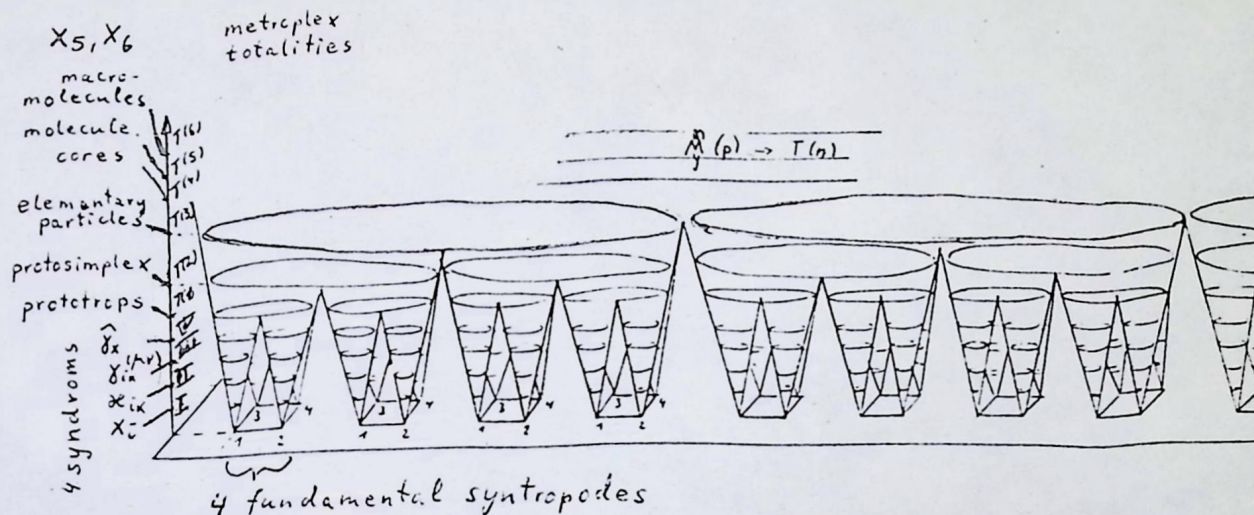


Figure 5 Organization levels

The dynamics in the region of high metroplex totalities has properties like Shaldrakes morphogenetic fields (1981¹⁹). Heim defines higher metroplex totalities as follows (1980b¹⁰):

- T(8) : structures of micells (begin of living structures)
- T(9) : collectives of organelles
- T(10) : elements intracellular action complexes
- T(11) : living cell
- T(12) : poly-cellarly unified structure
- T(13) : structure association (for instance in volvox-protocoens)
- T(14) : organs
- T(15) : organs associations

The totalities T(16)-T(25) define the area of psychological phenomena. Consciousness appears by falling and rising activities currents from metroplex totalities higher than T(25). The guidelines of activities currents normally are the syntroclines which are steering actions within the neuronal brain structure (axons, dendrites etc.). In cases of exceptions these guidelines are not ending in the brain structure but are straying in R_6 . If the activities currents, for instance, are guided in the R_3 (lowest metroplex totality) this informations patterns can displace the probability states for statistical processes in R_3 space. We experience such processes, for instance, as psychocinesis.

To prove Heim's syntrometry it is necessary first to generate gravitational waves. Today it is not yet clear how gravitational waves could be modulated with information patterns.

5. UFO's could be "projectors"

If such information patterns affect the various metroplexes of an object, then the probability distribution of the macrostructure or microstructure will change. The very small energy requires for such an entropy reduction can, for example, be extraced from the surroundings. An advance technology, as to be assumed in the case of UFO's must be capable of controlling such phenomena.

A future "metatechnology" should also possess the ability of transmitting streams of information into the metaregion and synchronistically coupling them to prescribed similarity structures. Then projections would appear at certain predictable locations in the space-time continuum which could assume the most varied forms and trigger a variety of physical and paranormal effects.

Syntropodes are continuations of the metroplex structure of higher organizational states of the metaregion into the physical space in Heim's theory. If such a "syntropode channel" were to transfer organization patterns of the surroundings into which it submerges back to the starting point, one would have an ideal information transfer system.

Some UFO's could be interpreted as the appearance in our world of the projected tip of an informational "tentacle" stretched across the parallel spaces and originating at a position in the cosmos arbitrarily distant from us. As unconventional as such an explanation may appear at first sight, it appears all the more reasonable when we consider the sometimes bizarre shapes and patterns reported occasionally of the UFO's (Brand 1979¹).

On the other hand it must be possible on the basis of such "telecinetic technology" to teleport (or abduct) matter. For this it would be sufficient to suitably influence the corresponding organization variable of the metadimensions. An object under the influence of the "syntropode channel" which changes the probability states of matter would, for example, collapse into itself in a fraction of a second and just as quickly -- materially -- appear at another location.

A bridging space other than via a location change through motion at a velocity $v = (\xi^2 + \eta^2)^{1/2}$ is possible by the expanded 6-dimensional Lorentz transformations. These interstellar location changes have nothing in common with "flights through space".

In four-dimensional space the relative motion of an experimental mass can never reach the speed of light, which is expressed by Lorentz matrix of positive oriented Cartesian coordinates. The elements of the matrix contain relativistic reduction factor $(1-\beta^2)^{1/2}$, where $\beta^2 = v^2/c^2$. In the six-dimensional version of the Lorentz transformations $\beta^2 = v^2/(c^2 + \xi^2 + \eta^2)$

where $\dot{\xi}$ and $\dot{\eta}$ are the time variations in the 5th and 6th world coordinates x_5 and x_6 , respectively.

Were it technically possible to fulfill the condition

$$v^2 = \dot{x}_5^2 + \dot{x}_6^2 = \dot{\xi}^2 + \dot{\eta}^2, \quad \dot{x} = \frac{\partial x}{\partial t}$$

the velocity v could even assume infinitely high values:

$$\begin{aligned} \sqrt{1-\beta^2} &= (1 - v^2/(\dot{\xi}^2 + \dot{\eta}^2 + c^2))^{1/2} \\ &= (1/(1+v^2/c^2))^{1/2} < 1 \end{aligned}$$

Relative to four-dimensional space, the object concerned would disappear at $v^2 = \dot{\xi}^2 + \dot{\eta}^2 = 7c^2/9$, since the denominator in β^2 cannot be greater than $(4c/3)^2$.

Under this condition, the apparatus would exist further as an "idea" in very high metroplex totalities relative to the observer in the reference system with $\dot{\xi} = \dot{\eta} = 0$.

The apparatus disappears because all of his spatial extensions will be zero:

$$\beta^2 \rightarrow 1: \quad x_1 = \frac{x'_1 + \beta x'_4}{\sqrt{1-\beta^2}} = x_2 = \frac{x'_1 + \beta x'_4}{\sqrt{1-\beta^2}} = x_3 = \frac{x'_1 + \beta x'_4}{\sqrt{1-\beta^2}} = 0$$

Durations and material objects would no longer be defined (always relative to an observer comparatively at "rest").

Motion would correspond to a complex rotation in the x_5 and x_6 world dimensions. If the rotation is stopped by the violation of the conditions for v^2 , then the object would theoretically appear again at some arbitrary location "as though out of the void."

UFO-phenomena can be either apparatus which can travel "faster than light" via syntopode channels according to the Heim-Lorentz-transformation in six-dimensional space or stationary projector devices or rather space ships with projecting apparatus on board.

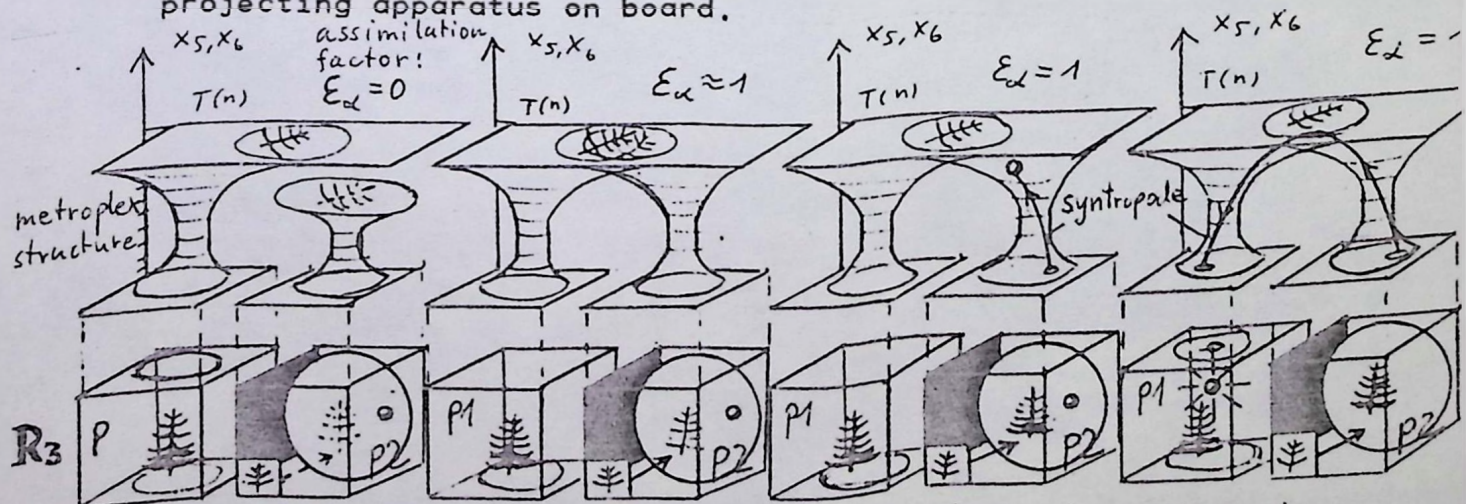


Figure 6 Projector in P2 projects an object via syntropode channel to P1 under the condition $E_\alpha = 1$.

Thus can the often observed phantoms, the melting of solid objects, the vanishing into thin air as well as fireballs and "Solid Lights" be explained (Brand 1979¹).

Heim's unified quantum field theory appears to be suitable to explain the UFO phenomenon. The new syntrometry allows us to broaden our horizens to such an extent that even the most fantastic occurrences will be understandable.

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APPENDIX

To give the theoretical physicist an idea of Heim's field equations, the selector equation, which, as an operator equation, selects integral multiples of the metron function, shall be given without derivation.

The space compressor can be written as the effect of a state selector K (a determinant-like space condensor) on the fundamental condensor $[k_1]$ (analogous to the Christoffel symbols Γ_{ke}^c of general relativity theory). This yields a discrete point spectrum of vectorial eigenvalues λ_m (with m = number of metrons). Is ";" the sign for a multiplicative operator action, then

$$(GRT:) R_{klm}^i \longrightarrow (Heim:) \mathcal{S}_{klm}^i; n = K_m; [k_1]^i; n = \lambda_m [k_1]^i; n$$

The Einsteinian field equations, with the Ricci-tensor R_{lm} , the scalar energy term T , the metric tensor g_{kl} and the energy density tensor T_{kl} :

$$R_{kl} = \text{const}(T_{kl} - \frac{1}{2} g_{kl} T).$$

According to the explanation given above, Heim's equations (trace formation $i=m$) are:

$$\mathcal{S}_{kl} = K_m; [k_1]^m = \lambda_m; [k_1]^m.$$

(no summation over m). If we define the "world selector" L_m by the equation

$$L_m; [k_1]^m \equiv (K_m - \lambda_m); [k_1]^m,$$

then, from all possible metronic counterparts of the $[k_1]^i$, the world selector picks out those that can exist as world structures when the following condition holds:

$$L_m; [k_1]^i; n = 0$$

This gives $6^4=1296$ equations! The variety of solutions for these field equations is now so large that all elementary particles can be derived as properties of metron dynamics. Einstein's field equations were too simple set up; they could not not even encompass the electro-weak and strong interaction fields.

The possible world structures are measures of condensation, i.e., curvatures, which leave the metron τ invariant but form compressions (see figure 1) in the projection onto the Cartesian reference world.

Through tensorial contraction or trace formation ($i=m$) of the world selector equation, or "world equation", it follows with the transition $\tau \rightarrow 0$, i.e., with the transition to differential calculus, that

$$\lim_{\tau \rightarrow 0} L_m; \begin{bmatrix} m \\ k \end{bmatrix} 1; n = \lim_{\tau \rightarrow 0} (K_m - \lambda_m); \begin{bmatrix} m \\ k \end{bmatrix} 1; n = (C_m - \lambda_m) \varphi_{k1}^m$$

After macroscopic approximation the field equations of GRT are yielded:

$$(C_m - \lambda_m) \varphi_{k1}^m \equiv R_{k1} = \text{const} (T_{k1} - \frac{1}{2} g_{k1} T).$$

The field equations which were describable by eigenvalue equations because of the R_{k1} equivalent in the case of $\tau \neq 0$, are now describing a continuum. φ_{k1} is a state function for the structure of the metric (but non-Hermitian) space-state which is formed out of the affine tensors Γ_{k1}^m , which in the Riemannian geometry portray the deviations of a metric structural state from pseudo-Euclidean space. The operator C_m is derivable from the metric structural quantities, with the property that the operator action for the transition to the geometrical continuum becomes the Ricci tensor. The real eigenvalues λ_i of the Hermitian operators C_m all lie in discrete point spectra:

$$C_{(m)} \varphi_{k1}^{(m)} = \lambda_{(m)} \varphi_{k1}^{(m)}$$

(The parentheses around the index m mean the cancellation of the summation convention which appear doubly).

With the transition to macroscopic, these state functions change into the translation symbols of infinitesimal analysis $\varphi_{k1}^m \rightarrow \Gamma_{k1}^m$.

The domain of quantum mechanics is also contained in Heim's theory. If the world selector equation shall hold only in R_4 (i.e., $x_5 = x_6 = 0$) and $(\mathcal{X}\lambda) = (\mu\nu)$ in the case of hermetry form b (photons)⁶ the equation reduces to

$$K_p \begin{bmatrix} i \\ k \end{bmatrix} m = \lambda_p \begin{bmatrix} i \\ k \end{bmatrix} m, \quad 1 \leq p \leq 4$$

$$\text{i.e.: } \mathcal{X}_m \begin{bmatrix} i \\ k \end{bmatrix} p - \mathcal{X}_p \begin{bmatrix} s \\ k \end{bmatrix} m + \begin{bmatrix} i \\ s \end{bmatrix} m \begin{bmatrix} s \\ k \end{bmatrix} m - \begin{bmatrix} i \\ s \end{bmatrix} p \begin{bmatrix} s \\ k \end{bmatrix} m = \lambda_p \begin{bmatrix} i \\ k \end{bmatrix} m.$$

Physically measurable structures do only exist if there is an exchange of maxima and minima of numbers of deformed metrons ("condensor flux"). These geometro-dynamical structure fluxes appear in R_3 in form of two structurally different components g and h , which induce one another mutually. That means, one has to summarize about two different indices i and k .

In the case of $\tau \rightarrow 0$ one gets

$$\lim_{\tau \rightarrow 0} \sum_i \lambda_p [i_m] = i \lambda_p h_m,$$

$$\lim_{\tau \rightarrow 0} \sum_k \lambda_p [k_m] = i \lambda_p g_m.$$

One gets the two systems of differential equations

$$\sum_p^4 g_{p,m} - \sum_p^4 g_{m,p} = i \sum_p \lambda_p g_m,$$

$$\sum_p^4 h_{p,m} - \sum_p^4 h_{m,p} = i \sum_p \lambda_p h_m.$$

If one writes g and h in that way by two new vectors a and b that the two equation systems can be expressed by a single equation system with the complex four-vector $\varphi_m = a_m + ib_m$ (it will be set $\sum_p \lambda_p = \lambda$):

$$\begin{aligned} \pm i \varphi_{1,4} + \varphi_{4,1} - i \varphi_{4,2} + \varphi_{3,3} + i \lambda \varphi_1 &= 0 \\ \pm i \varphi_{2,4} + \varphi_{3,1} + i \varphi_{3,2} + \varphi_{4,3} + i \lambda \varphi_2 &= 0 \\ \pm i \varphi_{3,4} + \varphi_{2,1} - i \varphi_{2,2} + \varphi_{1,3} - i \lambda \varphi_3 &= 0 \\ \pm i \varphi_{4,4} + \varphi_{1,1} + i \varphi_{1,2} - \varphi_{2,3} - i \lambda \varphi_4 &= 0 \end{aligned}$$

than the system can be written with the Dirac matrices

$$\hat{\alpha}_1 = \begin{pmatrix} 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \end{pmatrix}, \quad \hat{\alpha}_2 = \begin{pmatrix} 0 & 0 & 0 & -i \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & 0 \\ i & 0 & 0 & 0 \end{pmatrix}, \quad \hat{\alpha}_3 = \begin{pmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \\ 0 & 1 & 0 & 0 \\ 0 & -1 & 0 & 0 \end{pmatrix}, \quad \hat{\alpha}_4 = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix}$$

One gets

$$\left(\sum_{i=1}^3 \hat{\alpha}_i \frac{\partial}{\partial x_i} + i \hat{E} \frac{\partial}{\partial x_4} + i \alpha_4 \lambda \right) \varphi = 0$$

The eigenvalues λ are expressable by $\lambda = n \frac{mc}{h}$, and the the parentese is the Dirac operator

$$\hat{D} = \frac{h}{i} \left(\sum_k \hat{\alpha}_k \frac{\partial}{\partial x_k} \pm i \hat{E} \frac{\partial}{\partial x_4} \right) + \hat{\alpha}_4 \cdot mc$$

$\hat{E} = \text{unite matrix}$

The equation $\hat{D} \varphi = 0$ is the basic of quantum electro-dynamics. Quantum theory and general relativity arise when disallowing for certain approximations of Heim's general six-dimensional Quantum geometro-dynamics; for these reasons Heim's theory owns, indeed, a comprehensive character, and bridges the gaps in present concepions of the univers as described by physics.

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