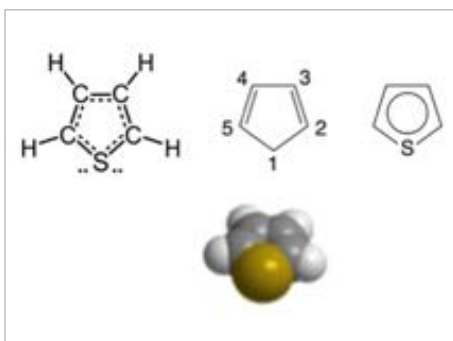
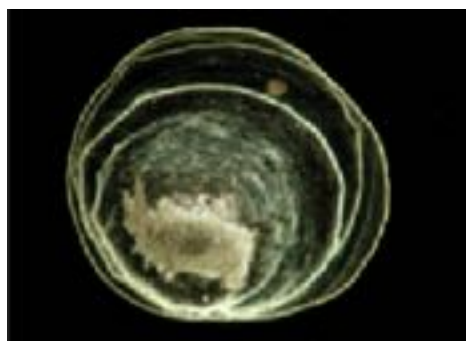


B O M R I M

Bulletin on Microvita Research and Integrated Medicine



Evolving Intelligence
from
Gasclouds
to
Organisms



WATER COMMUNICATING

Meeting special qualities of water

INTELLECT IN MOLECULES

Catalysts that cooperate with you

THOUGHTS ABOUT MIND

Both intellect and mind evolve
in the course of evolution

EXAMPLES OF INTELLECT AND MEMORY IN ELEMENTS AND ORGANISMS

Physical bodies evolved from atoms to full grown organisms. Their many mental skills did the same.

EDITORIAL

A first hypothesis about the nature of Nature is that the two ultimate elements of our universe are Energy and Consciousness. A second hypothesis is that both somehow seek optimal expression. A third hypothesis claims that the two are in an equivalent, rather than subordinate, relation to each other. These three hypotheses are assumptions, but in no way irrational.

All well and good, but without actual evidence the three principles remain, at the most, interesting speculations. In principle, ubiquitous Consciousness is the ultimate state of 'Being'. In its nonlocal state, it can assume abstract qualities like intelligence and other attributes knowledge, sentience, inferences, desire, memory, practical skill and creativity. It will not be easy to show the presence of nonlocal consciousness in local forms and the same applies to the local attributes of local forms of consciousness. If intelligent and unbiased observers will use their intelligence, they will be able to recognize intelligent behavior and consequently intelligent elements or organisms.

When a water glass is being filled with water, the actual amount of initially zero content will gradually increase to the full capacity of the glass. Time bridges the distance between 0 and 100%. The same applies to the expression of consciousness from initial zero to an ultimate 100%. Here the influence of the time factor has a name: evolution. It is the intention of SMRIM to develop a deeper understanding of the local forms of consciousness, microvita. Because it is easier to follow the birth and consequent development of intelligence than consciousness, the focus of this issue of BOMRIM is on intelligence and its evolution.

While comparing the various forms of life and their position in evolution, a definite question comes up: what determines the level of intellect? Can it be the size of their population, their life span, the size of their brains, the number of neurons, the quality of a neuronal network, their ability to cooperate or to dominate? The answer to this question may be beyond the current issue, yet the question is essential.

This issue is an experiment and experiments have plusses and minuses. If you have any remarks or suggestions regarding the approach or the content of this issue -or our approach in general-, please let us know.

Henk de Weijer, guest editor

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Semal plantation program

In July 2015, under the Semal Conservation Mission of SMRIM, a *Semal* tree plantation program was initiated by planting *Semal* saplings at Pacific Medical College & Hospitals, Udaipur and Patkar Colony, Chitrakoot Nagar with the help of active SMRIM members Dr. S.K. Verma, Dr. Vartika Jain, I.S. Rathore, G.L. Soni and nature lovers Pawan Kumar, Sushil Kumar and Rahul. *Semal* is an important medicinal tree, which is being exploited for traditional burning in *Holi* festival at Udaipur. Since 2006 SMRIM is working towards its *in-situ* and *ex-situ* conservation.



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INTELLECT AND MEMORY IN ATOMS AND ORGANISMS

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Introduction

Every day it becomes clearer that the old dichotomy of matter and mind needs to be replaced by the polarity of energy and consciousness. Many new questions come up, resulting in many satisfying, but also many dissatisfying answers. In the past, passionate researchers like Giordano Bruno and Jacques Benveniste, who could not resist searching behind accepted horizons of knowledge, were sacrificed in the maintenance of the status quo. The insatiable thirst to know and understand how the universe functions cannot be suppressed. In our time, with its multiple possibilities, this means that the amount of research in all directions and all areas increases tremendously.

Whatever the concept of awareness may mean, it will be difficult to deny that humans have consciousness and are aware of it. When they are a product of the wide path of evolution, also their consciousness must have evolved on that path. The human form has evolved from subatomic particles immediately after the Big Bang and the dust from exploding stars to the stage it has now. Form can be observed and analyzed but consciousness is an internal affair, and consequently it is not easy to observe and analyze it. However, there is a way out. The editorial note already suggested that consciousness is a substratum with qualities like intelligence, memory, intuition and more. Intelligence is not a solely internal property but expresses itself in behavior and form. If expressions of intelligence have developed from level zero to its present level, this development could be observed in atoms, molecules, viruses, uni- and multi-cellular plant and animal organisms. The number of studies on intelligence and memory within the different branches of the biological hierarchy has increased tremendously. Both plant and animal organisms show intelligent skills to interact with their social and physical environment. Not only their behavior, also their structure shows a high degree of consistency and applied intelligence. Separate from biology, physics discovered that molecules and atoms, the basic components of organisms, show signs of memory in the form of some rudimentary intelligence.

The results of all recent research are awesome, yet they meet big amounts of skepticism. Nevertheless it is the intention of this article is to show some examples of that research.

Examples of intelligence

Atoms

When ice cubes are heated up they melt, lose their cube form and don't regain it after lowering the temperature below 0°C. The transition from order to disorder is irreversible. The water molecules don't retain memory of the state of order from their previous organization. Although this is true, it is not an absolute truth. Before a gas is cooled down to absolute zero, 0K, and thus becomes a Bose-Einstein Condensate, first an intermediate state, called the prethermalized state, occurs. For a remarkably long time the atoms keep some 'memory' of their previous quantum mechanical origin. In 2012 Jörg Schmiedmayer of the Vienna Center for Quantum Science and Technology (VSQT) explained: "If we split the atom cloud into two parts and recombine them after some time, a wave pattern forms. That is proof that the atom clouds still contain information about having emerged from a highly ordered quantum physical state." The so-called correlation length of the period of 'memory' does depend on the density of the gas cloud but not on its temperature. This is supposed to indicate that the prethermalized state is a fundamental property of quantum physics.

Molecules

Researchers at the Ludwig-Maximilian-Universität (LMU) connected one end of a synthetic polymer gently to an Atomic Force Microscope (AFM), and the other end to a gold surface. If the salinity of the medium was increased, the molecule gradually plunged together. After the salt content of the medium was lowered, the molecule unfolded again. These, what are called 'intelligent molecules,' can be used as nano-switches, nanosensors, chromatography procedures and more.

Plasmids are small DNA molecules, which mostly occur in bacteria as circular, double stranded DNA. Compared to the previous 'intelligent molecules' they are complex. Different from viruses they are naked DNA and not only take but often also give and cooperate. They are able to replicate as an individual molecule during cell replication, but they may also integrate into the chromosome DNA of their host.

Viruses

Viruses are able to choose their victims and if necessary wait a long time inside the body of their choice before they strike. Although cake is not on their menu, adapting their behavior to changing circumstances is a piece of cake for them. If necessary, they can infect a victim as a prophage, and integrate into the chromosome of their victim until the most appropriate moment to come out of the box and replicate. They are predators, biological killing machines and unfit to cooperate. Not completely true! They are killing machines, but also capable to cooperate, although they lack feelings of empathy. Helen Leggets work at the university of Exeter showed that they only cooperate if it serves their own interest to kill as many cells as possible. When a virus cooperates with related viruses, it kills slower because by that it can replicate more. Conversely, when a virus cooperates with unrelated viruses, it kills faster to dominate the other viruses. Who can deny that this practice is clever and efficient?

Mimiviruses more look like a roaming cell nucleus than a virus. They contain enzymes and even t-RNA to copy itself, which is why a number of researchers think they are the origin of the cell nucleus. Maybe this form of cooperation between bacteria and cells resulted in the emergence of organelles, as Lynn Margulis suggested.

Only one little problem needs to be mentioned here: viruses, nor organelles or cells have a brain.

Plants

In the late 1980's, a severe draught occurred in South Africa. People, plants and animals suffered. The Greater Kudus, big South African antelopes that are herbivores, sought their hope in the still green Acacias. Then, thousands of Kudus started to die. The owners of the wildlife farms earned their living from tourism and became extremely worried about so many deaths. The kudus did not die from wild animals, parasites or disease. The mortality rate appeared to be relating to the number of kudus on a farm. On small farms there were even no deaths at all. Post mortem investigation of the kudus, showed that the rate of fermentation in the stomachs of the animals on the big farms was much lower than the ones on the small farms. Not only that, all dead kudus had unusually high doses of tannin. Big animals can easily handle the small amounts of tannin that plants produce to kill parasites and insects. The high amounts of tannin in kudus, stopped the fermentation in their stomachs and overfed they died of starvation.

After discovering this, the acacia trees were investigated. On the big ranches, the level of tannin in the trees was four times larger on the big farms. It was

obvious; something caused the acacias to overproduce tannin. They were trying to protect themselves.

Also the air around the branches was researched, and it appeared Ethylene, $\text{CH}_2=\text{CH}_2$ is a very light and odorless gas. When it gets to other branches and other acacia trees, its causes the mitochondria in their cells to produce enzymes that catalyses the production of more tannin. This is a chemical chain reaction and communication by the trees, to prevent a certain death in already difficult circumstances. How could trees think of this practical solution? Also these organisms don't have a brain, or something like a nervous system.

This was a chemical chain reaction and communication by the trees, to prevent a certain death in already difficult circumstances

This event shows that plants have intelligence, but are they also able to learn? To find out about this, a team from the Florence University designed a test in which mimosa pudica plants (touch-me-nots) dropped down 15cm. Definitely a significant shock, but not life

threatening. The plants were variously grown in Low-Light (LL) and High-Light (HL) environments. The team expected the LL plants to learn more quickly. The first test clearly showed the fright of the plants; they closed their leaves. Eight hours later the test was repeated, with the same result.

Then a large group was trained to drop 60 times with an interval of some seconds and this was repeated seven times a day. Gradually the plants stopped closing their leaves. However, when a different shock was performed the plants closed their leaves again.

Remarkably, the plants remembered their training. Six days later the plants that were subjected to the long testing did not close their leaves at all. When both HL and LL groups were tested again after 28 days both groups showed to have learned that the drop was harmless and even opened their leaves wider than before.

How do plants transmit their intelligence, learn and remember, since they don't have brains and a neural system? According to Dr Gagliano: "Calcium-based cellular signaling is one possible explanation, as is the processing of information by cells via ion flows—plants have well-established pathways to transmit information via electrical signals."

Amoebae

Cooperation is a widely spread phenomenon in the course of evolution. However, it is mixed with various forms of the opposite attitude: cheating. Cheaters do not cooperate with the overall group but still gain the advantages of the cooperation of the group. Nevertheless, they may cooperate with other

cheaters or in some instances they may cheat, while in others they do not. To go with the flow may be a sign of intelligence, but the choice to cheat or sometimes cheat and in other situations cooperate, hints at a certain level of identity and surely at intelligence.

Insects

According to Linnaeus, the Insecta group had no brains. Now we know by research, that both human beings and insects have brains and are smart, but does this mean that intelligence depends on the quantity of neurons? The content of whales is about 30dm^3 - $30 \times 10^6\text{mm}^3$ -, of human beings about 3dm^3 - $3 \times 10^6\text{mm}^3$ -, and of honeybees 1mm^3 . We can memorize places, have a sense of time, can learn, collect and interpret information, cooperate for targeted action but honeybees can also do this. Our brains are one million times bigger than the brains of a honeybee. Are we one million times smarter? It could very well be that the intellect of insects per mm^3 will outsmart our brains. More efficient or not, the presence of their intelligence is not a point of discussion.

Larger organisms

Humans have instinctive behavior, a clear feeling of identity, emotions and intellect, creativity and intuition, as well as deep discrimination. About half a century ago it was generally assumed that human were the only organisms that had such characteristics. At present increased research shows that both animals and plants are much closer to us than ever thought before. Magpies recognize their own reflection and are able to distinguish between the faces of foreigners and of people they regularly see. Elephants are able to paint and are self-aware. Cephalopods (cuttlefishes) are incessantly curious and able to use tools. Pigs are trained to move a cursor along a video screen. Dolphins are creative and cooperate cleverly. To only name a few.

Afterword

In this small sketch of evolving intelligence, from atoms to higher organisms and the associated research, the name Jagdish Chandra Bose (1858-1937) should certainly not be lacking. By experimenting with his crescograph –a device to measure the growth of plants– he discovered many similarities between plants and animal similarities. After the year 2000, continuously increasing amounts of research on the behavior and intelligence of animals and plant organisms have been carried out. Scientists like Eric D. Brenner,

Stefano Mancuso, František Baluška and Elizabeth Van Volkenburgh did legitimate research that could be reproduced and used very careful terminology. They demonstrated that the electrical and chemical signaling systems in plants are very complex and comparable to those used by animals. And the ways their hormones work do not differ much.

Although intellect in animals is meeting less emotional resistance, plant intelligence still is controversial. Stephano Mancuso says: "Intelligence is a property of life." Lincoln Taiz, an emeritus professor of Plant physiology at U.C. Santa Cruz, has a promissory attitude: "The plant behaviors that we cannot yet account for, will be explained by the action of chemical or electrical pathways, without recourse to "animism." Clifford Slayman is even tougher: "Plant intelligence is a foolish distraction, not a new paradigm." Positive or negative bias is equally dangerous for a balanced increase of knowledge. If physical bodies evolved from atoms till full-grown organisms, there is little reason to assume in advance that their many mental skills would not have evolved along that same path. It is also more than reasonable to assume that properties like 'memory' and 'intelligence' in molecules will be closer to linear behavior than the same properties in humans. To deny for instance, that dogs will not help children with their homework, is anthropomorphism. New, clearer definitions that take evolutionary developments into account and let go of existing anthropomorphisms are in dire need.

Dr Kröplin researches the interaction of various causative waves from specific sources and water. The outcome of the tests run parallel to the original waves and the resulting patterns are caused by the original waves on the granules of matter inside the water. Still, then questions about the origin and nature of the causative waves arise, although the answers are not essential for the performed tests. These test are interesting because a certain amount of time lies between the presence of the causative waves and the emergence of the patterns. Obviously the water – including its present additives– absorbs the incoming waves and after some time reproduces a vibration that is not specific for the water itself, but for the subject of the test. A conclusion of some kind of memory –during the silence of the test– seems irrefutable.

When Dr Oviedo tried to transform a commercial catalyst into a specific one, he discovered that no rational procedure could be developed that automatically resulted into an expected outcome. Still unknown influences in molecules direct their behavior. Also here the question comes: 'What is the enigmatic traveler that hides in the background?'

Crows are able to solve a puzzle with eight components in two and a half minutes.

INTELLIGENCE IN MOLECULES: MICROVITA

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Abstract

According to Coulombs law, two charges of a different sign attract and charges of the same sign repel. This rule also applies to neutral molecules that possess regions of high or low electronic density,¹ but then the level of electric charge² is essential. Both theoretical and applied sciences are familiar with this law. In all refineries of the world, it is a common phenomenon that occurs during hydro treatment³. It comes into effect when molecules with a high electronic density (HED), caused by the presence of Sulphur, attract molecules with vacancies of electrons (VE), molybdenum. The resulting extra charged and dense molecules are heavy contaminants. Because refineries eject these molecules into public space and in this way heavily contribute to air pollution and acid rain.

In catalytic hydro treatment, a material is involved that contains Cobalt and attracts molecules with HED towards it self. If such a material also permits the breaking of Carbon-Sulphur bonds, it is called a catalyst. These catalysts play an essential role. Experiments in laboratories have shown that the application of catalysts with a HED yields a high performance. According to the traditional explanation, charges of the same sign should repel molecules with HED but that is not what happens. In fact the opposite occurs: compounds with the same electric charge attract. The occurring attraction is even stronger than any molecule could supply, no matter its high electronic density or lack of electrons. Apparently, in this reaction a still unknown mechanism is operating.

It seems unavoidable to open up to new and challenging concepts that enable a coherent understanding. The new theory of microvita can be

a potential candidate for such a concept. If that theory is correct and applies here, the essential question is whether a situation arises, in which intelligent, creative units of consciousness, called microvita, are attracted or become active.

Keywords: catalyst, microvita, pollutions, intelligent molecules.

Introduction

Nowadays, in the majority of chemicals processes, chemical compounds, called 'catalysts,' are used. Catalysts accelerate a thermodynamic reaction and cause one particular response, rather than another. They find application in different areas: pharmaceutical, environmental, bio-fuel, fuel, clean energy, food, petrochemicals, and fertilisers. For example, the production of ammonia requires Nitrogen and Hydrogen, but these molecules cannot react on their own; they need a catalyst that initiates the reaction and accelerates it. Two or more compounds can either react or not but if they do, several paths can result. Catalysts are not different; also they may take one specific direction rather than another. It is unknown why they adopt a particular path. No theory exists that can predict a particular behaviour.

At this moment, electronic equipment and various methods of advanced analysis exist to observe tiny levels of a compound. XPS X Spectrophotometers of X-ray, as well as Transmission and Scanning Electronic Microscopy, are used in the study of catalysts. Despite the fact that these instruments are immensely precise, they all have one essential limitation: they can only observe the effect and not the cause. Worldwide, researchers synthesise new materials to be used as

a catalyst, but these attempts operate solely on the basis of trial and error, without a proper understanding of why the concerned materials do what they do.

Observation

In the synthesis of a catalyst, a lot depends on variables, such as the kind of atoms and the recipe, i.e. all steps and conditions that may lead to a final product. A slight change in the procedure results in an entirely different product. In the testing period, we experienced that a particular test was repeated with the same steps and conditions and yet, the outcome was completely different. Despite repeated tests, it often happened that we were not able to come up with a satisfactory answer.

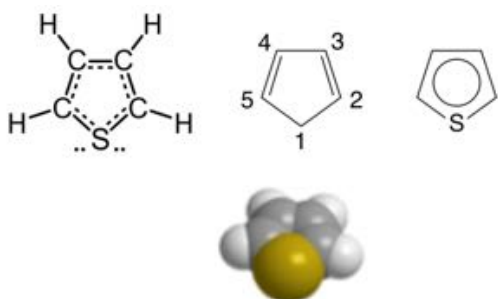


Figure 1.

The molecule Thiophene (C_4H_4S), present in gasoline.

The Sulphur atom creates a partial negative charge in the covalent bonds: C-S and S-C because the S-atom possesses four additional electrons in its outermost layer. Around the sulphur atom (yellow ball) exists a high electronic density.

Before removing heteroatoms⁴ from a fuel, we designed a particular procedure to synthesise an appropriate new catalyst and assumed the resulting procedure to be specific for the source (a chosen commercial catalyst). We then conducted a test to generate reactions of cyclic hydrocarbons (see Figure 1.) with the heteroatoms Sulphur, Nitrogen, and Oxygen. For these reactions the injection of a hydrogen flow is needed, as well as a relatively high temperature ($>340^\circ C$) and a high pressure. In this way the heteroatoms S, N, and O are removed. Hydrogen permits the regeneration of catalysts, since it breaks the bonds of the heteroatom-catalyst, while H_2 -molecules weaken the C-S bonds of the polluting molecules. All this occurs on the surface of the catalyst.

One month later we observed the outcome after which we repeated the same experiment with two additional samples. To our surprise, the results were not identical but doubled. We reviewed each

step and assured that the same steps of the concerned procedure had the same condition. What had happened here? We could not think of any explanation.

The start of catalytic processes depends on the attraction of molecules with a high electronic density (negative partial charge) by molecules with a low electronic density (positive partial charge). The high level of electronic density in the first molecules is caused by the presence of atoms like Oxygen, Nitrogen or Sulphur. The low level of electronic density in the second molecules is caused by the presence of atoms like Cobalt or Molybdenum and the support,⁵ an oxide of aluminium, with an electronic vacancy. A catalyst does not distinguish between Oxygen, Nitrogen or Sulphur, which could mean that the process is based on randomness. Looking at the Pauling's scale⁶ the order of electronegativity is Oxygen (level = 3.44), Nitrogen (3.04) and Sulphur (2.57). Our last experiment, where a catalyst having a high electron density was involved, performed better than a catalyst having a low electron density under the same operating conditions. These atoms (Oxygen, Nitrogen, and Sulphur), are present in fuels such as: gasoline, gas-oil, etc and will generate acid rain and carcinogenic matter in the air.^{7,8} The catalytic process used in refineries is designed to remove these heteroatoms and metallic atoms and in this way purifies fuels, bio-fuels, air, and rain.

Two important factors promote the removal of a heteroatom. The first is a difference among partial electric charge and the second is the formation of a structure called CoMoS, because it contains Cobalt, Molybdenum, and Sulphur. This CoMoS-structure removes heteroatoms (Oxygen, Nitrogen, and Sulphur). Molybdenum attracts and creates a bond with the heteroatom of a molecule. After that, hydrogen promotes the breaking of the bond of heteroatoms with Molybdenum and also takes the heteroatom present in the bond.⁹

The function of a support is to bring scattering to this structure, because the process of removal occurs on the surface. For this scattering, the CoMoS structure needs to be distributed uniformly throughout a support, in this case, alumina (aluminium oxide). A first, main problem arises due to the strong interaction of the support with Cobalt and Molybdenum, because this diminishes the performance of the removal of Sulphur. This interaction between the support and Cobalt depends on many factors, the majority unknown. It is a main problem that arises when

supports with several other metallic atoms interact with the Cobalt and in this way reduce the performance. A second problem occurs when the scattering is not enough. In that situation, the structure of CoMoS gets restricted to a limited number of areas and other areas of the support do not participate.

Larger quantities of CoMoS could explain why a material with a high electronic density exhibits a higher participation in the removal of heteroatoms than a material with a low electronic density. However, this does not explain the attraction of charges with the same sign. Until now, no explication of this attraction exists. Such attraction is realised when Molybdenum creates a bond with a heteroatom. We say 'charges with the same sign' because the pollutant molecule and the catalyst both possess a high electronic density. Why a catalyst with a CoMoS structure (electronic vacancy), possesses a high electronic density, can be explained by the extreme electronic density of the support. After distorting Carbon dioxide by a systematic application of different temperatures, the basic properties of the material can be determined by proper analysis and consequent inferences. Therefore, at least part of the effort to explain the attraction of charges with the same sign has to go in a new direction.

At least part of the effort to explain the attraction of charges with the same sign has to go in a new direction.

Looking for new models

In 1986, the Indian philosopher P.R. Sarkar spoke for the first time about the existence of units of local consciousness and called them microvita.¹⁰ "Considering that microvita are living entities, they have bodies, though their bodies are as subtle as idea. Research work in physical laboratories needs to be done on microvita because they are living entities. Then again, microvita bring spirit closer to matter. That which helps in the creation of life comes within the spiritual or supra-psychic urge, and as such research cannot be done on this aspect of microvita in physical laboratories"¹¹

In the synthesis of supports and catalysts, the implied temperatures are high, ~ 110°C, 450°C and in other cases 600°C. The materials involved crystallise and calcine¹² at high temperatures. The reaction process to remove the heteroatoms and metallic bonds also works with high temperatures (>340°C), high pressure and hydrogen. Both high temperature and pressure increase the number of

collisions among molecules, including the H₂ atoms. P.R. Sarkar mentions a relation between temperature and microvita: "They will undergo contraction and hibernation at freezing temperature and expansion and hibernation at boiling temperature."¹³ Temperature can cause microvita to shrink and hibernate or expand and also hibernate. Various denominations of microvita, crude negative, subtle negative and positive could change the properties of materials. In crystals, changes in temperature influence the structure of its material and textural properties: surface area, pore diameter and pore volume, but not its acidic or alkaline property. Which properties change, and how, depends on the kind of atoms that is involved: Nickel, Cobalt, and Zinc promote acidic properties, while Magnesium and Calcium promote alkaline properties.

According to P.R. Sarkar: "Billions of microvita produce a single carbon atom."¹⁴ and also: "A single microvita is insufficient to form one carbon atom, but when billions of microvita get solidified, a carbon atom is formed."¹⁵

Many questions will come up now. Could the number and denomination of microvita in an atom determine all its properties or only some? Is it possible to transform a particular atom with a given number of microvita by increasing or decreasing the number of its microvita or by varying the denominations of microvita? If so, how can this be done? By changing the temperature, a subtle vibration or contact with a medium, which knowingly or unknowingly, works with positive or subtle negative microvita? Does the number of microvita define the properties of an atom, a molecule or a compound and if so, which properties are then affected? The homework now is to search for truth by an intuitive approach and complementary rational analysis before, during and after laboratory tests.

Suggestions

In my opinion, efforts to improve an existing or develop a new process, to get a better performance, should include the development of microvita science. Microvita have intelligence and it is not unthinkable that catalysts can be designed that select the molecules it intends to attract towards themselves and which not. Such selection, to take to one specific reaction rather than many that may be thermodynamically possible, will increase their property of selectivity. This will not

be restricted to catalysis in hydro treatment (clean fuel) alone, but also for catalysts that are used in the synthesis of medicine, fertilizers, food, energy, chemical products, etc. Regarding this, P.R. Sarkar remarked: "Microvita also have two parts—the cruder part and the subtler part. So far atomic research has been done, taking into account (only) the cruder part of atoms. The subtler part of atoms has not been investigated. For research into the subtler part of atoms, psycho-spiritual practice is needed."¹⁶

The efforts, to improve this before mentioned process, should:

1. Avoid and decrease the interaction between a support and Cobalt and/or Molybdenum.
2. Increase the quantity of the CoMoS structure and improve its scattering around the support.
3. Develop the support by increasing its surface area and property of scattering and by decreasing the interaction of Cobalt and Molybdenum at the same time.
4. Synthesize a support with a high surface and large pore diameter. This permits big molecules to enter catalysts with an application in pharmacy or environment, such as cleaning fuels.
5. Be open to other, so far unknown, phenomena.
6. Ultimately lead to develop another, maybe fundamentally new, technology.
7. Modify the properties of catalysts or contaminants by including microvita

Notes and References

1. In quantum chemistry, this is a measure of the probability of an electron to occupy a point of space around a particular point.
2. Molecules of organic compounds do not have an electric charge but possess covalent bonds. Different from an ionic bond, one or more electrons are shared equally amongst the two atoms. A covalent bond can have a large dipole (see Figure 2.), which is a bond with profound differences in electronegativity, like C-O, C-N, and C-S. Such molecules have a partial negative charge. Therefore, they have one or more regions with a high or low electron density, which attract molecules with respectively low or high electron density. In chemical reactions, the electrons flow from a

region of high electronic density to an area of low electronic density.

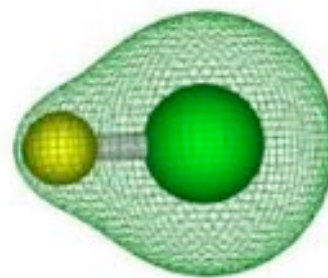


Figure 2.

A covalent bond of two atoms with a large difference in electronegativity that results in a negative partial charge.

3. In chemical engineering, especially in petroleum refinement, a process, in which reactions with hydrogen are used to remove impurities.
4. In organic chemistry, any atom other than Carbon and Hydrogen.
5. A support is a material in which the active phase (in the case mentioned, the structure of CoMoS) is over. The enormous properties of the catalyst, such as thermal and chemical stability, mechanical resistance, hardness, and scattering, then get exposed.
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THOUGHTS ABOUT MIND

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“My contention is that, in order to fully understand the underlying process of evolution, particularly the capacity of perceiving the environment and making intelligent adaptations, we must be open to the idea that consciousness may be the main force of evolution.” Orogee Dolsenhe ¹⁾

“In simple Lamarckianism, organisms inherit traits induced in their parents by environmental conditions, whereas through symbiogenesis, organisms acquire not traits but entire other organisms, and of course, their entire sets of genes! I could say, as my French colleagues often have, that symbiogenesis is a form of Neo Lamarckism. Symbiogenesis is evolutionary change by the inheritance of acquired gene sets.”

Lynn Margulis ²⁾

Introduction

On August 24 of this year, a Dutch newspaper mentioned that Justin Gatlin, by far the fastest sprinter in the last two years, still might benefit from the anabolic steroids he used ten years ago. In 2013, Kristin Gundersen from the University of Oslo, studied the effect of steroids on mice. Young mice received steroids. Three months later they were still found to experience advantage from this. Within a short period of renewed training, their muscle mass increased by 31 percent while the rise in a control group was only 6 percent. Three months of being clean for mice would mean ten years in human life. Similar research was done at the Umea University in Sweden, but there on three groups of powerlifters. It appeared that those who had stopped using steroids, after years still had muscles and nuclei that were comparable to those of the powerlifters who used steroids. After renewed training, the muscles and nuclei were quickly activated again. So-called ‘muscle-memory’ causes the increase of performance. Muscles seem to have memory, a component of intelligence. What about other constituents of organisms?

All organisms are compositions of cooperating, autopoiesic units. This composition is not a random organization, but a functional, spatial network with relatively simple to extremely complex elements. This organization has the form of a hierarchy that begins with subatomic particles till human organisms and their populations. This principle is called the Biological Hierarchy.³⁾ (See Figure 1.)

The number of cells in a human body is $\sim 10^{14}$, the overall number of atoms is $\sim 10^{28}$. A nucleus occupies about 10% of the cell volume. If plasm takes 50% of the remaining volume, each organelle occupies about 45% : 15 = 3% of the volume. Assumed that all elements have the same density, each organelle contains about 3% of 10^{14} , which is about 3×10^{12} atoms. It cannot be said that anything in a human body or in an organism, is ‘simple’, even though we talk about ‘simple’ organelles. The presence of cooperation and coordination is a direct hint at intelligence. If intelligence is an attribute of consciousness, consciousness is involved in the organization of cells and in fact of all other levels of the

biological structure. In the discussion of body and mind, suddenly consciousness, as the bearer of intelligence, comes forward. What is that intelligent, knowing consciousness?

John Wheeler wondered: ‘Consciousness can analyze the world around; but when will consciousness understand consciousness?’⁴⁾ This sentence is rather cryptic because three different meanings are hidden inside. A first meaning lies hidden in this question: “Since only ubiquitous, consciousness exists, how can consciousness know itself?” However, the universe is a collaboration of two equivalent and inalienable components: energy and consciousness. If energy occurs in local form, there is no reason to deny the same for consciousness.

The Biological Hierarchy	
Biosphere	The complete biotic and abiotic system
Ecosystem	Interspecific group of interacting systems
Community	Interspecific group of interacting species
Population	A group of organisms of the same species
Organism	Basic living system
Organ system	Functional group of organs
Organ	Functional group of tissues
Tissue	Functional group of cells
Cell	Complete biological unit
Organelle Virus	Group of macro- and biomolecules Not fully autopoiesic; brains nor vertebrae
Macromolecule Cluster of molecules	Group of biomolecules Temporarily groups of molecules
Molecule	Group of atoms
Atom	Particle of matter
Elementary particle	Particle of energy

Figure 1.

This idea means that both energy and consciousness exist in nonlocal, as well as in local forms. Imagine bubbles of consciousness in an ocean of consciousness, like air bubbles in water. At the same time, ubiquitous consciousness is present inside the micro dimensions of Planck space and beyond the macro borders of our universe. If both nonlocal and local consciousness exists, a second hidden meaning in the statement of Wheeler is: “When will local forms of consciousness understand nonlocal, consciousness?” A third and reverse question is superfluous because nonlocal consciousness is the cause of its effect, the local forms. Ubiquitous consciousness knows and qualifies.

After this, two new questions come up: ‘What is the relationship between nonlocal and local consciousness?’ And: “What can be the relation between these local forms of consciousness and individual minds?”

Mind, Evolution and Soul

Whatever Descartes (1596-1650) doubts about, not about the existence of his Self, his human body and mind. He leaves in the middle whether this mind is a homogeneous 'thing' or a heterogeneous, coherent and layered network. To distinguish between mind and body and conclude that the body 'is constituted merely by a certain combination of parts and other variable features of the same kind', while 'mind is a pure substance'⁵⁾ is enough for him. The subject of consciousness and questions about a relation between mind, matter and consciousness, cannot be part of his approach. He concludes that mind is something, rather than nothing, and because of that is a substance. He merely mentions the word 'soul' but does not distinguish between mind and soul. Different from him, we are interested in the substance of body and mind, as well as in the relation between mind and soul.

Also Baruch Spinoza (1632-1677) does not distinguish between mind and soul. In 'Metaphysical Thoughts' he writes 'the human mind is immortal, and a thinking thing' but also 'The soul is a thinking thing.'⁶⁾ However, different from Descartes, he claims that the mental and the physical are two aspects of one and the same thing. This idea makes Spinoza the founder of 'double-aspect monism.' Because the boundaries with 'neutral monism' are not clearly defined, he is sometimes also presented as the founder of 'neutral monism.' 'Double aspect monism' holds that the mental and the physical are inalienable, yet distinct. For neutral monism, the mental and the physical are two ways of describing the same elements, which in themselves are neither of the two. In the words of Bertrand Russell: "My belief, though not wholly, is that both mind and matter are composed of a neutral stuff that in isolation is neither mental nor material."⁷⁾

A first remark about the before mentioned authors and their ideas, is that none of them give any indication regarding the nature of that 'neutral stuff' or 'substance' of mind and matter. A second remark is that, although physics has made considerable progress, energy is not accepted as elementary. A third comment is that if energy is not considered to be a primitive, both double-aspect an neutral monism are close to, what I call, 'bipolarity' but others prefer as 'deep interactionism.' The 'stuff' or 'substance' that is mentioned is the collection of 'bubbles of consciousness', the various denominations of crude and subtle microvita as noted by the Indian philosopher Sri P.R. Sarkar. Both matter and mind contain those bubbles, those microvita, and the two differ because matter, atoms, also includes local packets of energy, subatomic particles.

A fourth remark comes up now. Is the overall mind of humans the outcome of a 'Deus ex machina'⁸⁾ or of a natural process in the course of evolution? If it did emerge in the process of evolution it must have grown from the level of 0% expressed mind, till the level of the present 100%, from the dormant to the present highly manifested stage. (See Figure 2.) Whether the line of evolution has developed like the straight line A or otherwise, like B and C is, at this stage of the discussion, not essential. What is essential is not to adopt an anthropomorphic attitude and assume that, since both humans and cells have mind, the two forms of mind are

equal. A block of wood and a wooden chair have their material in common, but nevertheless the two are quite different.

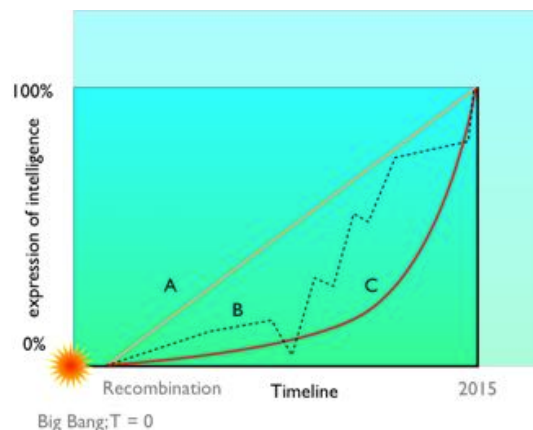


Figure 2.

An overall picture of 'mind'

The word 'mind' has come up several times, and it is now more than legitimate to ask: "What is it? Does it have a structure? What are its ingredients and what is its substance?"

For this, we need to face eastward, to India. Although India has known many different theistic and atheistic philosophies, all take a position towards the two fundamental elements of the universe, Consciousness and Energy. All philosophies reflect on mind or '*manas*' in *Samskṛta*, which does not mean there is an agreement in their interpretations. Even intrinsic clarity and cohesion are rare.

Most Western ontologies and philosophies are materialistic and do not have a complete picture of the mind. A rather recent and 'pure' form of materialism, called '*eliminative materialism*,' even denies the existence of mental states. Although these states are part of common sense, they are not accepted to apply to anything in the external world. This approach equates to wanting to prove that the very pen, with which this sentence has been written, does not exist. In a bit more abstract way, it intends to prove by arguments that arguments do not exist.

In the following paragraphs the clear, cohesive and rational philosophy of Sri P.R. Sarkar⁹⁾ will be used to paint a picture of what is called 'mind.' In the course of evolution, the complete and complex human mind has emerged from atoms with only a dormant mind. A full image of the mind will be mentioned and explained in the next paragraphs, however not in detail.

A mind is a composition of autopoiesic elements and all organelles, cells, tissues, organs and organ systems and organisms have a mind. The biological machine is the home of a layered set of minds and one highest overall mind. The biological machine, the basis of the human overall mind, is called 'the crude body.' Without it a human being cannot function on this or any other planet.

In cooperation with the senses, the most objective part of the mind, called 'subtle body' or *Citta*, observes its world and collects events, forms and reactions to what was

The biological machine is the home of a layered set of minds and one highest overall mind.

observed. Everything that enters this part of the mind, in principle, is colored and deformed. The information is not stored randomly but organized into five different layers that are closely connected to the five hormone centers, chakras, of the body. To be very clear, observation of the world includes three kinds of interaction. The first is the perception of the external world with the help of the five senses. The second is proprioception, finding a balance of the body with the multiple conditions of the environment. The third is interoception, which is a perception of the internal variety of aspects within the body itself. Like 'mind,' also perception is multi-facetted.

A mere collection of information without conscious observation, will not lead to a feeling of identity. The external world is observed but also the products stored in *Citta* need to be observed. To create a sense of identity, a subjective form of ordering is vital. A simple observation of all collected information will not do. That observer and organizer of *Citta* is the second part of the mind, called Doer-I, ego or *Ahamtattva*. This part of the mind observes and structures all incoming information, relates it to memories, develops preferences or rejections, concludes potential modes of self-interest and identifies itself with all that happens.

This Doer-I identifies with all events, but not with itself. For this, another observer is needed, an observer who can look below the surface and at the same time has a wider horizon. The name of that observer is Existential-I, *Mahat-* or *Buddhitattva*. Despite the fact that it realizes its existence, it is capable of looking beyond direct self-interest, realizes its existence and combines deep intellect with intuition.

The first entity of the mind, *Citta*, is directed at the objective external and internal world. The next one is headed at itself and the direct dynamism of life, while the third entity realizes itself and is capable of looking beyond time place and itself. A fourth entity is present to observe and realize all events and all identifications without taking part in any activity. This reflecting observer is the soul or *Átman*. *Átman* is connected to the mind but not involved in its activities. It is nonlocal Consciousness reflected on the mind.

The substratum of the subtle body of mind

In *Ananda Sutram*,¹⁰ Sri P.R. Sarkar mentions the word '*cittanu*', which is Sutra 1-13 is translated as 'ectoplasmic particle' and in 3-6 as 'mind-stuff.' It is a combination of two words: *Citta+a'nu*. *Citta* has been explained in the previous chapter as 'subtle body'. '*Anu*' means 'small particle', 'minutest part', 'molecule' or 'very small.' So, *cittanu* can be translated as 'smallest particle' or 'molecule of mind.' Here we have arrived at the substratum of mind. *Cittanu* cannot refer to subatomic particles, quarks and/or electrons. These are the smallest particles of energy, packets of energy. The smallest particles of mind can only be local forms of consciousness, 'bubbles of consciousness,' in other words 'microvita.' Microvita are the substratum of mind. They move incessantly, which means they also have intrinsic energy.

Relatively simple forms exist like atoms, molecules, and macromolecules, intermediate units, like viruses, relatively simple organisms like plants, shrubs and trees and animal cells, but also complex organisms like dolphins and human beings. Do they all contain all denominations of microvita? No, they do not. Minds are only complete if all

denominations of microvita are included, but incomplete minds with only negative microvita do exist.¹¹) In some smaller or bigger molecules only crude and subtle microvita occur, in other macromolecules also positive microvita. In some compounds, molecules cluster in groups. Microvita do the same. Organelles and cells are the first units with all denominations of microvita and consequently complete minds.

To conclude

The local packets of energy, elementary particles, bring physical structure to atoms, like the endoplasmic reticulum does for cells. Atoms contain crude negative microvita, which form an incomplete and dormant mind. The mind is not just a composition of all various local forms of consciousness, microvita. The observers Doer-I or ego and existential-I are essential elements of it. The individual soul is the reflection of Nonlocal Consciousness on individual mind. Manifested minds are layered compositions of various denominations of microvita in atoms, molecules, macromolecules and clusters of mind. The increase of use increases the amount of intrinsic energy in the various individual or groups of microvita.

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MEMORY AND COMMUNICATION IN WATER

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Abstract

Our worldview distinguishes between natural science and humanities, between the world of the measurable and the world of unproven notions. But actuality is all that acts, and not all that acts is measurable. Otherwise your first great love would not been actuality and your children's trust only an illusion. There would be no honor and no ethics. When we now see in the water drops that they "talk" to one another, that information and mental energy seem to generate systematic changes, it is worthwhile to at least have a closer look. Such closer look could reveal the measurable beginning of what we all know intuitively, that mind permeates matter and that thoughts manifest themselves in material structures much more extensively than we now think is possible.

Water is a medium that is largely not understood by physics and chemistry. Its material nature is tested, studied and understood by physics. However, beyond its physical and chemical qualities also memory and information play a significant role in water, and these form a bridge from the immaterial to the material world and vice versa. These subtle phenomena are the ground of misunderstanding, and they can neither be studied nor detected by traditional experimental methods.

Hence, we use a different approach: we investigate the patterns that appear in a water drop after evaporation of the water and photograph them under a dark field microscope with a magnification between 40 and 400. We can prove that the patterns correlate with information exposed to the water. For one experiment, the patterns are in the most cases so similar that we can speak of reproducibility of the test.

Typical patterns appear for each specific kind of water, depending on the ingredients and history of the water. External effects may overrule these patterns, e.g. things, which are laid in the water or electromagnetic frequencies or acoustic waves that oppose to the water. By the observed patterns, we realize that water has a particular kind of memorizing and storing information of things that it has experienced. From experiments, we can also see that living organisms, like plants, can "read" this information and act with a unique behavior to the information stored in the water.

Our findings prove the memory of water and also the communication between separate units of water. Both seem to be essential for the understanding of mechanisms in living cells -these consist for approximately 70% of water - as well as for the communication of water in the world. This knowledge constitutes a reason to talk about a new dimension of quality and health of our planet earth.

Keywords: water, memory.

About Information

To understand the world, we pick information mostly by our senses and interpret it. Our interpretation gives us orientation and guidance. In many cases we use technical assistance by glasses, microscopes or analysis methods in order to assist our senses to get more security of the interpretation. For the receiver only the information he receives and interprets is relevant.

We find the information either as a point information, e.g. a grain of sand or metal may be soft or hard or colored in a certain manner or is characterized by a chemical analysis. We also may find it in form of a 2 or 3 dimensional pictorial image, where the information of many points increase the impression. In such pictorial image not only the information of the points is present, the information is magnified by the relative position of the particles, which we recognize as pattern, having a specific structure or not. All signs, labels markers and all writings, pictures and holograms are of this kind.

Clearly, the complexity of the relation of point information raises the information to a higher level. For this reason, the patterns play a preeminent role in information transfer. Colors assist within patterns, but are much more faithless in transfer and interpretation.

Therefore, the mechanisms of interpreting the patterns play a significant role in life and are widely developed within living organisms. Only the pattern as we realize it, is our reality.

The origination of patterns – research “World in a drop”

We take a glass plate as used as object plate in microscopy and clean it dry with a paper tissue. On the surface we place small droplets using a clean syringe as used for injections. The droplets have a diameter of about 3-6 mm depending on their surface energy and the skill of the experimenter. The distance between the drops is about double of the diameter. For each water test we use a different syringe. (See Fig. 1) After placement we put the plate with the droplets (See Fig. 2) under a dark field microscope (See Fig. 3) and observe the drying of one drop of our choice. After a while, as the evaporation of the water proceeds, we sometimes observe an internal movement based on the thermodynamics of the drying process. Sometimes the picture is calm and stationary. The drying of the water proceeds from the outside rim of the drop often in small visible steps. While the wet inside is still moving at the dry outside a pattern is left on the glass surface, which is continually completing until the full drop is dried. The drying proceeds slower or faster due to the level of humidity in the space around, but this influences the pattern only marginal. The drying process is not influenced by any outside measures. The patterns consist mostly of additives in the water. Its chemical substance is not important for this research, because we concentrate on the fact that reproducible patterns are produced, such as by a force field that guides the positions of the granules.



Fig. 1: Syringe



Fig. 2: Partly dried drop



Fig. 3: Dark field microscope

Drops from the same water produce similar patterns. (See Fig. 4 and 5.) This leads to the assumption that (molecular) force fields exist in the water, which position the pattern particles at their location. However the reproducibility is only given, if the test conditions are kept constant. After complete drying the patterns remain virtually changeless and even over a long time.

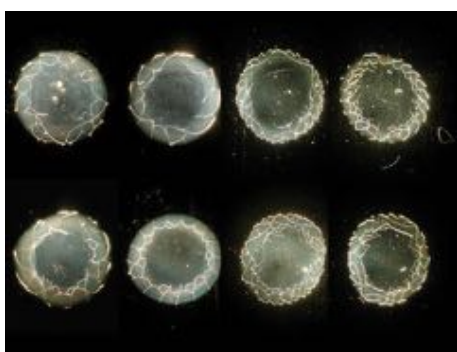


Fig. 4: Similarity of droplets in one test.

The patterns are individual, but similar.
In the water is myrrh.



Fig. 5: Comparison of different waters

Each horizontal row represents one water. The rows can be clearly distinguished from each other, which indicates a reproducibility of the method, provided only one experimenter is involved.

The research method

After having the basis to create a stable pattern, we can impose an impact to the water and see its influence, by comparing the pattern before and after the impact. The systematic change refers to the impact. The experiments are realized at the same time and the same place, in order to deviations by time and place. Water in this sense is an aqueous solution with impure additives like it appears in nature. Because the pattern was created by the information stored in the water, we talk about “the memory of water”, where we define memory as “the ability to perceive and retain a content

consciously or unconsciously". This memory is fading and lasts - dependent on the sort of water - between minutes and months. Thus we define a remembering and a forgetting modus as working hypotheses.

Examples

a) The face of water

The pictures below show examples from water from different places. The waters have different impurities. However this does not explain the different patterns that occur.

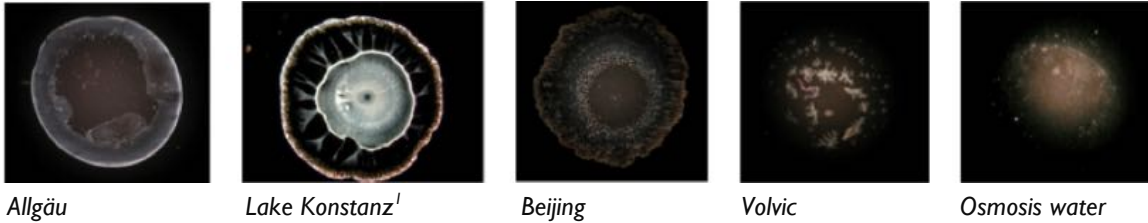


Fig. 6: Patterns of different waters¹

b) Influence of inlaid flowers

Blossoms of the flowers Evening Primrose and Sweet William have been put into a water. After some time drops were taken. The patterns show distinguished structures, related to the kind of flower.

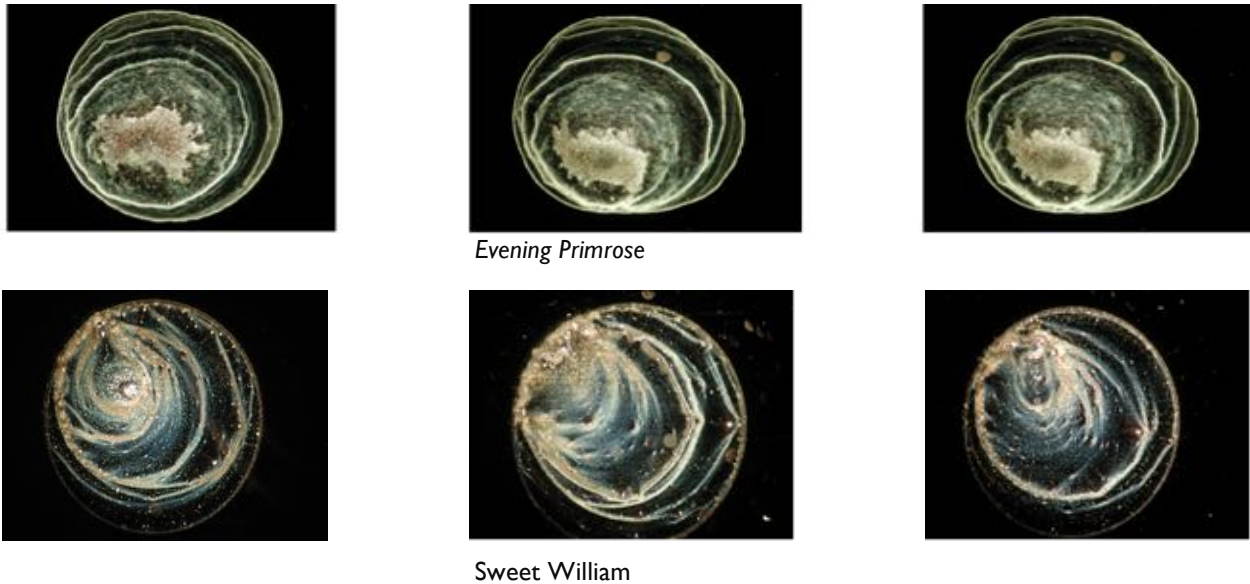


Fig. 7: Patterns from inlaid flowers

c) Influence of plants upright and top down

Stems of the flowers gladiolus and sunflower have been put into the water; first upright, like the plant grows, and then top down. The patterns of the water drops are dramatically distinguished, which indicates a non-local interaction between the plant and the water.



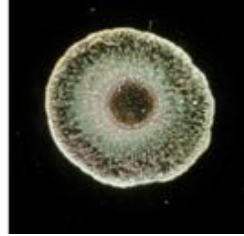
Fig. 8: Stem of plants in water: upright and upside down: the water reflects the position.

d) Influence of electromagnetic waves

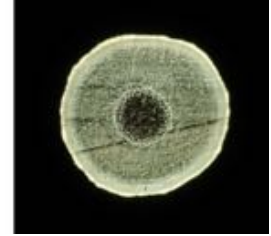
The electromagnetic waves are generated by an ordinary cell phone that is placed into a metallic pot above the water, in order not to switch it off. First, a water drop is taken from the pot before the cell phone is activated – then, after the cell phone is activated for 3 minutes.



Experimental set up



Pattern before activation



Pattern after activation

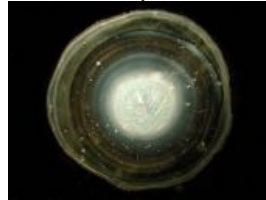
Fig. 9: Patterns of water that was exposed to electromagnetic waves

e) Influence of mobile phone on body water

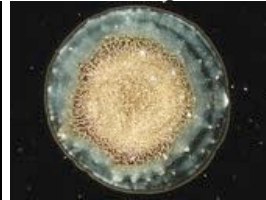
The persons made a 3 minutes fictitious phone call without talking. Then, saliva was taken from the mouth.



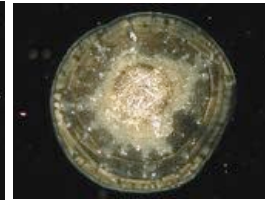
Person 1, before



Person 1, after



Person 2, before



Person 2, after

Fig. 10: Patterns of saliva, after 3 minutes cell phone exposure at the ear.

f) Influence of music on blood

Two persons, Annette and Katharina, listened for half an hour to a kind of music. Afterwards, some of their blood was taken and patterns emerged from the drops of that blood. This procedure was repeated six times, each time with a different kind of music. The type of music was reflected in the blood, as can be seen below. In this case not the blood was directly exposed, but the signal proceeded through the body of the experimenters.

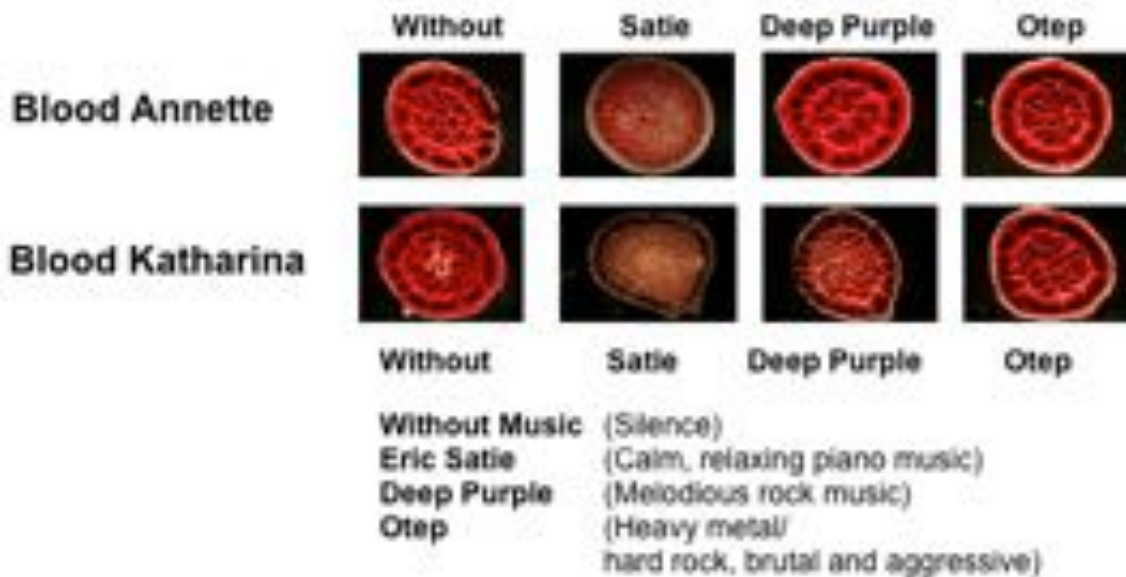
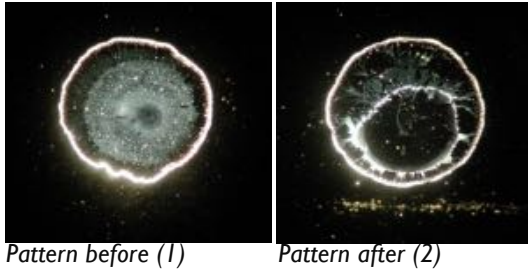


Fig. 11: Influence of music on blood as aqueous solution.²

Summary

The patterns created by the water, indicate that water is able to store and has a kind of (fading) memory. This indicates that any living system, which is able to read this information, e.g. by molecular resonance, might use it to enable or disable itself, apart from chemical effects.

As a proof, plants (water cress) have been watered with ordinary water or with water informed by ultrasound. The pictures below show the influence on the growth. The plants watered with the ultrasound water, grew significantly faster than the plants watered with ordinary water. This proves that the plants have been able to “read” the information of the water.



Pattern before (1)

Pattern after (2)

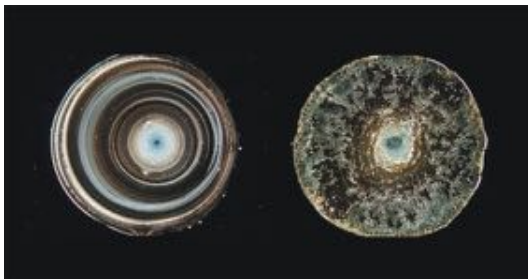


Water cress, watered with water (1)
and watered with water (2)

Fig. 12: Water without (1) and with ultrasound (2)

Information transfer via water

During our investigations we found by chance that a connection between the result of the investigation and the mood of the experimenter exists. For example, drops investigated under mental shock, show quite different patterns, (See Fig. 13)



(Left): Ordinary essence water pattern

(Right): Essence water pattern immediately after heavy shock

Fig. 13: Essence water before and after a heavy shock³

In order to prove the influence, we asked different experienced operators to make drops in parallel from the same water, at the same time in the same room, but separated from each other by more than 1,5 m distance. The several times repeated result was, that the same water showed reproducible results for each experimenter but different results with other experimenters. (See Fig. 14-a and 14-b)



Fig. 14-a



Fig. 14-b

Patterns of the same water. Each vertical row is from one and the same person. Individual persons cause different patterns from the same water, at the same time and the same place.⁴

This proves that communication over a distance must exist, because no experimenter was in immediate touch with the water. This gave rise to test whether a communication between water drops of different kinds of waters exist. Communication in this sense means an information transfer back and forth between two entities of water (e.g. droplets). The tests were applied to different kinds of water propped on an object plate with distance to each other. The result, given in Fig. 15 was, that some drops showed interaction via the distance and others not. Hence ability for communication of water across distances could be shown, which explains the sensitivity for homeopathic medicine, if this is only carried close to the body and not taken.



Left photo: Drops influence each other across a gap.

Right photos from above:

1 - reference water,

2 - reference water and river Ganges (no communication),

3 - reference water and essence Hongo Colorado (communication), 4 - reference water and artesian well (communication).

If the drops “exchange” across the gap, communication is assumed.

Fig. 15: Water communication⁵

The underlying picture

The idea that drives this research is to inspect the boundary between the material world and the nonmaterial realm, in order to find traces of information in matter. If a “cosmic intelligence” transfers information, we receive it through energy, form and matter. Therefore creation of form is an indicator for the transfer of in-formation. The droplets that we investigate are originally formless, but they are in-formed, which results in the formed patterns that we observe after drying. This process is so sensitive that the experimenter influences the forming process by his/her single presence, without even touching the drops. Hence the experimenter has to be treated as a variable in the experimental set up. We call this a subtle set up.

This gives rise to the assumption that the drop making experiment is comparable to a creative act that transfers information towards matter. The experimenter takes part in the creation of form out of the unformed, while performing the experiment.

To conclude

Watery solutions are obviously substances of a special kind. They store information, remember and forget, as can be shown by the patterns of dried drops and are able to communicate over distances. It seems to be the information backbone of our world and the knowledge about these features might change the understanding of the world substantially.

“Understanding the way water collects and transports information was seen as the essential step to find out the complex behavior and interaction of our organs”⁶, and the internal body control and steering mechanism of living systems. “Extracting and analyzing the information hidden in the water drops, will therefore allow scientists to find answers of many mysteries of our physical existence”⁷ and maybe mental existence. It will provide paths to investigate problems in medicine and life sciences through the dark field microscope to a new perspective.

This solely experimental investigation was undertaken as a starting point for further research and as a basis for hypotheses in order to gain assurance about phenomena that are often posted but never proven. Some out of the huge amount of results are presented. Our method is strictly experimental and science driven, based on observation, comparison of similarities and reproducibility. We only treated experiments in an ordinary, not extra clean environment, in order to avoid artefacts with unrealistic conditions. These sensitive phenomena require that the experimenters be treated as an external variable, to study their interaction with the results.

The results allow a phenomenological insight to a world of miracles and marvels, hidden to the naked eye. Often we felt that the creation of the patterns seems to come from unexpected nonmaterial sources and it would be a big adventure and challenge, to continue along these methodological mental and spiritual lines.

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SMRIM's Seven days Seminar on Yoga`sana based on Bio-psychology

On the occasion of International Yoga Day, Society for Microvita Research and Integrated Medicine (SMRIM), Udaipur (Raj.), India conducted a seven days Seminar on Yoga`sana at Ananda Marga Jagrti from 15th to 21st June, 2015.

The seminar was inaugurated by the chief trainer Ac. Lalitkrishnanada Av. and presided by Dr. S.C. Vashishta. The chief trainer, in his inaugural address, explained the common controversy prevalent in the society about Yoga and Yoga`sana. He stressed that Yoga is not equivalent to Yoga`sana. Yoga`sana concerns physical postures, based on their effect on various endocrine glands and sub-glands in the body. Yoga, on the other hand, is the unification of unit mind with the cosmic mind and that is possible by stepwise practical approach of physico-psycho-spiritual practice. Yoga`sanas help at the level of the physical (body) and the psychic (mind) preparing them towards spirituality, which ultimately unifies the unit mind with the cosmic mind.

The main speaker of the Seminar was Dr. S. K. Verma, the president of society. He said that human body is a biological machine, goaded by the propensive pulsation of the psyche. The mind (psyche) is guided or goaded by propensities, which in turn are controlled by the hormone secreted by endocrine glands in the body. Yoga`sana affect the secretions of endocrine glands, responsible for controlling the different propensities. Hence, by appropriate physical change (Yoga posture) the corresponding change in the psyche (psychology) can be obtained, provided the Yoga`sanas are practiced correctly and regularly, while following the directions given by experts. If not, Yoga`sanas may bring harm rather than good. He explained at length scientifically, the various rules, to be followed strictly while practicing Yoga`sanas.

The other subjects which were discussed in the seven days seminar were the science of breath, (*Svar Vijana*) and its relation with Yoga`sana, the types

of food and their effect on the body and mind, the precautions before & after Yoga`sana, the different types of food and their effect on the body and mind, the precautions before & after Yoga`sana, the different parts of Yoga and their stepwise practice. With great precision he refuted the prevalent misconceptions about Yoga.

Dr. Vartika Jain (Secretary of SMRIM) and I.S. Rathore (Member of SMRIM) organized the seminar. It was attended daily by 40-50 participants who practiced different Yoga`sanas under the guidance of the chief trainer.



Articles are invited for December issue
of BOMRIM



Share your personal interest!
Editors

To,

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WHAT ARE MICROVITA?

Microvita: *Micro* - Small, *Vita* - Living

Definition: Entities that come within the realm of both physicality and psychic expressions, are smaller than or subtler than atoms, protons or electrons and in the psychic sphere may be subtler than ectoplasm or its extra-psychic coverage, endoplasm, have been coined "Microvita" (singular: Microvitum) by Sri P.R. Sarkar.

Physicality: The position of these microvita is just between ectoplasm and electron, but they are neither ectoplasm nor electron.

Categories:

A) Based on density or subtlety -

First : Coming within the scope of a highly developed microscope.

Second : Not coming within the scope of perception but coming within the scope of perception as a result of their expression or actional vibration.

Third : Not coming within the scope of common expression but coming within the reflection of conception within the periphery of perception.

B) Based on their nature -

1.1 Crude negative microvita

1.2 Subtle negative microvita

2 Positive microvita

3 Neutral or Ordinary microvita

Movement:

- They move throughout the entire universe.

- They move unbarred, without caring for the atmospheric conditions or barometric readings.

- They move through one or more media, i.e. sound, form, figure, smell, tactuality or ideas.

- They will undergo contraction and hibernation at freezing temperature and expansion and hibernation at boiling temperature.

Root cause of life:

Microvita create minds and bodies and also destroy minds and physical bodies. The root cause of life is not the unicellular protozoa or unit protoplasmic cell, but this unit microvitum.

READERS

Suggestions/Comments/Articles are welcomed
E-mail: skvermaster@gmail.com

AIMS AND OBJECTIVES OF SMRIM

1. To propagate the knowledge and science of microvita by psycho-spiritual practice in individual and collective life.
2. To increase moral values, to generate scientific thinking, to remove dogma with the spread of knowledge of microvita at school, college and university levels.
3. To initiate and inspire about research on Yogic, Vaedic, Naturopathic, Ayurvedic and Homeopathic schools of medicine.
4. To incorporate faculties of Physics, Chemistry, Botany and Medicine for research on microvita and integrated medicine; including research on medical plants and Homeopathic medicines.
5. To organize free medical camps in villages and cities, involving specialists of different systems of medicine.
6. To publish results of the research in national and international journals and interact with other people working in the field in and out of the country.
7. To make judicious use of different systems of medicine and microvita for the treatment of diabetes, hypertension, heart diseases, cancer and diseases of the modern era.
8. To establish laboratory and research centers for relentless research on microvita and integrated medicine for the welfare of the entire humanity.

Who can join?

Any person interested in serving humanity through research on microvita and integrated medicine and abides the rules and regulations of the society, can become member of the society.

Lifetime Membership fee: Rs 2000/- (Once)

NOTE

With the issuance of ISSN the standard abbreviation of BOMRIM will be **Bull. Microvita Res. Integr. Med.**

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