



Glaci Ribeiro da Silva

CHRISTIAN RATIONALISM
AND EXPERIMENTAL SCIENCE

Volume 2

CHRISTIAN RATIONALISM
AND EXPERIMENTAL SCIENCE
VOLUME II

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Presentation

Volume 2 of Christian Rationalism and experimental science is the result of good reception of volume 1, by everyone who has read.

Based on years of experience accumulated in the academic environment, and on a simple and accessible language to any cultural level, as recommended by our masters, Glaci Ribeiro da Silva offers to the authentic spiritualism studios ten other subjects, associating, by her honorable medical vision, the secular Luiz de Mattos' Christian Rationalist philosophy, to the millenary medicine advances.

As she did in volume 1, well and wisely done, our dear author instigated us to reflection, by preserving in the beginning of each chapter of volume 2, epigraphs, Christian Rationalism quotations related to the reasoning developed in the proper text, some of them extracted from Luiz de Mattos' book *Pela Verdade: a ação do espírito sobre a matéria* (For the truth: the spirit's action over the matter), where he had alerted us to the mistaken focus of medicine when curing the psychic disturbance of people. The huge merit of the author is to meet our biggest master concern, offering another meticulous medical study to her readers.

Congratulations to Dr. Glaci Ribeiro da Silva for this new initiative.

GILBERTO SILVA

1. Homeopathy: revising concepts

FATHER AND SONS

Here is what sons generally think about their father:

- ❖ *at seven years old: - Daddy knows everything! He is a wise man!*
- ❖ *at fourteen years old: - I think daddy sometimes makes mistakes in what he says.*
- ❖ *at twenty years old: - The theories of my father are kind of obsolete. He is not from this epoch!*
- ❖ *at twenty five: - The old man doesn't know anything...He is really expiring...*
- ❖ *at thirty: - Maybe it's good to discuss this matter with my old man... Maybe he could make some advices.*
- ❖ *at forty five: - It's a pity my poor old man has died! Actually, he used to have a notable discernment.*
- ❖ *at sixty: Poor daddy, he was a wise man! I regret having understanding him too late!*

(Translated from a picture that my father had in his office)

Being a questionable person is not always a defect. Whoever contests previously analyzes the facts; not accepting them passively. The defect is this acceptance, because it denotes lack of maturity and personality.

But this previous analysis is not always done by the youths; for them, contestation is synonymous of rebelliousness that, although is not always healthy, is necessary to their auto-affirmation. The questioning of the youths is part of their passage rite to the world of adults. And the ideas severely defended by them, are not always kept during the maturity. The healthy attitude is to always revise them, keeping only the ones that pass through the sieve of the already matured mind.

In the Pharmacology classes (from Greek, *phármakon*, chemical substance used as medicament and, *logia*, study) that I had during my medical course, teachers put a lot of emphasis in the scientific demonstration, through an unquestionable logic (I will explain later on what is this logic), the total inefficiency of homeopathy therapy. This was widely emphasized during that epoch, because of the presence, among the students, of a sixty years old pharmacist lady, owner of a famous homeopathic pharmacy in Sao Paulo, who decided to study medicine.

My father was a doctor and his consultation room was located in the same house we used to live, in a district of Sao Paulo periphery. At that time, he did General Clinics, which means he was Generalist, as said nowadays. And, he used homeopathy several times, mainly for children treatment. And I, with typical teenager arrogance and prepotency, used to contest his conduct, all the time; but he used to smile and, calmly, keep on treating his little customers with homeopathy. He also used phytotherapy in his clinic, based on teachings that Christian Rationalism used to divulge in order to orient people with no access to medical treatment.

Recently, I did an analysis of those Christian Rationalism prescriptions based on today science.¹ In this text, I pretend to analyze homeopathy to revise my young and academic concepts; besides, I want to highlight possible contact points between homeopathic science and the Christian Rationalist doctrine.

I don't pretend to narrate all the medicine history, but to select from it the most important facts to show how the homeopathic science had arise. And, for that, we should go back to the past, searching in the Antique Greece the seed of this science modality. And we will find there the Hippocrates ideas.

Hippocrates (460-375 BC) was the founder of the school of Cos, in the island where he was born. He interpreted sicknesses within the specific and peculiar patient picture; for him, there were no sicknesses, but sick people; the defense reactions of patients were respected and he based his therapeutic on them.

Being an expert observer – essential quality of a good doctor – and, analyzing whoever looked for his help, he classified the curative principles that he used to cure the illnesses of his patients among three main principles:

1. *Vis medicatrix naturae*: this is how the Nature Force was called. This force would have the strength to operate the defense mechanisms of the organism (called immunologic system) with no exterior help. In this case, the doctor's behavior would be to wait, because the own nature would find the paths and ways to reestablish the missed balance (that is, the homeostasis)
2. *Contraria contrariis curantur*: here is found the base of medicament prescription which, in that time, started to be called allopathy; because of it, sicknesses was supposed to be treated by their contraries, their antagonists – the medicaments. The Hippocratic pharmacopeia was composed by more than 300 medicines, most of them vegetables, with purgative, emetic, diuretic, sweating and anti-inflammation properties, besides many others.
3. *Similia similibus curantur*: this was the base of homeopathy, where the treatment should be done with substances like the ones produced by the sickness. Much of importance was attached to the healthy alimentation, to the physical exercises, to the massages and to the baths, especially in the sea. As Hippocrates said, “by similar matters a disease arises and by administering similar things they regain their health from sickness; for instance the same causes stranguria² that wasn't there before, and when it is there, the same will make it stop; likewise coughing arises, like stranguria, and it stops by the same things”.³

Although the terms “allopathy” and “homeopathy” have been created by Samuel Hahnemann many centuries later as synonymous of *Contraria contrariis curantur* and *Similia similibus curantur*; in order simplify I will start to use them to replace the Latin expressions.

¹ SILVA, Glaci Ribeiro da. *Christian Rationalism and Experimental Science*. Available at <http://www.christian-rationalism.org/ebooks.html>.

² Latin word used in the old medicine that means sluggish urination, followed by pain.

³ Apud CERONI, Sheyla. *A historia da homeopatia*. See: A HOMEOPATIA E VOCE. Available at www.homeopatiagoiania.hpg.ig.com.br/saude/10/index_int_2.html. Accessed in February 2005.

Aristotle, was a disciple of Plato, and was considered the greatest Greek philosopher (however he was born in Macedonia). He was the first to recognize the unit body–soul. He said that all things tend to reach perfection, and have an active principle capable of conduct them to perfection.⁴ According to the followers of homeopathy this message denotes that even Aristotle believed in the Force of Nature.

Hippocrates was the initiator of medical clinics` therapeutic and foundation. Fairly, he is considered the “father of medicine”.

The Hippocratic influence persisted up to the time of Greece decadence. During all the time that Rome dominated the world, the medical science was stagnated because of the occidental philosophy of life, whose people were always more concerned about maintaining their territorial unit and increasing their domains.

In the Christian Age, emerged Galen (138-201) the first great medical personality of that epoch. Graduated by the Hippocratic tradition, he was the leader of the School of Knidos. He supported a much more elaborated philosophy and, despite the beliefs of Hippocrates, he conceived soul as somatic, belonging to the physical body, which means, material like it. Actually, Galen had philosophic conceptions and medical conduct completely opposite to the School of Cos. For School of Knidos School, there were sicknesses to e treated and, for the School of Cos, there were sick people, not sicknesses.

The Galen therapeutic was allopathic and its main characteristic was the multi-pharmacy, that is, drugs, medicaments and active substances usage. The Galen medical model persisted for fifteen centuries and was adopted by both Christian and Islamic doctors. The occidental Christianization, with its new conception of life and death and its cadaver consecration, resulted in almost total medical knowledge stagnation. This situation was kept unchanged up to the end of the eighteen century, after a meaningful change caused by the emerging of homeopathy.

Germany was the source of homeopathy, and its creator was Christian Friederich Samuel Hahnemann (1755-1843). He was a doctor and was born in Saxony, part of Germanic Empire of that epoch. Since childhood he exhibited a huge starving for knowledge; he was alphabetized by his father and received from him precious teachings, such as: - Never listen or learn without questioning. And more: - People should always think for themselves.

His father was against the continuation of his studies, because his family was poor; but, due to the exceptional capacity of the kid, his teachers were able to get his father authorization to him to keep on studying with a scholarship.

Hahnemann was very influenced by Pre-Christian philosophers, especially by Hippocrates, Plato and Aristotle. He also had an inclination for botanic, and that motivated his interests by the curative properties of many plants, later on.

During his medicine graduation, he imposed himself to study chemistry and microscopy, not part of medical curriculum of that time. He learnt languages very easily and, when he was twenty two, besides German, his mother language, he mastered Greek, Latin, English, French, Italian, Hebrew, Syrian, Arabic and Spanish. It was very useful for him, because it made him to translate many medical books to German, generating, then, a financial supplementation that helped him to sustain his eleven children.

Within this schema, Hahnemann translated, in 1790, the book *Materia Medica*. The author was the English doctor Cullen, who described on this book the main substances used in the medical practice, and tried to explain what these action

⁴ Idem. Ibidem.

mechanisms were. The way Cullen tried to explain the *Cinchona officinalis* – a plant used to control malaria - action mechanisms made Hahnemann very angry, so he decided to experiment this medicine himself. He got really surprised when he started to have a strong malaria fever outbreak! Ratiocinating about this strange fact, he concluded that it's possible that the same *Cinchona*, which cured malaria, can also artificially provoke it.

In order to test whether other active substances also had this same characteristics, he experimented himself, one by one, many drugs, such as belladonna, mercury, digitalis, opium, arsenic and more than thirteen other commonly used medicaments of that time. And his first results were confirmed: each experimented medicine provoked a sickness similar to the one it was originally prescribed.

Hahnemann also believed in the Hippocratic idea of the nature power of curing – the *vis medicatrix naturae*. He said: “The nature force frequently makes fast and beautiful cures (...). The serious sicknesses frequently resolve by themselves (...) this wonderful power of curing also accomplishes its self-defense on chronic affections”⁵

In 1796, Hahnemann published, in the most important German medical magazine of that time, an essay titled as “A new curative principle for ascertaining the curative power of drugs”. This fact was the official milestone of the beginning of homeopathy.

In this job, he recognized three methods to deal with human sicknesses:

1. removing or destroying what is causing them: this was, and still is, the greatest aspiration of any doctor;
2. removing the symptoms caused by them, using medicaments with opposite effect to them (Law of contraries); treating, for instance, stomach-acid with alkaline, pain with analgesics, fever with antipyretics, etc. All these medicaments are palliatives and the treatment is called by official medicine as “symptomatic”, because it only aims the symptoms; most medicaments produced by the pharmaceutical industry are of this kind. Hahnemann called them as “temporary medicines”; he admitted that they were used to minor patient suffering, but only until the diagnosis of sickness cause;
3. using medicament capable to produce a similar sickness to the one to be combated (Law of similars).

Hahnemann was the creator of homeopathy and allopathy terms to denominate the prescribing methods, according to the laws of similars or of contraries, respectively. These two words come from Greek: *homoion*, similar; *alloion*, different; and *pathos*, sickness.

Hahnemann became very intrigued with his discovery that an active substance used in gradually lower, attenuated, and diluted doses, has its curative power increased.

In the light of logic, is looked like a complete absurd! So he faced his discovery as a divine revelation. For us, spiritualists, this idea probably emerged by an intuition, fact frequently occurred by scientists.

Continuing his studies, he still verified that, besides attenuation, the medicinal powers had also grown with trituration and succussion (from Latin, *sucussione*, action of shaking). Hahnemann named these set of processes as “potentialization”, that is,

⁵ Idem. Ibidem.

making an active substance more potent for curing and less potent for damaging the organism.

What Hahnemann empirically deducted was nowadays known as “Law of Arnt-Schultz”, which, that time, had not been defined, yet. This law states the following: “The cell reacts to stimuli received according to their intensity: weak stimuli stimulate the vital activity; strong stimuli inhibit it, and stronger ones, destroy it.” The stimuli mentioned on this law can be of many types; in the medicaments case, they are chemicals.

The founder of modern experimental medicine – Claude Bernard (1813-1878) – was already aware of the law of the cure effect inversion, it was Hahnemann, in 1796, before Claude Bernard birth, who observed it and developed the methodology to use it.

In 1943, this phenomenon was named as “hormesis” and, because of this, it could be explained why toxic substances, in a very low concentration, can become anti-intoxicating. This fact had been already described by Hahnemann, who used it for poisons and toxins.

In 1955, it was demonstrated the influence of infinitesimal doses (infinitely small quantities) of sodium arsenate during the organic anti-intoxication process. In the same line of this research, it was published, during the 80s and 90s, jobs describing the decrease of morbidity and lethality produced by heavy metals, when laboratory animals were pre-treated with highly diluted solutions of these same metals.

Although contested by the official science, this anti-intoxication method is still part of homeopathy therapeutic arsenal, because homeopathic doctors have had success using it. And, as said in medicine, clinic is always supreme.

Homeopathy is basically built upon four principles:

1. similar cures similar;
2. only one active substance usage;
3. infinitesimal dose usage;
4. active substance potentialization.

The responsible of the major polemic of homeopathy acceptance by the medical community – constituted mostly by allopath doctors – is the third of these principles, that is, the infinitesimal dose usage.

The active substance used by this therapeutic modality – resulting in these minimum or infinitesimal doses – is so diluted that it is chemically impossible to detect a single molecule of this substance in the dilution.

And this is what I was referring in the beginning of this subject, when I mentioned the “unquestionable logic” my pharmacology teachers used to convince me and my colleges about the inefficiency of homeopathy therapy.

For the critics, homeopathic medicines are pure water and only work as a placebo. The homeopathy defenders assert that water is capable of memorizing whatever is dissolved by it. That’s the reason of the expression “memory of water”.

Many studies about water have been made, lately, and this line of research has been generated unusual and interesting discoveries. They have shown that homeopathic medicines are different from pure water and that successive dilutions, recommended by homeopathy, can generate aggregates of the already diluted medicine. And, according to some people, this aggregates or super-molecules would be the responsible for the therapeutic effect of these medicines. Besides, the existence

possibility of a second structure for water is also been defended by some researchers. More details about this subject can be found in the book *Christian Rationalism and Experimental Science*. (see biography).

During the 80s, the scientists Bernard Poitevin and Jacques Beneviste made many important discoveries in the homeopathy area. Poitevin, homeopathic doctor and researcher, proposed to Beneviste, a very respectful immunologist, to evaluate the biological activity of the great dilutions through laboratorial tests, commonly used in immunology.

This experimental job showed evidences of water memory and was published in 1988 by the prestigious magazine *Nature*. This publication caused much polemic and their authors were accused of doing pseudoscience. This resulted in the cancelation of budgets that Beneviste had to finance his researches, a truly catastrophe for any scientist. Only in 2001, the Beneviste reputation was again recognized by his partners, because it was considered that in his polemic article he had respected the necessary scientific rigor.

Recently, the existence of water memory was confirmed by the group led by R. J. Dwayne Miller. However, it was verified by scientists that the “memory” of the medicine in the water is very fugacious, lasting only 50 femtoseconds; this fact, in their opinion, would invalidate the homeopathic therapy, because one femtosecond is equivalent to one quadrillionth of second.

Because the water structure itself has only started to be studied recently, it appears to be perfectly possible that the parameter “time duration and memory efficiency” would also be something new in this field and, therefore, cannot be evaluated by parameters considered valid, so far. Within this context, it’s worthy to remember that, both in philosophy and in science, the basic concept of time was deeply modified by Einstein’s theory of relativity. Thus, even being the memory of a medicine in the water very fugacious, this might be enough to change it, making it a therapeutic agent, as the homeopaths assert.

The usage of fluidic water, recommended by Christian Rationalism, which had been very properly called as fluid-therapy by Antonio Cristovam Monteiro, might support the idea above. According to this author, the water structure would be modified by the fluids spilled by the Superior Astral during the process of fluidization, making it a real tonic for our physical body. Analyzing this subject in the chapter “Fluidic Water and its Secrets”, from the book *Christian Rationalism and Experimental Science*, we venture the hypothesis of being the immunologic system the target organ of fluidic water.

Water is a very important substance in our planet, and without it life would not be possible on Earth; it is also the most abundant substance in our body – one 70 kg adult has around 45 liters of water. Probably, changes in the water structure might exercise a tonic and even a therapeutic activity in our organism, taking hold of immunologic system as a tool to produce such effects. This would also explain the success of homeopath therapy in a child, because the hybrid content of a child’s body is greater than an adult one.

In the homeopathic conception, sickness is the result of changes in an energy pattern or “vital force”; this force is the base of all physical, emotional and mental phenomena; it is also individual, which means, vital force characteristics are different from individual to individual. The objective of homeopathic therapy is to stimulate the energy levels of a person.

According to Christian Rationalism doctrine, the Universe is composed by Force and Matter, where Force, or Universal Intelligence, is the vital element and the

creator of all the existing things. Every living body contains a fragmented particle of this Force, and uses it to perform its evolution, its ascension. Therefore, there are no identical beings in the nature, because the particle of Force that moves them, that gives them life and that incites them is individualized. This Force fragmentation can be well observed in the human being, and it's easy to notice that there are different categories of people, differing themselves by intellectual, mental and instinctive parameters, and also by habits, usages and practices.

Analyzing the last two paragraphs, it's not difficult to conclude that the Energy or the Vital Force of homeopathic philosophy is nothing else than the Universal Force. This is also the reason that homeopathic therapy needs to be individual, because every human being, according to its evolution level, has its own characteristics and expresses sicknesses in its particular way. Because of that, the known aphorism "There are no sicknesses, but sick people" is equally valorized by these two philosophies, the Christian Rationalist and the homeopathic one.

The doctor George Vithoukas was born in Athens (Greece) in 1932 and is now living in the Greek island of Alonissos. He started to study homeopathy in South Africa and continued his studies in many homeopathic institution of India. In 1967, he started to teach Athenians' doctors homeopathic medicine, which was an almost unknown subject of that time in Greece. In 1996, because his efforts to elevate homeopathy to the real science level, he received from Swedish Parliament the "Nobel Prize of Alternative Medicine".

Vithoukas is today the most articulated leader of modern homeopathic movement. He tried to identify the vital force described by Hahnemann with the electromagnetic field of the body, using the "dynamic plane" expression to indicate the fundamental level where sickness originates. His theory says that the dynamic plane is characterized by vibrations patterns, unique for each individual. Externals or internals stimulus affects the vibration rhythm of the organism, and these changes generate physical, emotional and mental symptoms. Vithoukas believes that each medicine is associated to a certain vibration pattern that constitutes its own essence. When a medicine is taken, its vibration pattern resounds with the patient's energy pattern and then induces the curing process. The resonance phenomenon seems to be fundamental in the homeopathic therapy, but what exactly resounds and how this resonance is caused have not been properly clarified, yet.

Since the beginning of the evolution process in a human body, the Universal Force particle receives the name of spirit, and this denomination is kept from that time on, during the entire evolutionary path. The spirit is light, is intelligence, is life, and is creator force. It is immaterial, because there is no matter in any of its states.

The spirit's intranuclear force expresses by vibration movements. This kind of movement generates concentric waves around its original point. A good example to illustrate this are the concentric circles formed when we plunge a stick in a bucket filled with water. Therefore, what Vithoukas calls dynamic plane of vibration, which is typical of every human being, is nothing more than the spirit itself. According to what will be exposed next, considering this premise based on Christian Rationalist doctrine principles, the action mechanism of homeopathic therapy can be easily explained.

The resonance phenomenon can occur when the frequency of a waving system (the homeopathic medicine) coincides with one of the frequency of another system (the patient spirit). After that, the energy transference from the first to the second system will take place. Thus, according to the Christian Rationalist concepts, the

action mechanism proposed by Vithoulkas for homeopathic therapy could be explained in a clear and logical way.

I could talk much more about this interesting and wide subject. But, after exposing these ideas and hypothesis, I am finishing here. Who knows that these ideas could be experimentally tested by opened mind scientists, who don't listen to the angry voice of the powerful pharmaceutical industry, the biggest enemies of the simple alternative medicine, practically exempt of collateral effects and that allows the user to take care of his health without expending fortunes. Researches of this kind might confirm what Antonio Pinheiro Guedes – the notable spiritualist doctor - said in the end of the nineteen century: “Medicine as arte of curing is the legitimate child of spiritualism”.

Bibliography

CAPRA, Fritjof. *O tao da física*. 28. ed. São Paulo: Cultrix, 1983. Espaço-tempo: p. 126-145.

CAPRA, Fritjof. *O ponto de mutação*. 24. ed. São Paulo: Cultrix, 2003. Holismo e saúde: p. 299-350.

CHAPLIN, M. F. Fiber and water binding. *Proceedings of the Nutrition Society*, 2003, 62: 223-227.

COGHLANY, A. Bizarre chemical discovery gives homeopathic hint. *New Scientist*, 7, November, 2001.

DAVENAS, E.; BEAUVAIS, F.; ARNARA, J.; OBERBAUM, M.; ROBINZON, B.; MIADONNA, A.; TEDESCHI, B.; POMERANZ, P.; FORTNER, P.; SELON, P.; SAINTE-LAUDY, J.; POITEVIN, B.; BENEVISTE, J. Human basophil degranulation triggered by very dilute antiserum against IgE. *Nature*, 1988, 333 (6176): 816-818.

GUEDES, Antônio Pinheiro. *Ciência espírita*. 8. ed. Rio de Janeiro: Centro Redentor, 1992. A origem da medicina. p. 25-30.

MILGROM, L. Icy claim that water has memory. *New Scientist*, 11 June, 2003.

MONTEIRO, Antônio Cristovam. Passes e sacudimento. *A Razão*, jornal mensal publicado pelo Racionalismo Cristão, janeiro de 2002.

PALESE, S.; BUONTEMPO, J.T.; SHILLING, L.; LOTSHAW, W.T.; TANIMURA, Y.; MUKAMEL, S.; DWAIN MILLER, R. J. Femtosecond two-dimensional Raman spectroscopy of liquid water. *J. Phys. Chem.*, 1994, 98: 12466-12470.

RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003. O espírito. p. 83-91.

SILVA, Glaci Ribeiro da. *Racionalismo Cristão e ciência experimental*. Cotia: Íbis, 2004. A água fluidificada e seus segredos: p. 21-28; O receituário do Racionalismo Cristão e a ciência médica atual: p. 105-118.

VITHOULKAS, George. *The science of homeopathy*. New York: Grove, 1980.

Internet Web sites about homeopathy, in Portuguese:

Sociedade Gaucha de Homeopatia

<http://www.homeopatia-rs.com.br>

Available in 06/04/2005

A homeopatia e voce

http://www.homeopatiagoiana.hpg.ig.com.br/saude/10/index_int_2.html

Available in 06/04/2005

Robert Toddy Carrol. *Dicionário do cético: Homeopatia.*

<http://brazil.skeptidic.com/homeopatia.html>

Available in 06/04/2005

Sociedade de Medicina e Cirurgia de Campinas: Homeopatia

<http://www.smcc.com.br/departamentos/homeopat.html>

Available in 06/04/2005

2. Cinderella of Immunologic System

The physical body is a wonderful piece of machinery conceived by Universal Intelligence to provide its operator - the spirit - with the means and elements necessary to take a post-graduate course on Earth. This course is meant to last numerous multiple incarnations, which are essential to its ascension to an environment of higher spirituality on a higher level of evolution. (Christian Rationalism book, available at <http://www.christian-rationalism.org/ebooks.html>)

Universe is a huge workshop, where spirits – individualized particles of Universal Intelligence – work and study, seeking for their evolution. One of the schools present in the Universe is called Earth. There, spirits attend to fundamental or basic course for their evolution; it accepts students from first to seventeenth grade and demands spirits to have a carnal body (or physical body) to attend it. The responsible for planning the physical body used in the “Earth School” is Universal Intelligence and they are build with material furnished by the own school.

Whenever a spirit receives a physical body, it is called “incarnated being” and the time interval of the physical body usage by the spirit is called “incarnation”. The longer is the duration of this physical body during each incarnation, the longer will be the available time to the spirit to perform its evolution; to make that easier and to defend it against the hostile environment of “Earth School”, the physical body is equipped with a set of specialized cells that shapes the immunologic immune system.

In order to everyone to understand who is Cinderella of immune system’s character, it will be needed to explain some preliminary concepts regarding this system. This will not be an easy task, because this system is very sophisticated, but I will do my best to explain it in a simple and very didactic way. So, let’s start!

The basic function of the immune system is combating invader microorganisms, but it also has other functions such as, for example, removing death cells to clean up the organism, eliminating ill-shaped cells, which the organism produces daily, avoiding then the formation of tumors, etc.

The immunologic system is organized as a real army, and its soldiers are the cells of the system; they are very specialized, which means that each kind of cell acts according to its function: receiving or sending attack or inhibition messages, immobilizing the “enemy” and introducing it to the immune army, attacking and directly killing the “enemy”, producing substances that neutralize the “enemies”, among others.

The cells of immune system are leukocytes, macrophages, and mast cells.

Leukocytes are made with a set of cells originated in the bone marrow (a connective tissue that fulfils the bones) and are part of the blood. This set is formed by five kinds of cells:

- neutrophils
- lymphocytes
- monocytes
- eosinophils
- basophyl

Macrophages are derived from monocytes – one of leukocytes. They become macrophages during the migration from the blood vessels to the tissues. Macrophages

are around ten times bigger than monocytes. These cells are capable of swallowing and digesting different materials and particles, which means, they practice a phagocytosis activity. This description justifies its name: *macro* means “big”, and *phages* “eater”. There are two kinds of macrophages: the fixed and the free one.

Fixed macrophages lodge in some tissues, where they start to reside. They possess dendrites – branched projections – in their external surface; that’s the reason they are known as dendritic cells. They receive different names according to the tissue they are located: histiocytes (connective tissue and muscles), Kupffer cells (liver), microglia (brain), alveolar macrophage (lung), Langheran cells (skin), etc. Although dendritic cells reside in the tissue, they migrate to an infection site, as soon as it appears.

Free macrophages traverse incessantly all the organism, seeking for things to devour; its appetite never ends – they are real “big eaters” and, opposite to neutrophils that die when they are full of the eaten material, macrophages regurgitate the material to continue to eat. Free macrophages are the garbage collectors of our organism: they devour sick red blood cells, exhausted neutrophils, peaces of death and ill-shaped cells, etc. Together with monocytes, free and fixed macrophages form a real net – the mononuclear phagocytic system – that is always ready to capture all strange material escaped from other traps.

Lymphocytes – another kind of leukocytes – are considered the noblest cells of immune system. They are small cells and they all look the same in the microscope. However, they possess different receptors in their membrane, which can be identified through markers. Thus, leukocytes can be differenced by many types and subtypes. There are two basic kinds of lymphocytes: T and B. They receive these names according to the predomination: T for thymus or B for bone marrow; they perform maturation on these sites.

Mast cells are not leukocytes, but connective tissue cells. They are involved in the inflammatory process and have a cytoplasm with many granules where they keep many mediators of inflammation, such as histamine, heparin, chemotaxis factors to attract neutrophils, etc.

There are two great divisions in the immunologic system army: innate and adaptive. Innate division is formed by privates and they work as sentinels or watchmen. There are two places where these sentinels are found: in the natural barriers of the body and in the nonspecific inflammation. The natural barriers of the body are the first line of defense of the innate division and, if its sentinels were defeat by the invader, a nonspecific inflammation – the second line of defense – is installed in the invaded site.

These natural barriers are strategically present wherever the body might be invaded. The organism has many of these barriers, such as the keratin, lipids and fatty acids in the skin, the saliva in the mouth, the hydrochloric acid in the stomach, the acid pH in the vagina, the wax in the outer ear, mucus in the mucous membrane and in the respiratory system, cilium in the respiratory epithelium, the normal bacteria flora in the vagina and in the intestines, etc.

The nonspecific inflammation is a very useful process in the body defense and it should be faced as it is. Its final objective is to prevent from infection to advance, isolating germs into a fibrin – whitish and insoluble protein – cover.

The inflammatory process starts when the mast cells of connective tissue release substances from its cytoplasm that dilate the arteriole of this region and also attract neutrophis and macrophages to the affected area. The liquid escape produces

edema (swelling) and the dilated arteriole leads to redness, to local temperature increase and to pain.

All inflammatory events are endowed with a meaning: the temperature increase in the inflamed site makes microorganism proliferation difficult and stimulates the migration of neutrophils and macrophages that will embody and destroy the invasion agents. Some substances released in the inflammation site reach the thermoregulatory center located in the brain (hypothalamus), increasing the body temperature and producing fever. Despite indisposition and discomfort caused by fever, it is also an important factor combating infections, because besides being unfavorable to the survival of invasion microorganisms, it also stimulates many of the defense mechanism of the body.

If the innate division were unsuccessful in its mission of containing pathogens, the cells of adaptive division – officers from this army – show up to organize a sophisticated attack that is aimed to the invader, which means, this division is specific. This immunologic response is called adaptive because, during an infection, it adjusts itself to the microorganism that is responsible for the sickness.

Until around five years ago, adaptive division was the main actress of immunologic system's show. All holophotes were focusing it; books and articles about immunology were full of details about B cells, with its antibodies attached to antigens (specific proteins located on the surface of a pathogen); and about T cells and its receptors, capable of recognizing fragments of pathogenic proteins.

Adaptive immunity also attracted attentions because it is capable to create an “immunologic memory”. After infection, B and T cells stay close to the site where it has occurred, preparing the body to repel new attacks. This capacity of recalling past infection allows vaccines to protect us, exposing the body to an inactive form of the pathogen. The immunologic system, though, reacts as this exposition were a true attack, generating protective cells with immunologic memory.

Cinderella of immunologic system was, therefore, the innate division, because it looked very monotonous when compared with adaptive. Its components, antibacterial enzymes of saliva and the called “complements” – bloody proteins that destroy bacteria – looked much less sophisticated than antibodies and T cells.

When rejecting the innate immune response, for being boring and uninteresting, the immunologists were, actually, trying to hide a little secret: the adaptive immunologic system doesn't work in the absence of an innate response. The innate immunologic system is the one who produces signaling proteins, called cytokines, that not only induce unspecific inflammation, but also activate B and T cells. As can be seen, the elegant sister needs help from Cinderella – its single and discrete relative – to shows its magnificence...

Dendritic cells, described earlier, are part of innate division of immunologic army. They are relatively rare: constitute only 0.2% of white blood cells and are even scarcer in tissues like skin. Dendritic cells were identified in 1868 by the German anatomist Paul Langerhans, who, wrongly thought it were nervous terminals of skin. Almost one century later, they were rediscovered in the spleen of rats by the scientist Ralph Steinman, from Rockefeller University, who recognized them as part of immunologic system. Steinman also denominated them as dendritic cells, but these same skin cells are still being called as Langerhans cells.

Twenty more years passed until scientists get to isolate and obtain big quantities of dendritic cells in order to be possible their laboratory study. Nowadays, there are many research groups involved with the study of these cells and public interest on them are becoming higher every day.

Immature dendritic cells install themselves in the skin, in the mucous membrane and in organs such as lung and spleen. They have a huge variety of mechanisms to capture microbes that try to invade the body: using the cup-shaped membranes to arrest invaders and withdraw from them microscopic amount of their surrounding fluid; producing a substance called *interferon-alpha*, which immediately eliminates certain virus; etc.

After devouring invaders, immature cells divide them into fragments – known as antigens – and then, they can be introduced and recognized by the rest of immunologic system. In order to distribute antigens on their surface, cells use molecules shaped like fork to arrest them between their prongs. These molecules are called major histocompatibility complex (MHC).

While processing antigens to do their introduction, they travel through the blood up to the spleen – one of the immunologic system organs – or, through a clear fluid, the lymph, to the lymph nodes. Arriving in the destination, they complete their own maturation and introduce their MHC molecules, full of antigens, to T-auxiliary cells that are called T-naïve, because they have never been in touch with antigens. Dendritic cells are the only ones capable to instruct T-naïve cells to recognize antigen as something strange and dangerous.

After instructed, T-auxiliary cells have B-cells produce antibodies that connect to antigens and deactivate them. Dendritic cells and auxiliary cells can also activate T-killer cells, which can destroy bacteria or cells infected with virus. Some of T-cells educated by dendritic cells transform themselves into “memory” cells, remaining in the body for years, or even decades, ready to act if the invader gets back.

The description exposed above shows, in a schematic and simplified way, an immunologic reaction such as it is described today, with the dendritic cells role properly recognized and valorized. And, it is not necessary to use a lot of imagination to verify how an immunologic reaction is similar to the tactics used by policemen when facing criminals. The impression is that these cells ratiocinate and act intelligently, justifying then the name “brain of the body” that has been given to the immunologic system.

Although it looks like immunologic and central nervous systems have a very different organization, they are similar in many aspects. Both have a very similar structural project, with *sensorial elements* to receive information from the environment and from the body, and with *motor elements* that execute the proper response.

These two systems also communicate themselves through chemicals mediators. For instance, electrical signals that traverse nervous paths and are converted into chemical signals in the synapses that separate neurons and these chemical substances can act as signals for the immunologic system. On the other hand, chemical messengers that immunologic cells produce are used both as communicators within the own immunologic system and as connectors between this system and the brain and the nerves.

One of the biggest discoveries of contemporaneous immunology is that leucocytes produce small proteins, capable to indirectly coordinate responses from immunologic system when combating pathogens. So, interleukin 1 protein (IL-1) is produced by monocytes. This is the beginning of the elegant cascade responsible for immunologic response, because, acting over linfocytes, IL-1 generates IL-2, which is responsible for linfocytes maturation. Some of these mature linfocytes –plasmocytes – produce antibodies to combat infections, while others –cytotoxic – directly kill the infectious agent.

It was believed the main function of interleukins were the communication between (“inter”) the white cells of blood (“leucines”). But they also act as chemical signals between immune cells and other kind of cells, including the brain. That’s the reason to use, nowadays, the term “cytokine” instead of “interleukin”, to designate biologic molecules used by different kind of cells to communicate each other. A cytokine can both stimulate and inhibit a response, allowing the immunologic system to choose the most appropriate action to stabilize the local environment and to maintain homeostasis.

This intimate relation between the brain and the immunologic system could be easily explained having the Christian Rationalist doctrine as basis. So, if we imagine the physical body as a computer (therefore, a machine, just like scientific spiritualism affirms) and the spirit as its user, the brain would work as a keyboard and each region of the brain would be a key that, when pressed by spirit, would send its orders to the computer to execute them.

In order to do its evolution course in the “Earth School”, the spirit depends on its physical body and, because of that, it has a direct and express connection with the army (immune system) in charged of defending and taking care of its maintenance (homeostasis). And all divisions of this army are equally important, even those that up to recently were considered a single Cinderella by scientists...

Bibliography

AMORIM, José. *Energia programada: A mecânica do perispírito*. 4. ed., Rio de Janeiro: Centro Redentor, 1996.

BANCHEREAU J.; SCHULER-THURNER B.; PALUCKA K.; SCHULER G. Dendritic cells as vectors for therapy. *Cell*, 106: 271-274, 2001.

KLEIN, Jan. *Immunology*. 2. Ed. Boston: Blackwell Scientific Publications, 1991. Blood cells and their origin: p. 8-28.

MEDZHITOV R.; JANEWAY, Charles. Innate immunity. *New England Journal of Medicine*, 343: 338-344, 2000.

RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003. A encarnação do espírito: p.95 -113.

On the Internet:

e-book of Immunohaematology: <http://www.angelfire.com/journal/imuno/>

Available in 08/05/2005

3. Cancer, a malign predator surrounded by myths

*It isn't insolence to affirm that materialism is an incomplete knowledge, a decrepit system that selects, deliberately, only facts it judges it is able to explain by atomic and molecular combinations, by exclusive action of mechanical forces, and by physical-chemical laws. (translation of ALBERTO SEABRA, at *A alma e o subconsciente*, cited by LUIZ DE MATTOS at *Pela Verdade: a ação do espírito sobre a matéria*, 7.ed., 1972, p.84)*

Up to recently, talking about cancer to non-expert public was a real temerity. Cancer was a very bad taste subject and should be restricted to doctors and medicine students; it was a social taboo and many euphemisms were used to avoid even the own word. This sickness, considered an inscrutable disease, was surrounded by stigmas; the worst of it was the one that equaled it to the assured death.

When talking about someone who had cancer, the tone of conversation used to change, an uncomfortable silence used to take place, people even used to look somewhere else – all this indicating the expectative of death. The own doctors used to prefer hiding this terrible diagnosis from their patients and they used to disclosure this terrible true only – and very formally – to relatives. This entire panorama has created real myths around this disease; myths that were very similar to the ones that also surrounded tuberculosis. Tuberculosis was only demystified when medical science got to discover its etiology and, consequently, had proper resources to cure it. And this will also certainly happen to cancer.

Cancer is the result of genetic mutations induced in cells due to many factors, such as virus, radiations, chemical substances, etc. Tumor cells are fragile and different, both in the aspects and in the behavior these cells had before their transformation. The essential difference resides in the major capacity mutant cell has of multiplying themselves, comparing to normal cell.

Normal cells have a communication mechanism that avoids its excessive and disordered reproduction. By ignoring this mechanism, malignant cells become invaders, blocking its well-functioning source organ and exercising pressure over their neighbor organs, occupying more space, gradually. In the most severe forms of cancer, these malignant cells separate themselves from the original mass and are brought through blood circulation to other parts of the organism, where they start to originate new tumors. This separation and the cells transport are called metastasis (from Greek: displacement).

Disclosing the cancer roots has been for a long time the main target of many scientists around the world. And the number of possible villains that causes this disease – the called *carcinogen* or *carcinogenic agents* – is increasing day by day. These villains keep, actually, a straight connection with cancer, but they don't seem to be the basic cause of this disease, because, although most part of world population are exposed to carcinogens, only a small minority have cancer as consequence.

Nobody contests cancer is, basically, a DNA disease; there are, however, many theories trying to explain it. Information generated by the Human Genome Project, in 2000, contributed a lot to the comprehension of the development mechanism of cancer. So, it is known that it is not a unique disease, but a set of them, which have common characteristics and, probably, different causes. Thus, talking about this

disease, as singular, is an imprecision, because, according to the World Health Organization, it has been indentified and classified many kind of this pathology.

When assumed by science, the Descartes' dichotomy that divided nature into two realms – mind and matter -, scientists started to develop researches and elaborate theories about the mind (or the spirit), in the called human sciences, and about physical body (or matter), in the natural sciences, realm that include, among other areas, medicine.

Almost one century ago, the effects of this dichotomy were critically analyzed by Luiz de Mattos in his book *Pela Verdade* (For the Truth): the action of spirit over matter. And during that time, this great spiritualist master, who was the codifier of Christian Rationalism doctrine, intended to alert doctors and researchers to the mistake they were committing when interpreting facts and creating extravagant theories, having as basis only the physical body and setting aside the mind – the most important part of human being.

The price we pay for being in the time of great specializations is that, usually, people working over the same problem, but in different areas, exchange few information about it. Each area of study has its own jargon (its specialized language), its own values and communication methods; the result of that is the loss of important information, because there isn't an efficient interchange of the already done discoveries.

More than 2000 years ago, the connection between cancer and emotional states had already been observed and described by many doctors and investigators. One of the oldest publications about this subject is *De tumoribus* (from Latin, *About tumors*), a job written by Galen, the famous Greek doctor.

In 1863, Claude Bernard focused this subject again in his classic discourse *Experimental Medicine*, where he emphasized that human being must be considered harmonic as a whole; and even a specific analysis of its parts been necessary, the relations between all of them must be always taking into consideration.

In spite of apparent agreement between specialists at the end of 19 century and beginning of 20 century regarding the narrow connection between emotional states and cancer, the interest dissipated during the arising of anesthesia, the development of new surgery procedures and radiotherapy. The success of these physical therapies fortified a lot the point of view of the majority of doctors: *physical problems can only be solved with some sort of physical treatment*.

On the other hand, at that time, doctors started to face emotional tensions as unavoidable; and according to them, even these tensions had an important role for the appearance of cancer, they couldn't do anything (!!!), because they didn't have proper physical instruments do deal with emotional problems.

One of the ironies of medicine history is that when psychology and psychiatry started to develop methodologies and instruments to test the connection between emotional states and cancer, medicine had lost its interest on this subject much earlier.

The result of this is that, today, there are two different focuses, both in literature and in investigations about cancer:

- psychology jobs describe the relation between emotional states and cancer, but they can't always explain it through psychological mechanisms;
- medical literature is well-grounded in physiopathology, but, by not knowing or not considering the information divulged in the psychology jobs, it appears as incapable to explain many observed occurrences of

the disease, such as: “spontaneous” cures and big discrepancies in the way patients react to the treatment, because even exposed to carcinogens agents, many people don’t develop the disease.

Emotions and feelings are intimately connected to *sensibility* – one of the attributes our spirit has to feel the vibration current from the environment. The own term “emotion” (from Latin, *e* + *motion*, to move, to go away) already has, implicitly, an immediate action itself. The relation between emotion and immediate reaction is very explicit on children. But, an anomaly is frequently detected in the civilized adult person: its emotions - instinctive impulses for action – are divorced from its obvious reaction. And, most of the times, these inadequate responses to emotions, mainly to those painful and unpleasant ones, unchain the stress.

An important route that connects emotions to the immunologic system is the influence that hormones released during stress have over our natural defense system. During stress, a secretion of many endogenous substances, such as catecholamine (adrenaline and noradrenalin), cortisol, prolactin and natural opioid (beta-endorphin and enkephalin) is stimulated. Each one of these substances exercises a strong impact over immunologic cells and, through complex reactions, ends up obstructing its functions of destroying malignant cells. Stress ruins the immunologic resistance: if it is short, its inhibition would be temporary, but, if it is constant and intense, the inhibition would become long, which means that there would be a suppression of immune system. Without its natural defense, the organism would easily succumb to all kinds of aggressions; even to those identical to the ones that were successfully repelled when the immune system were healthy.

Nevertheless, it’s not the presence of stress – considered a typical syndrome of civilized world, where it’s difficult to escape – but it is the way someone reacts to it that makes the difference both to cancer to manifest, and also to positive or negative evolution of the disease itself.

The full functioning of the organism’s natural defenses is important to cancer prevention; but it’s even more important to know how to maintain the immunologic system alert and healthy when the disease has still not manifested. This was a subject of a Superior Astral communication in 2003 - translated below - from Augusto Gomes da Silva, the founder of Campinas’ Christian Rationalist Filial, in Sao Paulo, Brazil, and up to recently, its Astral President.

Not always the physical body maintains itself healthy. However, if commanding this physical body there were a strong spirit, this body would lose its fragility because it would know how to fight and win a serious disease whenever it appears. It is important to know how to face a misfortune with serenity, calm and good mood, if it is possible. Lamentation or feeling of defeat will not help. On the contrary, it is necessary to conduct a normal life, to get properly fed and to have elevated thoughts.

Chemotherapy offered to patients with cancer, source of huge profits for the pharmaceutical industries, is *aggressively cytotoxic* and *unspecific*, because it only aims to destroy cells with high potential of division, like cancerous cells. Some normal cells have, however, this same profile; and its most visible example to confirm that is the chemotherapeutic effect over epithelial cells, producing hair loss that classically occurs when patients with cancer are submitted to this kind of drastic treatment.

Although hair loss is the most visible negative collateral effect induced by chemotherapy, it is far away from the most serious effect. The biggest tragedy originated from the usage of these devastating drugs is the destruction of lymphocytes, which are one of the most important cells in our immunologic system and, likewise epithelial cells, they also have high potential of multiplication.

The ideal chemotherapy should have low toxicity and be combined with immunologic treatment, having as objective both to vaccinate the person against the return of tumor, and also to increase his basal defenses.

This new focus on cancer therapy might become reality soon, because scientists are transforming the important and just acquired knowledge about the role dendrite cells execute in the immunity against microbes and toxins to a strategy to combat cancer.⁶

What matters now is to improve the method and to test it on a bigger amount of patients. Vaccines against cancer based on dendrite cells have been only tested on patients with an already advanced stage. But, although researchers believe that patients with an initial stage of cancer could better respond to the therapy – because their immunologic systems have not tried to eradicate their tumors – it is needed to consider, first of all, that these vaccines can induce the immunologic systems of patients to attack healthy tissues by mistake.

These are, however, projects for the future – hopefully near future. Therefore, knowing to administrate emotions correctly and to early detect the pathology are still the main weapons against cancer.

Bibliography

COURTNEY, J.C. et al. (1993). Stressful life events and the risk of colorectal cancer. *Epidemiology* 4 (5), September.

EKMAN, Paul; DAVIDSON, Richard. *Fundamental questions about emotions*. New York: Oxford Press, 1994.

GOLEMAN, Daniel. *Inteligência emocional*. 74. ed. Rio de Janeiro: Objetiva, 1995. A emoção na clínica médica: p. 179-200.

MATTOS, Luiz de. *Pela verdade*. 9. ed. Rio de Janeiro: Centro Redentor, 1983. A medicina moderna precisa ser completada: p. 92-94.

RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003. O espírito: p. 84-91.

RABIN, B.S. et al. Bidirectional interaction between the central nervous system and the immune system. *Critical Reviews in Immunology*, 9: 279-312, 1988.

SAMEL, Caruso. *Reflexões sobre os sentimentos*. 3. ed. Rio de Janeiro: Centro Redentor, 2003. Introdução: p. 13-16.

SILVA, Glaci Ribeiro da. *Racionalismo Cristão e ciência experimental*. Cotia: Íbis, 2004. O cultivo do bom humor: p. 37-43.

⁶ More details can be found on this book at “Cinderella of immunologic system.”

4. Medical science facing the new spiritualist age

*We, who are incarnated, belong to last generations of an age that are extinguishing, in order to start a new age that is getting close, full of hope, spiritual conquests and consequently new adventures. (translation of Luiz de Souza, at *Ao encontro de uma nova era*, 8. ed., 1995, p. 16.)*

The epoch we are living is mentioned as scientific age, and the occidental culture is very proud of that. It is dominated by the rational thought and, very frequently, the only sort of knowledge considered acceptable is the scientific one. This kind of attitude is known as “scientism” and impregnates both our educational system and the social and political institutions.

Rational and intuitive are complementary ways of human mind functioning. The rational thought is linear and analytic. It belongs to the intellect realm, whose functions are to discriminate, to measure, and to classify. It tends, then, to be fragmented. Nothing has changed more our world, during the last four hundred years, than this scientists' obsession with measuring and quantification. Now, the intuitive knowledge is not necessarily intellectual, because human being is capable of acquiring it through intuitive mediumnity.

The intuitive wisdom is typical of traditional and non-erudite cultures, and its cultivation in our culture has been neglected little by little to give occasion to the rational thought. Today, this separation manifests itself in a flagrant disparity on the one hand between the development of intellectual power, the scientific knowledge and the technologic qualifications, and on the other hand between wisdom and spirituality.

The rational thought in our culture is called as Cartesian, because it is based on the ideas of the founder of modern philosophy, René Descartes.

René Descartes was a brilliant mathematician and this fact influenced a lot his philosophic ideas. He believed that the language of nature – “that great book which ever lies before our eyes” – was mathematics. In order understand nature science, he developed a new method of reasoning and described it in his most famous book, *Discourse on Method*. Although this book has become one of the great philosophical classics, its objective was not to teach philosophy but to teach science, as is evident from the book's full title: *Discourse on the Method of Rightly Conducting One's Reason and Searching the Truth in the Sciences*.

The crux of Descartes' method is radical doubt. He doubts everything until he reaches one thing he cannot doubt, the existence of himself as a thinker. Thus he arrives at his famous Latin statement, *Cogito, ergo sum* (I think, therefore I exist). So, Descartes concluded that to think and to have the consciousness of thinking define the human being and that the essence of human nature resides in the thought.

Descartes' *cogito*, as it has come to be called, made the mind (or the spirit) more certain for him than physical body and led him to the conclusion that the two were separate.

Descartes based his whole view of nature on this fundamental division between these two realms: the mind (*res cogitans*) and the matter (*res extensa*) which he considered to be only a machine. For Descartes, mind and matter were the creations of God (or Universal Intelligence) because, for him, the existence of God was essential to his scientific philosophy.

Descartes is mentioned in the book *Christian Rationalism*⁷ and some of his ideas are included in the Christian Rationalist doctrine. These ideas were probably introduced on this book by Luiz de Mattos – the founder of Christian Rationalism.

Nevertheless, in subsequent centuries, scientists omitted any explicit reference to Universal Intelligence (or God) and developed their theories according to the Cartesian division, the human sciences concentrating on the mind and the natural science on the physical body.

Scientists were the responsible for that wrong decision; however Descartes was later on accused of failing. And this was formally done in 1994 by the Portuguese neurologist Antonio R. Damasio, on his book *O erro de Descartes* (The Descartes' mistake). Decades before this book has been published, both its author and many other scientists had realized that mind exercises a great influence over the physical body.

But Descartes was much less “Cartesian” than most of the doctors are today, because, despite defending the separation of body and mind, he considered the interaction between both of them as an essential aspect of human nature. He was also perfectly aware of the implications that body-mind interaction had in medicine. So, whenever someone asked him for help and described him the physical symptoms of the illness, he analyzed them and most of the times concluded that the main source of the problem was the emotional tension or the emotional stress, as its common to say today.

Perhaps, it would be correct to say that the called “Descartes' mistake” originated from the fact he didn't know the existence of life beyond matter, which concept has been taught since 1910 by Christian Rationalist doctrine.

These Descartes' conceptions had a decisive influence in the development of human sciences, but they also limited the direction of scientific researches. The problem is that scientists, encouraged by their success of treating living organisms as machines, started to believe that they *are nothing more* than machines. The most serious consequences of this way of thinking were harmful especially on medicine, because they negatively interfered with doctors to accept the spiritual nature of many pathologies.

In the medical area, the wrong usage of Cartesian philosophy has lasting a lot and causing, therefore, huge loss for public health. So, three centuries after Descartes, medicine is still based on notions such as body as machine, sickness as damage on this machine, and doctor as repairmen of this machine.

Rational and intellectual has predominated in the “scientific age”, so the progress of humankind has been unilateral. And this unilateral evolution is hitting now an alarming stage, so paradoxical that it nears the insanity: the medical science and the pharmaceutical industry are endangering our health and the department of defense of the leading country has become the biggest threat to the world security!

The Earth has gone through many transformations and mutations cycles and, now, we are living one of these mutations. Two years ago, Jesus, who was endowed with huge discernment, had already foreseen that world, before the end of second millennium, would go through fundamental transformations.

In the 70s, this fact was focused by Luiz de Souza in his excellent Christian Rationalist book *Ao encontro de uma nova era*. And, later, this same subject was also

⁷ CHRISTIAN RATIONALISM. Rio de Janeiro: *Christian Rationalism*, Chapter I, available at <http://www.christian-rationalism.org/ebooks>.

analyzed in the book *The Turning Point*, writing by the Austrian Physician Fritjof Capra.

In the last decades of twenty century, a spiritualist wave started to be spread over the world, getting stronger and stronger, making many people call the age we are living as “spiritualist age”, because its main characteristic is the spiritualist ideas.

This renewing blow has also reached doctors and scientists of health and biological science area.

Thus, although materialism still predominates among the majority of these professionals, most of them have already demonstrated certain spiritual maturing, making them to better comprehend the actual reality. They are the ones who were hit by this new breeze and indelibly marked by it.

From that, a happy and profitable partnership arose between scientist, who had only studied the material body, so far, and psychologists and psychiatrics, who had dedicated themselves to the study of the mind.

This union has generated different groups of important and already respected scientists world-wide. The objective of these groups has been to demonstrate that spiritual disorders are the main cause of most emotional disturbs and also the main cause of physical problems originated from them.

Within this new mentality, new and very promising branches of science have arisen, such as psychosomatic medicine, psychobiology, psychoneuroimmunology, etc.

The objective of psychoneuroimmunology is to scientifically study the interaction between mind (*psycho*), neuroendocrine system (*neuro*) – that include nervous system and hormonal system – and immunologic system (*immunology*).

The immunologic system is one of the most complex systems of our organism and, thanks to these fundamental and recently done studies, we are able to learn a lot about its operation.⁸

New molecular and pharmacological techniques allowed the identification of an intricate network connecting the brain to the immunologic system – called by some people as “the brain of the body”. This important circuit allows a fast and continuous sending of signals between both systems. Chemical substances produced by immunologic cells send signals to the brain, which sends chemical signals to control the immune system. These are the signals that are continuously exchanged between the brain and our defense system, and that explain how the emotional condition influences the health.

This biological signalization also affects response of the organism to stress, that, when chronic, is capable of totally inhibit the immunologic system, leaving, then, the organism totally unprotected.

Only recently, stress was recognized as the cause of a great number of sicknesses and disturbs. But the link between emotional conditions and sickness, although known since Ancient Greece, still receives little attention by part of medical group.

The studies done by psychoneuroimmunologists have been the main responsible for bringing on the surface and revalorize the important role that the mind (the spirit) develops in the sicknesses. This was a conviction that existed since the beginning of medicine and was naturally accepted by doctors and patients, but it was gradually abandoned in the scientific age. The cause of its abandonment was both the Cartesian division assumed and rigorously defended by scientists and also the huge

⁸ More details can be found on this book at “Cinderella of immunologic system”.

financial power exercised by the pharmaceutical industry together with the medical group, using their increasing production of medicaments – the “magical candies” that doctors use to “fix” the human machine...

In order to medical science be properly prepared to meet this new age already started, it is important that its scientists bring with them, a nice spiritual patrimony. But, because the evolution is compulsory and is part of the unchangeable and irrevocable laws that rule the Universe, the representatives of medical science – simple particles evolving in this physical world – won't be the ones who will oppose to the empire of these laws. Therefore, we can be sure that, in the future, the materialism that predominates on this group will be replaced by a proper spiritualist experience.

Bibliography

CAPRA, Fritjof. *O ponto de mutação*. 24. ed. São Paulo: Cultrix, 2003.

DAMÁSIO, António R. *O erro de Descartes: emoção, razão e o cérebro humano*. 11. reimpr. São Paulo: Companhia das Letras, 1996.

DIXON, Bernard. *Além das balas mágicas*. Trad. de Margarida D. Black. São Paulo: T.A. Queiroz/ Edusp, 1981. O domínio da matéria pela mente: p. 88-116.

RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003.

SCIENCE OF MIND-BODY: an exploration of integrative mechanisms.

<http://videocast.nih.gov/PastEvents.asp?c+1&s+51>

Available in 11/12/2004.

SOUZA, Luiz de. *Ao encontro de uma nova era*. 8. ed. Rio de Janeiro: Centro Redentor, 1995. Ao encontro de uma nova era: p. 15-20.

SPINELLI, Miguel. *Filosofia & ciência: análise histórico-crítica da filosofia de Pitágoras a Descartes*. São Paulo: EDICON, 1990. Descartes e a transformação do conceito de filosofia: p. 267-335.

THE BIOLOGICAL BASIS for mind and body interactions. Org. by Mayer and C. B. Saper. *Progress in Brain Research*, vol. 122. Elsevier Science, 2000.

WEBSTER, Jeanette I.; TONELLI, Leonard; STERNBERG, Esther M.. Neuroendocrine regulation of immunity. *Annual Review of Immunology*, v. 20, p. 125-163, 2002.

5. The Mind and the Brain

When will scientists stop searching the mind in the labyrinths of the brain?

The Universe is composed of Force and Matter. Force and Matter summarize, synthesize and define the whole Truth of life. (...)Force is the active, intelligent, transforming agent. Matter is the passive, pliable element. (..)Matter has no attributes. Attributes are characteristics of Force (...). (Christian Rationalism book, Chapter "Force and Matter", available at <http://www.christian-rationalism.org/ebooks>)

In the 90s, the investigations about the human brain had a huge advance; this epoch was called "The brain decade". These studies were stimulated by the emerging of sophisticated techniques and non-invasive methods of analysis, such as images obtained from functional magnetic resonance (fMRI) and positron emission tomography (PET). These high technologies are also being used by medical clinics.

Using this kind of methodology, in that decade, scientists started to successfully reveal the intricate electrical impulses and the chemical substances that neurons from the brain used in their communications – the called neurotransmitters.

Our brain, with around on hundred billions of neurons and weighing around 1.3 kg (2.9 pounds), is the most complex organ in the body. Helped by the spinal cord, its function is to supervise all operations of our organism.

After interesting results obtained from the use of these techniques, many scientists filled enthusiastic and challenged to ransack the brain`s maze, searching for something that, for them, is still an enigma – the mind.

The questioning about the mind is not a new fact in science and, one way or another, people have been doing it for centuries. But it could only be intensified when it become possible to do it without being dead in the fire by Inquisition. Different kinds of researchers, such as neuroscientists, cognitive scientists, physicians and philosophers have been, and still are, the main questioners of this subject.

Most of them don`t know about incorporeal life, so, for them, it has been a challenging but discouraging quest, because, although science knows more and more about the brain`s functioning, the mind is still undiscovered...

Many kinds of researches have been organized in order to solve this enigma. Their main objective has been to find answers to many questions, such as:

- What the human mind is, after all, and how could it be scientifically explained?

- How could consciousness be explained? How is it created? Why does it exist? And does it exist, in fact?

- Would the mind be only the result of the brain processes that might be described with biological and physical terms? Or, would it be something else?

Giving theorist answers and formulating hypothesis to these questions have been relatively easy to philosophers. But the challenge to science people, who use laboratories to investigate it, is to find explanations that could be *experimentally proved*, which means, measured and quantified, as it is stated by the Cartesian method.

In order to answer these questions and have the scientific criteria as target, researchers have analyzed many phenomena such as the nature of dreams, emotions

and consciousness, the sensory perceptions, the learning system, the memory storage, etc.

Many new and interesting facts have emerged from these studies, but some scientists, who are more perspicacious, like the philosopher David Chalmers, have already noticed that all these information have only furnished more details about the living matter itself, but have not explained the mind, yet.

For dedicating themselves to investigation, all scientists have curiosity about knowing new facts, and knowing them is one of the most pleasure activities for an intellectual person. So, those people who have an open mind, without prejudice, would certainly become fascinated with the revealing of the new panorama that spiritualism could offer.

And when this happens, they will find in the abundant books Christian Rationalism has edited since 1910 the necessary help to interpret, in a logical and simple way, the polemic results they have obtained. This would preserve them from the ridiculous situation of taking absurd conclusions, like the one done recently, when it was stated that the brain is the creator of the mind!

Nevertheless, already in the 19th century, renown scientists, such as the wizard Claude Bernard, considered the creator of modern philosophy, and the also wizard Paul Gibier – bacteriologist doctor, disciple of Pasteur – already stated that matter, even *living matter*, is inert and that, using a Christian Rationalist term, the Intelligent Force or simply the Force, *that is found outside the matter*, is the one that organizes, stimulates and moves it.

Resuming, although the brain is formed by living matter, it is inert and cannot create anything. The one who creates is the so searched mind, because it – the Force – is the mental consistence, the soul, or simply the spirit. And it is the one capable of organizing, stimulating and moving the whole physical body, including the brain.

The spirit is light, intelligence, creator and achiever power. It is invisible to the normal observer, but it can be recognized through the result of its actions, which means, through its effects. But, even not seen, smelled, touched, measured and quantified, it surely exists. As Dr. Alberto Seabra, homeopath doctor and self-sufficient thinker, said: “Heat, electricity, sound and chemical rays are all invisible, and from all these invisible things, we enjoy or feel their effects.”

Searching for biological basis for the mind, these scientists have found many difficulties. They feel themselves as they were in a strange and exotic land, where the kind of logic they are used to work with seems not to be working anymore. And this is the reason of the many questions they have done lately, which some of them we will try to answer now, using the clear simplicity of spiritualist logic.

Question: *Why everyone`s body and brain can be observed by others, but the mind is only observed by its owner?*

Answer: The entire physical body, including the brain, is constituted by matter originated from the own Planet Earth, therefore visible and accessible for all Planet`s inhabitants. However the mind or spirit is immaterial and invisible for human eyes and can only be felt and observed by the own person through its consciousness.

Question: *Why do many people can do the same observation regarding someone`s body or brain, but it is not possible that one of them does a direct and trustful observation about someone`s mind?*

Answer: The physical body is an admirable machine conceived by Universal Intelligence (or God, as it is also said) in order to give to the machinist – the spirit – the necessary resources for it to attend to the improvement class in the Planet Earth during uncountable and successive incarnations. As already said, it is material, so it is possible to observe, to measure and to quantify it, directly. By the other hand, the mind or the spirit is immaterial and constituted by light. It is a particle of Universal Intelligence, but during its entire evolving path, it maintains itself individualized. So, it is not possible that other people make direct observations on it, because the own individual is the only one who have access to it – nobody else.

Question: *Why are the body and the brain public, exposed, externals and objectives? And why is the mind private, occult, internal and unmistakably subjective?*

Answer: As already explained, the mind is really private, because it only belongs to the own person. But it is external and not internal, as it is wrongly said by scientists. And this is a very old scientific knowledge, as also explained, because the own Claude Bernard had already known and divulged. Its necessary, then, that scientists be careful not to only valorize the technique, being dazzled by it and forgetting about the valuable knowledge bequeathed by the past huge personalities.

Before beginning a research, all scientists try to elaborate a good experimental protocol, which means, they write down a guidebook about how the subject to be studied has to be approached. And, during this quest to the mind, there are at least two basic mistakes in the protocols that are being organized:

- the choice of phenomena that has been analyzed;
- the methodology that has been used.

Exemplifying: consciousness, so intriguing for researches, is one of the most valuable properties the spirit has. Without it, it would be impossible for the incarnated being to properly execute its evolution schedule, because the spirit receives orientations about how to follow this schedule from consciousness.

Therefore, we should always respect the voice of consciousness and, to understand it, we should educate the ears, the reasoning and the logic. But mapping the audible region of the brain through fMRI (Functional Magnetic Resonance Imaging) and obtaining colored images from it, won't make consciousness be deciphered, because it is an attribute from the spirit, not from the encephalic mass.

Regarding the sense of smell, sight, touch and taste, the same thing happens, because they don't originate in the physical body, but in the spirit, which exteriorize them through the sense organs and they only work with the impulse transmitted by spiritual vibrations.

Thus, scientists are wrongly reasoning because, when studying the sense organs, they believe they are in the right path to find the mind, but what they are really observing are the effects of spiritual vibrations, and not the cause of what is producing them – that is, the mind, the spirit. An almost identical reasoning could be also applied to other phenomena that are being investigated in order to study the mind.

But the biggest problem of these protocols is, doubtless, the methodology. And this will be the most polemic and most difficult point to be accepted by the conventional science and its members – a community that is, in general, still materialist and very reserved to any spiritualist ideas.

One of the main objective of rational and scientific spiritualism that has been taught by the Christian Rationalist affiliates – real high-psychic schools – is to prove the existence of the spirit (or the mind) and the spiritual life, that is, the life that exists outside our physical body. And, such as a school, these facts are explained in their books and publically explained during the psychic meetings that are done there, where they are also demonstrated through a mediumnist instruments.

The mediumnist methodology has been used since antiquity and is still the only one that science can use to study the mind. And it has been successfully used by many scientists, for instance, by Dr. Paul Gibier, whose name was already mentioned (see biographies for details).

In the experimental study about human-matter, science has evolved a lot, but it still needs to trespass the human-spirit. So, during the spiritualist age, it can be expected more sophisticated methods provided to do this kind of study.⁹

But, in order to this demand to exist, these pioneer scientists should initially study this new science field – the spiritualism – because, as Luiz de Mattos said:

Scientist is the one who investigate everything and who, instead of condemning what he ignores, tries to study, to learn what he doesn't know. That is the only way to do science, and the only way to put it above everything, even any prejudice. (translation of *Pela Verdade: a ação do espírito sobre a matéria*, 9.ed., 1983, p.39-40)

Bibliography

CHALMERS, David. *The Conscious Mind: In Search of a Fundamental Theory*, Oxford: Oxford University Press, 1997.

BERNARD, Claude.

<http://www.infoscience.fr/histoire/biograph/biograph.php3?Ref=9>

Available in 15/01/2005

DAMÁSIO, António R. Como o cérebro cria a mente. *Segredos da Mente, Scientific American Brasil*, Ed. Especial número 4, 2004.

GUEDES, Antônio Pinheiro. *Ciência espírita*. 8. ed. Rio de Janeiro: Centro Redentor, 1992. *Espiritologia*: p. 33-66.

GIBIER, Paul.

<http://www.survivalafterdeath.org/researchers/gibier.htm>

Available in 15/01/2005

MATTOS, Luiz de. *Pela verdade: a ação do espírito sobre a matéria*. 9. ed. Rio de Janeiro: Centro Redentor, 1983. *A vida moderna e a debilidade nervosa*: p. 23-28; *Não pode haver efeito sem causa*: p. 44-48.

⁹ More details can be found on this book at “Medical science facing the new spiritualist age”.

RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003. Força e Matéria: p. 44-51; O espírito: p. 83-91; Os fenômenos físicos e psíquicos: p. 207-214.

SEABRA, Alberto. *O problema do além e do destino*. In: MATTOS, Luiz de. *Pela verdade: a ação do espírito sobre o corpo*. 9. ed. Rio de Janeiro: Centro Redentor, 1983. p. 52.

SILVA, Glaci Ribeiro da. *Racionalismo Cristão e ciência experimental*. Cotia: Íbis, 2004. A captação do pensamento dos espíritos pelos médiuns: p. 29-36.

SOUZA, Luiz de. *A felicidade existe*. 7. ed. Rio de Janeiro: Centro Redentor, 1982. A consciência: p. 179-184.

6. Brain, sexual dimorphism and intelligence.

Intelligence, the master quality of the spirit, affects all other qualities. It purifies them and contributes to make them better and more efficient. The remaining spiritual qualities depend on intelligence. They are created, they grow, enlarge and improve according to the spirit's evolution. (Christian Rationalism book, Chapter "The Spirit", available at <http://www.christian-rationalism.org/ebooks>)

Sexual dimorphism (from Greek, *dimorph*, two forms) occurs when, in the same specie, females differ from males by color, size, etc; the phenomenon is common within insects and birds, but, in science, the expression is used even when the experiments are done in the human specie.

The first sexual dimorphism detected in the human brain showed that the female's tends to be lighter and smaller than the male's; this fact brought many people to believe that women are less intelligent than men.

Although this dimorphism was demonstrated more than one century ago, today this subject is still polemic and has fomented excitable debates. He was also focused by Luiz de Mattos, the great spiritualist master, in the book *Pela Verdade: a ação do espírito sobre a matéria* (For the truth: the spirit's action over the matter), in a chapter that he called, very ironically as "Intelligence by weight – as official science understand it" (*translated from Portuguese*).

Recently, a declaration from the President of Harvard University – Lawrence Summers – relighted these debates, because he suggested that the innate differences between the structure of male and female brains could be a determinant factor to the relative scarcity of women in science.

Updated studies have demonstrated that, besides this considerable difference, male and female brains also differ by both architecture and activity, but there is no evidence that these differences make women incapable of obtain academic distinction on mathematics, physic or engineering – areas that are traditionally considered as male domain.

Up to recently, researchers believe that cerebral dimorphism was only present in regions responsible for sexual behavior and they were only worried about analyzing the *hypothalamus*, a small region located in the base of this organ, responsible for the hormonal regulation and for the control of basic behaviors, such as eating, drinking and having sex. Consequently, all neuroscientist generation have ripened, believing that this dimorphism was only restricted to the hypothalamus and only depended on sexual hormones.

This vision has been modified by many discoveries that have shown the influence of the gender on areas related to cognition and behavior, such as memory, emotion, sight, hearing, and even cerebral answers to stress hormones, such as adrenaline.

The term cognition (from Latin, *cognitione*) means act or process of acquiring knowledge. *Latu sensu*, it is used as synonymous of intelligence, one of the attributes of mind, of spirit, or of "intelligence force", as used in the Christian Rationalist philosophy. That word was initially used by Greek philosophers, and was originated in the writings of Plato and Aristotle, the firsts who tried to explain the functioning of the spirit.

Studying the spirit (or mind, preferable materialist term to designate "intelligence force") was always a subject reserved to philosophers. However, in the

last years, because of a convergence of investigations originated on neurosciences, psychology, philosophy, linguistic and computing science, a new interdisciplinary field has emerged – the *cognitive science*. This new science has the objective of comprehending the structure and the functioning of human mind, taking hold of a new variety of subjects, covering everything from philosophic debates up to the creation of computing models for visioning and acquiring language.¹⁰

In the cognitive science, neurosciences (neurophysiology, neuropharmacology, neurohistology, etc.) study the brain; psychology studies the theories about the mind functioning; philosophy cooperates with the study of logic and epistemology (theoretical study about knowledge and scientific methodology); linguistic examines the language; and computing science cooperates with the models of real or theoretical machines that could simulate the brain functioning or parts of it – the called artificial intelligence.

The great advance within the study about cerebral dimorphism occurred in the last ten years was done by the contribution of neurosciences and by the techniques applied by them to obtain functional neuroimages. The most important techniques are *Positron Emission Tomography* (PET) and Functional Magnetic Resonance (fMR). They are very sophisticated techniques, and their main advantage is not being so invasive (that is, they don't invade the organism through incisions or instruments). So, it is possible to observe the brain functioning through images.

The fMR is one of the most used technique; it is based in the principle that the neural activity is directly associated with the changes of bloody flow in the brain. Thus, injecting some substances inside the vein, some colorful images are created, pointing the activated regions in the brain.

Recently, it was demonstrated through fMR that, besides hypothalamus, the anatomic dimorphism are also present in many other regions of the brain.

So:

- in the women, many parts of the *frontal cortex* involved in important *cognitive functions* are bigger than in the men; it was observed the same thing in the limbic cortex – an area involved in emotional reactions;
- in the men, the regions that are responsible for *spatial perceptions* located in the *parietal cortex* are bigger than in the women; the same thing happens with the amygdales – almond-shaped structures that react to the emotions that release adrenaline.

Using autopsies material, other researchers have found differences in cellular densities that depend on the corpse's gender; the results have shown that women have bigger density of neurons in the frontal lobe and in areas associated with language's processing and comprehension. Using this information, neuroscientists can verify if there is a relationship between the number of neurons and the cognitive capacity, checking, for example, if there is a relationship between the high density of the female auditory cortex and the high women performance in verbal fluency.

For neuroscientists, this anatomic diversity might be caused, mainly, by the sexual hormones activity that involve the embryo's brain. Curiously, the relationship between the size of the region of the adult's brain and the action of sexual steroids in the uterus, indicates that many of these sexual differences are *innate*, which means,

¹⁰ More details can be found on this book at “Medical science facing the new spiritualist age”.

they are there since the birth, not caused, therefore, as it was believed so far, by social influences and/or by hormonal changes related to puberty.

The ovum (female gamete) is much bigger than spermatozoon (male gamete) and has a huge nutritive supply in its interior, which makes it possible to wait in the fallopian tube for millions of spermatozoa deposited in the uterus by the ejaculation. The spermatozoa are small cells that practically only have the nucleus and a long flagellum (tail) used for its movement towards the ovum.

Only one spermatozoon is selected to penetrate in the ovum and, after the fusion of both gametes, the fecundation occurs. The tail of the spermatozoon that penetrated in the ovum and all the spermatozoa that weren't allowed to penetrate it stay retained in the ovular membrane.

Scientists have proposed many theories trying to explain how the ovum selects the spermatozoon that will fecund it, but this subject still remains without a logical explanation.

The spirit doesn't have gender and, when it incarnates, it may do so in a male body or female body; this decision is part of a schedule that is organized by the spirit in its intership-planet where it is taking into consideration the spiritual attributes that is still needed to the spirit to develop during its evolutionary trajectory. Thus, there is a high probability that the own spirit is the one who selects the spermatozoon that will penetrate in the ovum, determining then, the gender that is necessary to the spirit to accomplish its schedule.

Many studies have suggested that the differences of size in the cerebral structures are reflexes of its importance for the animal; for instance, the primates rather use the sense of vision than the sense of smell, and in the case of mice, it is the opposite. As a consequence of this, the cerebral regions connected to the sight are proportionally greater in the primates than in the mice. So, it seems to be logic to admit that the presence of these anatomic brain disparities between men and women has influence in the cerebral operation.

The brain is nothing more than an instrument of the "intelligence force" or spirit, which means, it is an instrument that executes the life beyond itself – the *incorporeal life*. And, being an instrument, it can not be the source of intelligence, as stated by many stubborn scientists connected to official science, where materialism still prevails. So, the sexual dimorphism of the brain might be a consequence of adaptations done by the own spirit, for it to properly use this instrument when living the life of each gender.

Resuming, all spirits ought to incarnate in both male and female body, to have the opportunity to develop attributes that belong to each gender. This events are, therefore, only supplementary for the evolution of the spirit and don't ever indicate its intelligence or evolutionary level.

Bibliography

AMORIM, José. *Energia programada: a mecânica do perispírito*. 4. ed. Rio de Janeiro, Centro Redentor, 1983. Sementes da inteligência: p. 30-32.

DAMÁSIO, António R. Como o cérebro cria a mente. *Segredos da mente, Scientific American Brasil*, ed. especial número 4, 2004.

GEARY, David. Male, female: the evolution of human sex differences. *Associação Americana de Psicologia*, 1998.

GUEDES, Antonio Pinheiro. *Ciência espírita*. 8. ed. Rio de Janeiro: Centro Redentor, 1992. Formação da inteligência: p. 33-66.

KIMURA, Doreen. Sex differences in the brain. *Scientific American*, 267 (1), 1992, p. 18-125.

MATTOS, Luiz de. *Pela verdade: a ação do espírito sobre a matéria*. 9. ed. Rio de Janeiro, Centro Redentor, 1983. Inteligência a peso: é como entende a ciência oficial: p. 191-203; O cérebro não é a sede da vida nem produz pensamentos: p. 44-48.

RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003. O espírito: p. 83-91.

7. The Physical Body and Its metamorphosis

The chrysalis shapes its cocoon; it is a bridge over the deepest abyss. The metamorphosis is the base of evolution. (Spiritualistic Science book, Chapter "Creation of Organic Matter", PINHEIRO GUEDES, available at <http://www.christian-rationalism.org/ebooks>)

The meaning of metamorphosis (from Greek, *metamórphosis*) in its *stricto sensu* is "transformation of a being into another". This meaning is commonly used to designate the change of form occurred in the life of certain animals, such as insects and tail-less amphibians. But, both in the wide sense (*lato sensus*) and in the figurative sense, this term is used as a synonymous of "change", of "mutation" and of "transformation".

Playing with these several meanings of the word "metamorphosis", Pinheiro Guedes – the brilliant Brazilian doctor – defined "evolution". For him, to evolve is to change, is to transform oneself radically, like a caterpillar transforming itself into a butterfly.

Our physical body is a complex machine that is constituted by matter from the own Planet Earth. It was very well architected by the Universal Intelligence and has the function of conducting the spirit in its arduous trajectory on this school-planet, where it learns, it corrects mistakes, and it improves itself, performing, then, its evolution.

Besides to this spiritual growth, our physical body, during its evolving climb, has passing through many metamorphosis: in its exterior, it has been gradually becoming more delicate and the rude and simian shape of pre-historic man has been slowly softening; in its interior, however, many organs and functions have also been submitted to important modifications.

So, the cecal appendix, that in older times were long, in order to accomplish its digestive functions, were gradually diminishing, and the remaining part of modern man's is only a cylindrical and very thin organ, measuring around 10 centimeters, and is tied to the cecum. This organ has also quit exercising its former digestive function and is now part of the immunological system.

The same thing is happening to our third molars or wisdom teeth. These teeth were probably very useful to the prehistoric men, however, to the modern men, it's better that they don't exist, because a growing number of people is having problems with these teeth lately. On the other hand, although there are few cases, there are people whose third molars are congenitally absent.

But, while organs, like the ones cited above, seem to eventually disappear, others, like the lineal gland, are probably programmed to evolve. So, probably in the future, with the complete development of this gland, our articulated language will be replaced by the telepathic transmission, a communication media that is already used in the spiritual world. This was discussed in the *Volume 1* of this book.¹¹

The physical body can be compared to a huge industry that work 24 hours a day and 7 days a week, producing millions of substances in its cells through chemical reactions. Each cell is a division of the industry, properly equipped to generate, among other things, the necessary energy to this industry to work.

¹¹ SILVA, Glaci Ribeiro da. *Christian Rationalism and Spiritual Science*. Available at <http://www.christian-rationalism.org/ebooks>.

Although each cell has a specific function related to the tissue where it belongs, all cells also develop a “communitarian” activity, working integrated with other cells of the body. The energy generation is the most important communitarian activity done by our cells.

In the cytoplasm, that is the space between the cell’s membrane and nucleus, there are mitochondria – one of the cytoplasmic organelle. They are the responsible for the cell’s respiration and, when developing such function, they produce energy. In other words, the mitochondria are the “energy’s factory” of cells.

Generally, the scientific community reacts with much skepticism to innovatory and revolutionary ideas. Nevertheless, in most of the cases, these ideas are the responsible for great scientific and technologic progresses. This can be explained because, normally, these ideas are directly captivated from the Superior Space by scientists with very developed intuitive mediumnity.

So, it is not strange that the hypothesis of the 1960’s saying that in the past, the mitochondria had been free bacteria was received with laugh and debauch by scientists.

However, nowadays, the evidences about this are overwhelming and most of scientists agree that these organelles are descendents of foreign invaders, that, around two billions years ago, they symbiotically associated with the unicellular ancestral of all plants and animals.

The symbiosis is a kind of association that exists between two organisms, where both are benefited by it, even though, in different proportions. Besides mitochondria, other bacteria, such as gut flora, as an example, also live symbiotically in our organism.

The first sign of human pathology’s importance exercised by mitochondria appeared in 1988, when it was discovered that Leber’s hereditary optical neuropathy – a mysterious kind of premature blindness – is caused by DNA mutations, however not human DNA, but mitochondrial DNA (known as mtDNA). The mtDNA is around 200 thousand times smaller than the DNA of the human cell’s nucleus and, it is so minuscule that scientists used to believe its biological role was only connected to the mitochondrial energetic metabolism.

During the last decade, it has been already discovered around 200 mutations in the mtDNA, which are associated to several diseases, such as Alzheimer, rheumatoid arthritis, cancer and many pathologies of the reproduction system.

These diseases form a heterogenic group, but they have a common characteristic: the cells involved on them have a long life and a high level of energy, like brain and muscle’s cells. This would explain the several symptoms of these pathologies, such as lack of muscular power, decrease of mental capacity, constant cerebral hemorrhages, blindness, convulsions and tremors.

Besides, the evidences that bad mitochondrial functioning develops important role in the aging symptoms has been increased

But, what is the most intriguing about this subject is the perception scientists have had during the last five years, that the decision power of our organism’s apoptosis is in the mitochondrial DNA and not in the DNAs inside the nuclei of human cells, as believed before.

The term “apoptosis” (from Greek, *apoptosis*) makes reference to the falling leaves from the trees in the autumn – an example of physiologic and appropriated programmed death which also implicates renovation.

In our organism, the apoptosis is the physiological phenomenon responsible for homeostatic regulation of the tissues dimension. It is processed through a programmed cellular death.

This programmed cellular suicide is responsible for the permanent rejuvenation of tissues, eliminating, selectively, cells which survival would damage the organism. Whenever apoptosis *doesn't occur*, some problems might emerge, such as cancer and, on the other hand, it *prematurely occurs* in many degenerative diseases, such as Alzheimer.

All in the Universe are constantly evolving and it can be felt on everything. Thus, it wouldn't be illogic to imagine that mitochondria, which have already been free living bacteria, ought to follow their own evolution trajectory. This could explain the uncountable mutations (or changes, or metamorphosis) that the mtDNA is having. So, these mitochondrial mutations mean disease for our organism, but, for these organelles, they are only the tools for their own evolution.

Recently, more evolved spirits have incarnated on Earth showing that our planet is gradually missing its school-planet function. This has been issued in many Superior Astral communications, including Luiz de Mattos.

Therefore, because nothing happens without a reason in the Universe, it is possible that these mitochondrial mutations are part of a programmed adaptation by the Universal Intelligence to remodeling the current physical body, so, it can be used in a more efficient way by more evolved spirits.

Bibliography

GUEDES, Pinheiro. *Ciência espírita*. 8. ed. Rio de Janeiro: Centro Redentor, 1992. Criação da matéria orgânica: p. 81-94.

JANSEN, R. P. S. Germline passage of mitochondria: quantitative considerations and possible embryological sequelae. *Human Reproduction*, 15 (Suppl 2): 112-8, 2000.

MATTOS, Luiz de. *Clássicos do Racionalismo Cristão*. 2. ed. Rio de Janeiro: Centro Redentor, 2001. v. 1. Evolução sem medo: p. 142-145.

NAKADA, K. et al. Inter-mitochondrial complementation: Mitochondrial-specific system preventing mice from expression of disease phenotypes by mutant mtDNA. *Natural Medicine*, 7 (8): 934-40, 2001.

OKATANI, Y. et al. Melatonin protects against oxidative mitochondrial damage induced in rat placenta by ischemia and reperfusion. *Journal of Pineal Research*, 2001, 31 (2): 173-8.

PULKES, T.; HANNA, M. G. Human mitochondrial DNA diseases. *Advances in Drug Delivery Review*, 49 (1-2): 27-43, 2001.

RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003. A evolução: p. 161-169.

SALVIOLI, S. et al. Mitochondria, aging and longevity – a new perspective. *FEBS Letter*, 492: 9-13, 2001.

SILVA, Glaci Ribeiro da (2004). *Racionalismo Cristão e ciência experimental*. Cotia: Íbis, 2004. A captação do pensamento dos espíritos pelos médiuns: p. 29-36.

SILVA, Glaci Ribeiro da (2004). *Racionalismo Cristão e ciência experimental*. Cotia: Íbis, 2004. O papel da mediunidade no avanço da ciência: p. 119-127.

SOUZA, Luiz de. *A felicidade existe*. 7. ed. Rio de Janeiro: Centro Redentor, 1982. A vida terrena: p. 137-159.

SUGANUMA, N., et al. Human ovarian aging and mitochondrial DNA deletion. *Hormone Research*, 1993, 39 (Suppl. 1): 16-21.

WALLACE, D. C. Mitochondrial diseases in man and mouse. *Science*, 1999, 283: 1482-93.

WANG, Y.; WALSH, S. W. Placental mitochondria as a source of oxidative stress in pre-eclampsia. *Placenta*, 1998, 19 (8): 581-86.

WANG, X. The expanding role of mitochondria in apoptosis. *Genes Development*, 2001, 15: 2922-33.

WIDSCHWENDTER, M.; SCHROCKSNADEL, H.; Mortl, M. G. Pre-eclampsia: a disorder of placental mitochondria? *Molecular Medicine Today*, 1998, 4 (7): 286-91.

WILDING, M. et al. Mitochondrial aggregation patterns and activity in human oocytes and pre-implantation embryos. *Human Reproduction*, 16 (5): 909-17, 2001.

8. Psychic phenomenology and physical phenomena: extending horizons.

(...) *Those who restrict themselves to watching physical phenomena while closing their reasoning to the analysis of psychic phenomenology take a narrow-minded view of spiritual matters. Their dialects, which revolve around a circle of small dimensions, disappear in front of the large scenario occupied by psychic science. (...) (Christian Rationalism book, Chapter "The Physical and Psychic Phenomena", available at <http://www.christian-rationalism.org/ebooks>)*

Lamentably, mediumnity - one of the most important spiritual faculties – is a subject that has not been properly studied by official science.

The medium is an element of connection between physical and psychic levels; the more sensitive the medium is, the greater will be the possibilities for the medium to capture vibrations from space; these vibrations can be of different types and for each vibration that is captured, a different phenomenon will be produced.

Mediumnity is innate in all human beings and is manifested through many modalities. The intuitive mediumnity is present in all beings; its intensity, however, varies from individual to individual, because it gets lapidated and improved from incarnation to another.

The manifestations of mediumnist faculties vary among individuals and depend on temperament, nervous system, animating force, sensibility and degree evolution.

Besides intuitive, there are also other types of mediumnity, such as olfactory, auditory, psychographic, incorporative and visual.

The visual medium is able to capture vibrations from astral light, while retina of human eyes only captures vibrations from solar light. This explains why some blind people, whose retinas are incapable of capturing solar light, are endowed with vision mediumnity. Because of this, vision also occurs when the medium has the eyes closed.

The visual medium is capable of describing the exact picture of an absent or a dead person, who is totally unknown to the medium; he performs a detailed description of that person – size, appearance, attitude, and habitual gestures – identifying, then, the person that is only visible for him.

Illustrative pictures showing other possible kinds of astral vision can be found in the Christian Rationalist book *Incorporeal Life*¹². These kinds are variable, such as luminous spots and colorful geometrical shapes, shadowy forms, human silhouettes, dark and threatening faces, different kinds of animals and colorful aureoles encircling human beings – the auras.

The aura is an emanation of Creator Force; it exists in all bodies of all realms of nature and it may be seen by visual mediums. The part of the aura closer to the body's periphery is denser, and, from there, it gradually becomes more diaphanous.

The beginner visual mediums only see the denser portion of the aura; however the more developed mediums are able to deeply perceive the aura.

Coloration of the aura varies according to the evolution of each being. In the mineral bodies, the color is practically constant; in the vegetable bodies, the aura differs from kind to kind and has greater chromatic variation; in animals of inferior

¹² *Incorporeal Life*. Available at <http://www.christian-rationalism.org/ebooks>.

species, the variation in the colors of the aura is even greater, and it also changes according to their health condition, according to the situation, that is, if they are calm or irritated, if they are afraid, etc, and according to their nutrition condition, their age, etc.

But, in the human being, the aura presents its most complexity, due to its huge variation of colors. Through the aura, it is possible to analyze the degree of evolution of each individual, its tendencies, natural disposition, intelligence, reasoning capacity, sensibility, and even the nature of his thoughts.

Color and even shape can be observed on our thoughts. This subject was addressed by Luiz de Mattos – Christian Rationalist doctrine codifier – in its book *Cientistas sem ciência* (Scientists without science) and was also published recently as an article in the Christian Rationalism web site (in Portuguese).

Synaesthesia is described as a familiar syndrome and occurs in around 0.05% of the population. People with synaesthesia can have the sensation that tastes have shapes, and smells might be able to produce sounds. Scientists believe that their etiology is related to the crossing of connections between different cerebral processing centers, involving, for example the emotional processes and the olfactory perception.

It was published, recently, in the scientific magazine *Cognitive Neuropsychology*, and study about a 19 years old British lady who said that she can see colors in certain people; the young lady sees, for example, a purple light surrounding some of them. Furthermore, as verified in laboratorial tests, names of loved people and certain emotional words also have a colorful brightness for her. She sees, for example, the name of her boyfriend, James, in pink letters, and negative terms, like “hate”, as brown and gray.

Bellow is a transcription of the interpretation given by the author of this article about the interesting facts he was able to study:

The special ability of certain individuals to perceive the colored auras of other people has held an important place in folk psychology and mysticism throughout the ages. Although many people claiming to have such powers could be charlatans, it is also conceivable that others are born with a “gift” of synaesthesia. GW does not believe that she has mystical powers and has no interest in the occult. However it is not hard to imagine how, in a different cultural and social environment or a different age, such an interpretation could arise. Rather than assuming that people give off auras or energy fields that can only be detected by rigged cameras or trained seers, we need only assume two things to have a “scientific” account of the phenomenon in terms of synaesthesia. First, we need to assume that people with whom we are well acquainted and certain other stimuli (e.g., emotionally loaded words) can trigger an emotional response in the perceiver. Second, we need to assume that certain synaesthetic individuals have an exaggerated cross-wiring (or some other neural mechanism) between centers involved in emotional processing and color perception, which enables the emotion-inducing stimulus to explicitly acquire this novel dimension. The former is taken for granted by most cognitive scientists. The latter is a conjecture on the basis of the findings from this case study

As it can be verified, the scientist lost a good opportunity to seriously study a psychic phenomenon just because he can't see what his patient sees, and also because of prejudice.

The main reason that drives away many wise people from this kind of investigation is that such facts are apparently against the natural laws already

classified and recognized. And, by admitting that, a wise man or a science man makes himself a confession about the narrow mental horizon he has.

There is also the fear mediocre people have about being different from their group, their community; and, for the scientists, this means to face an arduous fight against their partners, because official science is usually intransigent with visionaries.

This problem, always present in the official science, was commented in the 1920s by Dr. Alberto Seabra – a notorious doctor from São Paulo, Brazil, endowed with an opened and brave mind – in his book *O problema do além* (The problem of beyond):

The psychic phenomena should be studied with huge tolerance and curiosity, but let us do this without artifice, sincerely, chasing the imposture away from the truth, driving the illusion away and looking for the real, selecting the authentic facts, trying to extract the blood from it and rejecting whoever has a doubling authenticity. There are no facts against facts, or natural laws against natural laws, or truths against truths. It will be simply a new fact, but it won't invalidate the others that was already demonstrated.

The brave and intrepid Dr. Antônio Pinheiro Guedes was very aware about that. When dealing with the genesis of the soul, in his book *Spiritualistic Science* and making several considerations about the materialistic science, he affirmed:

I made these considerations (...) as well as to express like a reflector the emotions of my cautious spirit. I would like also to keep an eye on the events resulting from the collision of those theories and doctrines, stretching out from materialists to spiritualists.

Both Alberto Seabra and Pinheiro Guedes – two much evolved spirits – are part of Superior Astral. The book *Spiritualistic Science* was written by Pinheiro Guedes in the nineteenth century and there is there an important portion of the Christian Rationalist philosophy.

It is necessary to have the courage, the daring of men like them to the science to evolve. And it will certainly evolve, because evolution is universal.

We hope that during the emerging of this age – the Spirituality Age – scientists would learn to see what is invisible to them, because, as it is stated: the worst blind man is the one who doesn't want to see.¹³

Bibliography

A VIDA fora da matéria. 21. ed. Rio de Janeiro: Centro Redentor, 1996. A aura: p. 31-34.

GUEDES, A. Pinheiro. *Ciência espírita*. 8. ed. Rio de Janeiro: Centro Redentor, 1992. Gênese da alma humana: p. 131-136.

¹³ More details on this book at “Medical science facing the new spiritualist age”.

MATTOS, Luiz de. As cores e as formas do pensamento. *Gazeta do Racionalismo Cristão*. Available in December 2004 at <http://www.racionalismo-cristao.org.br/gazeta>.

SEABRA, Alberto. *O problema do além e do destino*. 3. ed. São Paulo: Pensamento, 1927. O sistema nervoso e os sentidos: p. 41-47.

SILVA, Glaci Ribeiro da. *Racionalismo Cristão e ciência experimental*. Cotia: Íbis, 2004. O papel da mediunidade no avanço da ciência: p. 119-127.

WARD, Jamie. Emotionally mediated synaesthesia. *Cognitive Neuropsychology*, 2004, 21 (7) 761-772.

9. Schizophrenia, dualism between materialism and spiritualism

Soul disturbances are not cured with drugs nor electricity (...) since the cause is not material, material therapy shouldn't be applied to them, but psychic instead (...) (LUIZ DE MATTOS. *Pela Verdade: a ação do espírito sobre a matéria*, 9.ed., 1983, p.77).

In philosophy, the term “dualism” means coexistence of two principles or opposite positions.

Within this text, we would like to analyze the existing duality between two different kinds of science – medicine and Christian Rationalist doctrine.

This analyzes will be done through the comparison of the conduct adopted by these two sciences regarding mental diseases, using schizophrenia as their purpose.

The medical science and the Christian Rationalist science have antagonists philosophical roots, because while the first, by being materialist, denies the existence of the spirit, the Christian Rationalist doctrine is completely well-grounded in the spiritualism, that is, in the existence of incorporeal life and in the existence of the spirit.¹⁴

Schizophrenia (from Greek, *schzein*, to divide, to separate, to fragment) is a mental disease described and defined in 1911 by the Swiss psychiatrist Eugen Bleuler.

Invariably, this kind of psychosis astonishes the relatives, because until the manifestation of the first outbreak, most of its carriers don't give any clue about what is going to happen. They reveal, at the most, excessive shyness's problems and learning difficulties. However, the patient suddenly starts to relate histories unassociated with reality and says he is pursued by voices, shadowy forms and permanent threats. The schizophrenic world is frequently very confusing, with strange voices, illogical thoughts and paranoia (from Greek, *paránoia*, insanity, madness).

The learning difficulty mentioned above is not always present in these patients, because some of them are real genius. This is the case, for instance, of John Nash Jr. - pictured recently in the movie *Beautiful Mind* - who emerged as a prodigious mathematician and who received, in 1994, the Nobel Prize for his job.

Culturally, schizophrenia represents the stereotype of insanity. According to the World Health Organization, the disease hits around 1% of the world population, with some few variation of the disease's predomination among countries. In Brazil, the Health Ministry estimates that between 0.7 to 1% of the population suffer or have already had a schizophrenia outbreak. The treatment allows that some of these people live relatively in a satisfactory and productive way, but most of them are not that lucky. The men, who tend to present the symptoms earlier, generally don't get married, and the women, who create links, frequently get involved with marriages that don't last. Usually, the symptoms of this disease manifest before 25 years old; regarding its predominance, there is not a significant difference between men and women, neither between different social levels.

The psychosomatic diseases are, in general, organized in two great groups: the *neurosis* and the *psychosis*.

In the neurosis, the disturbance is emotional, and its main characteristic is the anxiousness. There are not huge external reality distortions on it, nor behavior

¹⁴ More details on this book at “Medical science facing the new spiritualist age”.

disorganization, characteristics that are typical of psychosis. In the high level, only psychoses are considered real mental diseases.

Schizophrenia is a psychosis which most predominant symptoms are obsession, hallucinations, deliriums, thought fragmentation and behavior division. Among these symptoms, obsession, hallucinations and deliriums are the ones that most intricate the official science professionals, who are specialized in the mental health field.

Obsession is a phenomenon characterized by permanent or periodic thoughts and impulses that reach somebody's mind in an involuntary way and that are very resistant to the attempt of ignoring or suppressing them.

Hallucination is a real perception of something inexistent, which means, it is an internal perception that happens without an external stimulus. The perception is considered *real* by psychiatrics, because the conviction of the person who is suffering of hallucination is steadfast. The most frequent hallucinations in schizophrenics are auditory and visual.

Whenever a patient starts to interpret one hallucination, it is called as delirium. For example, a patient can interpret an auditory hallucination as a voice from demon, from God, from spirits or as a telepathic message. Frequently, delirium comes with hallucination.

The primary divergence between these two scientific modalities is in the etiology (or cause) of the mental pathology and, consequently it originates all other discrepancies of this dualism.

For medicine, the cause of this pathology locates basically in an organ of the physical body – *the brain* -, while the Christian Rationalist doctrine states that it is resulted from *spiritual disturbances*, and the cerebral modifications described by neuroscientists are the *effect*, not the *cause*, of this mental disturbance.

Nowadays, the medical science tries to explain the cause of schizophrenia through two basic theories. Both involve neuronal neurotransmitters, which mean, the chemical substances responsible for communication between brain's cells – neurons. The emphasis given to *dopamine* as the cause of schizophrenia arose in the 50s and was the main focus of schizophrenia's theories, for decades. But, it has been clear that besides the *high levels of dopamine* found in schizophrenia, there are other causes for the disease and the main suspicion relapsed over the *low levels of glutamate* – another neurotransmitter.

In the Christian Rationalist vision, the schizophrenics are incorporation mediums who reach obsession by unknowing their mediumnistic faculties.

Mediumnity – one of the most important attribute of the spirit – is innate in all human beings and manifests through many modalities. Besides *intuitive* mediumnity, that everyone has, it was already described other kinds, such as *olfactory*, *auditory*, *psychographic*, *incorporative* and *visual*, besides clairvoyant.

Auditory mediumnity (faculty of listening one or many voices in a silent environment) is more common than the visual one. The visual medium is capable of capturing vibrations from astral light, while the human eyes retinas only capture vibrations from solar light. This explains why some blind people, whose retinas are incapable of capturing vibrations from solar light, are, however, endowed with visual mediumnity. That is why visions occur when the medium has the eyes opened or closed. The visual mediums are capable of describing the exact picture of an absent or a dead person, who is totally unknown to the medium. They perform a detailed description – size, appearance, attitude, and habitual gestures – identifying, then, the person who is only visible for him.

Thus, to the Christian Rationalist doctrine, visual and auditory hallucinations of schizophrenics are nothing more than manifestations from visual and auditory mediumnity that these patients have.

This spiritualist doctrine also explains obsession – an evil that afflicts great part of humankind, not only schizophrenics – through the following mechanism: the space occupied by the Earth atmosphere is full of spirits and thoughts, forming, then, two networks of vibrations – good and evil. One of them might be attracted by incarnated beings, depending on the affinity of thoughts they have with each vibration. People with well formed character, who fulfill their duties, and who maintain healthy thoughts, are covered by the good network. However, those who are filled with addictions and who are predisposed to evil practices are magnetic poles of obsessive spirits that inhabit the inferior astral, receiving intuitions from them that can be manifested through hallucinations and deliriums. Some of these obsessions are so serious that end up impelling these people to commit real madness.

The abusive usage of chemical substances is one of obsession modality that hit the today's world in an almost epidemic way. It is known that around 60% of symptomatic schizophrenics smoke cigarettes and half of them abuse alcohol, marijuana and cocaine; this kind of behavior usually enhances its psychotic symptoms and increases the propensity to violence, including self-violence, because the suicide rate of these patients uses to be relatively high. One logical and simple explanation for that is given by the Christian Rationalist doctrine: the obsessive spirits that stroll in the inferior astral quickly identify the schizophrenics, by noticing how easily they receive their intuitions, due to the incorporative mediumnity those patients have. In order to continue to feed the vices they used to have when incarnated, these spirits tenaciously pursue their victims and lean on them to satisfy their cravings. So, the obsessive spirits can both have someone acquire some vices and also keep pre-existent vices active.

Psychiatry classifies the multiple symptoms presented by schizophrenics in three different categories: *positive*, *negative* and *cognitive*.

The public is more familiarized with the *positive* symptoms, particularly with *agitation*, *paranoid delirium* (when patients believe people are conspiring against them) and *hallucinations*, commonly hearing voices. Command hallucinations, when voices instigate the patients to violence and self-violence, are an extremely serious signal, because they might not resist to them and act in a violent way.

The cognitive and negative symptoms are less serious, but more pernicious. Generally, they form a grouping called as “4 A”: *Autism* (loss of interest on people and on the environment); *Ambivalence* (opposite feelings, such as love and hate, expressed during the same time); *Affective rudeness* (manifested by a soft and non-disturbing facial expression); and loss of *Association* (when the person enchains illogical thoughts, frequently mixing nonsense words).

For the Christian Rationalist doctrine, the *positive* symptoms of schizophrenia are nothing more than mediumnist manifestations originated from the domination of patients by obsessive spirits.

The brain changes in the schizophrenics have been detected by the medical science, showing a typical pattern of diffusion, are consequences of the huge cellular disorganization provoked by the constant presence of obsessive spirits and by the damages this inflicts to the brain - the tool used by the spirit to command the physical body.

The drugs used by medicine to control schizophrenia are known as antipsychotics or neuroleptics. Nowadays, both the inhibitor drugs of cerebral

receptors of dopamine – chlorpromazine (Ampticil*)¹⁵ and haloperidol (Haldol*) – and stimulating drugs of glutaminergic receptors – Glycine (Medifoods*) and D-Serine (Glitech*) - are used. Other drugs, involving or not the glutamate, but possessor of potential to control this psychosis, are still being researched and clinically tested.

All over the world, the schizophrenic patient is the one who most frequently need to be interned in psychiatric hospitals. The hospitalized patients receive this treatment with drugs, however with very high dosages and they are also frequently submitted to *electroconvulsive therapy*, a non-innocuous procedure that usually leads to sequels.

In the resistant or refractory cases, patients might be submitted to *functional estereotaxic surgery*, a psychosurgery that is not very invasive and is still very polemical. Such an option is not a consensus between neurosurgeons and psychiatrics, yet. In Brazil, the Ministry of Health is against psychosurgery, alleging that there are not enough scientific evidences to authorize a procedure like this which, according to recent statistical data, involves risks to the patients. But, despite that, this surgery is still done and new techniques are usually tested to do this, using patients from public psychiatric hospitals as *human guinea-pigs*. These patients are also used in the pre-clinical tests that the pharmaceutical industry is obligated to do before launching new antipsychotic drugs in the commerce.

The therapeutic behavior suggested by Christian Rationalist doctrine to these patients has as main objective to *promote the removal of obsessive spirits* – the real cause of schizophrenia. Once achieving this, the patient should perform a complementary treatment aiming to fix the organic disorganization caused by these spirits through professional help of doctors and psychologists. The normalization of schizophrenics can be completed by themselves, by disciplining their way of living, controlling their thought and their will. Psychotherapy is an important supporting method; however, in order to obtain success with it, it is essential that the patient releases the obsessive spirits before the beginning.

The success of a treatment depends essentially on the etiology of the illness to be cured, because the ideal behavior should be the one *specific* to that pathology.

Because medicine still doesn't know the etiology of this mental disease, it uses a treatment that only hits the symptoms, which means, the symptoms of schizophrenia are minimized through it, but never cured, because the causes are not treated.

The Christian Rationalist science, having determining the real cause of this mental disturbance, suggests a *specific* treatment to *cure* it, the disobsession, that is detailed described in the *Christian Rationalism* book, available in the internet for free download at www.christian-rationalism.org.

The electroconvulsive therapy and the functional estereotaxic surgery are trials (frustrating, I would say) done by the medical science to cure schizophrenia, because the target of both is the brain – where is located, according to the opinion of most doctors, the cause of this pathology...

But, as Luiz de Mattos – the greatest spiritualist master who codified the Christian Rationalist doctrine – said:

¹⁵ The commercial names of the active substances are signaled with *.

*Medicine as science is still incomplete, because it treats only the matter. (...) Although medicine has reached culminating points in the experimental course to the study of man-matter, it hasn't done anything to trespass the man-spirit, yet.*¹⁶

Bibliography

RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003. A desobsessão: p. 239-244.

DOSSIÊ LOUCURA. *Revista de História*, ano 1, número 2, agosto de 2005, Brasília, Fundação Biblioteca Nacional, Ministério da Cultura.

GOFF, D.C.; COYLE, J.T. The emerging role of glutamate in the pathophysiology and treatment of schizophrenia. *American Journal of Psychiatry*, 2001, 158(9): 1367-1377.

GUEDES, Antônio Pinheiro. *Ciência espírita*. 8. ed. Rio de Janeiro: Centro Redentor, 1992. Espiritologia: p. 33-66.

NASAR, Sylvia. *A beautiful mind: the life of mathematical genius and Nobel laureate John Nash*. New York. Touchstone Books, 2001.

MATTOS, Luiz de. *Pela verdade: a ação do espírito sobre a matéria*. 9. ed. Rio de Janeiro: Centro Redentor, 1983. Distúrbios da alma: p. 75-79; Dores de consciência já sentidas: p. 80-82.

TUCKER, Gary J. Psychiatric disorders in medical practice. In: *Cecil textbook of medicine*. 20th ed. London: W. B. Saunders, 1996. p. 1997-1999.

SILVA, Glaci Ribeiro da. Entrevista sobre hospitalização de doentes mentais. In: A odisséia da Psiquiatria, José Alves Martins; *Jornal A Razão*, p. 6-7, agosto de 2005.

¹⁶ MATTOS, Luiz de. *Pela verdade: a ação do espírito sobre a matéria*. 9. ed. Rio de Janeiro, Centro Redentor, 1983. P. 82. (translated)

10. Materialist science sailing on seas never before navigated

*Materialists, denying the existence of sprit, shouldn't talk about psychology, that is the science that doesn't care about cerebral function, but about faculties or intimate operations of spirit; however, all use that term, even when treating faculties attributed by them to cerebral functions, entitling them as psychological phenomena, generating jobs related to psychology of attention, of consciousness, of memory, of character, of love, etc. (LUIZ DE MATTOS. *Pela Verdade: a ação do espírito sobre a matéria*, 9.ed., 1983, p.191).*

Despite of all scientific and technological advances of today's world, most scientists still make primitive mistakes when taking only the physical body as basis to interpret facts and create theories, leaving aside the mind – the most important part of the human being.

And this way of acting by science people is not new; almost one century ago, Luiz de Mattos, the greatest spiritualist master, in his book *Pela Verdade: a ação do espírito sobre a matéria* (For the truth: the spirit's action over the matter), had already tried to alert doctors and scientists from that epoch about this wrong kind of criteria they adopted.

Although most scientists keep insisting on this crass mistake, the main concern now is the contamination that many human science fields, that have always dedicated their studies to the mind, have suffered with the materialist ideas of biomedicine researchers.

The creation of cognitive sciences – interdisciplinary fields that unite both human science and biomedicine professionals – came to empower even more this contamination, because many psychologists, for example, have involved themselves more and more with neuroscientist researches, which main target has been to visualize the different cerebral function through neuroimage techniques and to use this knowledge in the elaboration of a cerebral map.

The first-ever cerebral map can be found in a papyrus dated from 3000 to 2500 BC and was probably organized as a guide to whoever practiced trepanation, which was a common practice among ancient Egyptians.

At the beginning of 19th century, the Viennese physician Franz-Joseph Gall (1758-1828) created the phrenology (from Greek *phrenos*, soul, mind, spirit + *logia*, study). According to him, there are 26 functionally different modules (or organs) in the brain surface, including an *organ of death* that is present in individuals with assassin trends. According to Gall, the brain organs that are used become bigger, bulging the brain and forming bumps that reflect specific areas of the brain related to a person's emotional and intellectual functions. To this kind of study, Gall named as craniology.

His ideas were adopted and spread by many scientists, including the Italian criminalist Cesare Lombroso (1835-1909). However, at the end of 19th century, these ideas were discredited, when it was demonstrated the absence of soft tissue's influence over the skull form.

Nevertheless, the Gall's pioneer idea of a brain formed by functionally different modules was later on considered right and was the embryo of the cerebral mapping – one of the targets most tenaciously pursued by neuroscientists.

During the 20s, there were many trials of making this mapping, using different techniques and applying both in the human specie and in laboratories animals.

At the beginning of 21st century, this challenge of cartographing the brain still mobilizes some of the best neuroscientists.

However, now, this is done through sophisticated techniques of functional scan (tomography by positrons emission and functional magnetic resonance) that makes the interior of the living and functioning brain visible, through images, similarly to the X-Rays action revealing the bones.

Opening up this new territory is a great victory to science, because the brain has been slow to reveal its secrets, and neuroscientists have never conformed not understanding the machinations it uses to originate thoughts, memories, feelings and perceptions, because it is impossible to directly examine the nature of these phenomena and it could only be inferred by the observation of its effects.

The enthusiasm of investigators from this field has been very high, because these machines have explored this unknown territory, in the same way as the first oceanic vessels had opened up the world.

Neuroscientists, imbued with vigor and feeling so powerful like a real navigator, decided to face their biggest challenge – the consciousness enigma. For them, this means to decipher the mind-brain enigma – one of the biggest problems of human biology – which means, how the brain, that is *visible* and *palpable*, produces the *impalpable sensation* of being someone. In other words, they are trying to discover how the self emerges from the brain.

The growing number of important publications done lately by neuroscientists and their enthusiasm has attracted professionals from human science who have ended up putting aside their main objective that is to study the mind (or spirit). However, the even serious thing is that most of them have assumed as real the absurd idea of looking for the mind inside the brain, forgetting that mind is *immaterial*, is *found outside the physical body* and, therefore, can *never* be found in the brain.

Although starting from a false premise – considering the brain as the generator of consciousness – the results obtained from these scientists are interesting. So, it is worthy to transcribe and comment some fragments of an article published recently in the *Scientific American*, where some of them are described. The article is entitled as “The Neurobiology of the self” and the author is Carl Zimmer – a famous American journalist who is specialized in science.

The selected fragments are in italic and, in order to be more objective and less prolix, our comments appear bellow each of them.

The most obvious thing about yourself is your self. “You look down at your body and know it’s yours,” says Todd Heatherton, a psychologist at Dartmouth University. (...) The self may be obvious, but it is also an enigma. Heatherton himself shied away from direct study of it for years, even though he had been exploring self-control, self-esteem and other related issues since graduate school. (...) Things have changed. Today Heatherton, along with a growing number of other scientists, is tackling this question head-on, seeking to figure out how the self emerges from the brain. In the past few years, they have begun to identify certain brain activities that may be essential for producing different aspects of self-awareness. They are now trying to determine how these activities give rise to the unified feeling we each have of being a single entity.

These activities could be the consciousness as the effect from this feeling of being a single entity, but certainly they would never be their origin.

At University College London, researchers have been using brain scans to decipher how we become aware of our own bodies. (...) When our brains issue a command to move a part of our bodies, two signals are sent. One goes to the brain regions that control the particular parts of the body that need to move, and another goes to regions that monitor the movements. "I like to think of it as a 'cc' of an e-mail," Blakemore observes. "It's all the same information sent to a different place." Our brains then use this copy to predict what kind of sensation the action will produce. (...); for example, speaking will make us hear our own voice. If the actual sensation we receive does not closely match our prediction, our brains become aware of the difference. The mismatch may make us pay more attention to what we are doing or prompt us to adjust our actions to get the results we want.

But if the sensation does not match our predictions at all, our brains interpret them as being caused by something other than ourselves. Blakemore and her colleagues documented this shift by scanning the brains of subjects they had hypnotized. When the researchers told the subjects their arms were being lifted by a rope and pulley, the subjects lifted their arms. But their brains responded as if someone else were lifting their arms, not themselves

The spirit of somebody submitted to hypnosis loses the full command of its physical body and delegates this power to the hypnotizer. Eventually, spirits from the inferior astral might also take possession of the hypnotized physical body originating obsessions. So it is recommended to be careful with hypnosis, which usage is unfortunately happening nowadays in the called past life regression, in an almost abusive way.

It is known that some people can not be hypnotized; this probably happens because they have a strong spirit and, therefore, don't let themselves be dominated.

A similar lack of self-awareness may underlie certain symptoms of schizophrenia. Some schizophrenics become convinced that they cannot control their own bodies. "They reach over to grab a glass, and their movements I totally normal. But they say, 'It wasn't me. That machined over there controlled me and made me do it,'"

*Studies on schizophrenics suggest that bad predictions of their own actions may be the source of these delusions. Because their sensations do not match their predictions, it feels as if something else is responsible. Bad pre-dictions may also create the auditory hallucinations that some schizophrenics experience. Unable to predict the sound of their inner voice, they think it belongs to someone else.
(...)*

The more energy that a cell consumes, the greater its risk of damaging itself with toxic by-products. Seeley (a neurologist at the University of California, San Francisco) suspects that the hardworking neurons in the self-network are particularly vulnerable to this damage over the life span. Their vulnerability, he argues, may help neurologists make sense of some brain disorders that erode the self. (...) The results of recent brain-imaging studies of the self agree with findings on people with Alzheimer's. (...) Some of the first regions to be damaged are the hippocampus and precuneus, which are among the areas involved in autobiographical memories. "They help you bring images of your past and future into mind and play with them," Seeley

notes. “People with Alzheimer’s are just less able to move smoothly back and forth through time.”

Both schizophrenia and Alzheimer are considered dementias or insanities. Schizophrenia hits mainly younger adults and Alzheimer, the third age. So, schizophrenia used to be called as precocious dementia and Alzheimer, as senile dementia.

Although these two pathologies manifest through different symptoms, they both have the same background – the obsession, that is the spirit from the inferior astral dominating the patients.

In schizophrenia, that starts abruptly, predominates the exuberant symptoms of deliriums and hallucinations; these symptoms were already analyzed in this book.¹⁷ However, the Alzheimer disease, that starts discretely and has a slow and progressive evolution, is marked by a profound depression, which main cause is the harmful action from spirits of the inferior astral.¹⁸

In both diseases, there are also changes in the level of cerebral neurotransmitters: dopamine and glutamate in the schizophrenia and acetylcholine, among others, in the Alzheimer disease. The decreasing of acetylcholine – the primary neurotransmitter involved in the memory and learning – is the most dramatic and consistent event in the Alzheimer disease and one of its main characteristic is the loss of the recent memory. Both in the schizophrenia and Alzheimer disease, the clinical therapy has been based on the drugs usage, which aims the normalization of these neurotransmitter levels.

Medicine understands that the cause of schizophrenia and Alzheimer disease are basically located in the brain, and scientists have persistently dedicated their studies to anomalies caused by these pathologies in this physical body’s organ. This persistence has been so significant that they haven’t been able to notice that cerebral changes are only the *effect*, not the *cause* of these disturbances.

The study that has been done in the called “Network of the self” will probably be used as basis for the pharmaceutical industries to lunch new medicaments like how it was done when the involvement of certain neurotransmitters in the schizophrenia and Alzheimer disease was discovered. However, such medicaments will continue to be always symptomatic and, therefore, will not be able to hit the real causes of these two pathologies, since they have spiritual origin. And, in order to cure spiritual disturbances, the methodology to be used – described in the chapter about schizophrenia - should be completely different from the one used by these scientists.

Seeley thinks the real value of the science of the self will come in treatments for Alzheimer’s and other dementias. “Once we know which brain regions are involved in self-representation, I think we can take an even closer look at which cells in that brain region are important and then look deeper and say which molecules within cells and which genes that govern them lead to this vulnerability,” he says. “And if we’ve done that, we’ve gotten closer to disease mechanisms and cures. That’s the best reason to study all this. It’s not just to inform philosophers.”

The cure of mental disturbances such as schizophrenia and Alzheimer disease should obligatorily include the physical and the mental bodies (the spirit). The

¹⁷ More details on this book at “Schizophrenia, dualism between materialism and spiritualism”.

¹⁸ SILVA, Glaci Ribeiro da. *Christian Rationalism and Experimental Science*. Available at <http://www.christian-rationalism.org/ebooks>.

antagonism existent between the materialist science and the philosophers is expressed in the Seeley's phrase when affirming, in an almost depreciative way, that the study done by the science of the self doesn't aim only to inform philosophers. Nevertheless, thanks to the great philosophers, new ideas have revolutionized the world, influencing the materialist science as well.

One of the astral orienteer of the Christian Rationalist philosophy on Earth was Antonio Vieira. His ideas were Cartesians and his procedures were characterized by the reasoning, by the consideration of method as guaranty for obtain the truth and by the metaphysical dualism, such as the dualism of soul and body, of good and evil, of matter and spirit. And, thus, nothing better than finishing this subject than a fragment from one of his sermons:

Men are not made of one piece only, like the angels (spirits of light) and the beasts (irrational animals). The angels and the beasts are whole, the angel because he is all spirit, the beast because he is all body. But not man. Man is composed of two pieces: the soul and the body.

Bibliography

CARTER, Rita. *O Livro de ouro da mente*. Rio de Janeiro: Ediouro, 2002. O panorama emergente: p. 14-32.

FARIA, Fernando. *A chave da sabedoria*. 3. ed. Rio de Janeiro: Racionalismo Cristão, 1998. A evolução III: p. 164-165.

MATTOS, Luiz de. *Pela verdade: a ação do espírito sobre a matéria*. 3. ed. Rio de Janeiro: Racionalismo Cristão, 1983. Inteligência a peso: é como a entende a ciência oficial: p. 191-197.

SILVA, Glaci Ribeiro da. *Racionalismo Cristão e ciência experimental*. Cotia: Íbis, 2004. O estreito limite entre depressão e obsessão: p. 45-51.

ZIMMER, Carl. The neurobiology of the self. *Scientific American*, dez. 2005.