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**Principles of Conscious and Proper Nourishment
Elements and Methods of Bio-Energetic Medicine
Educating the Mind and Nurturing the Soul
Architecture of New Modernity vs. Post-Modernity
The Whole is Greater than the Sum of Its Parts**

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PREFACE

The IAS International Online E-Journal is one of several International Journals and publications of the International Institute for Advanced Studies in Systems Research and Cybernetics. The IAS Online E-Journal provides a forum for the publication and rapid dissemination of high quality papers and short reports on new developments, advances and achievements in the interdisciplinary- and multidisciplinary-oriented Systems Research and Cybernetics, and related areas. All papers and reports selected for publication in the IAS E-Journal are peer-reviewed.

This is the first (No. 1) issue of Volume 1 (2005) of the Journal. It contains selected Keynote Addresses and Invited Papers which were presented at the 25th Annual Meetings of the International Institute for Advanced Studies in Systems Research, held August 1 – 7, 2005 in Baden-Baden, Germany. The 25th Annual Meeting of the Institute (IIAS) was officially denoted as InterSymp-2005 or as the 17th International Conference on Systems Research, Informatics and Cybernetics. The authors of the papers included in this issue are well known and internationally recognized scholars and leaders in their respective fields. Most of them are recipients of various IAS Awards and Honors, which they received in recognition of their outstanding scholarly work and their significant contribution to the advancement of knowledge in the field.

The papers included in this issue are dealing with a wide variety of topics that reflect some of the current research interests of a number of colleagues at the Institute. I am grateful to the authors for the time and effort which they devoted to the preparation of their papers and for their significant contribution to the advancement of knowledge in their respective fields.

George E. Lasker
Editor-in-chef

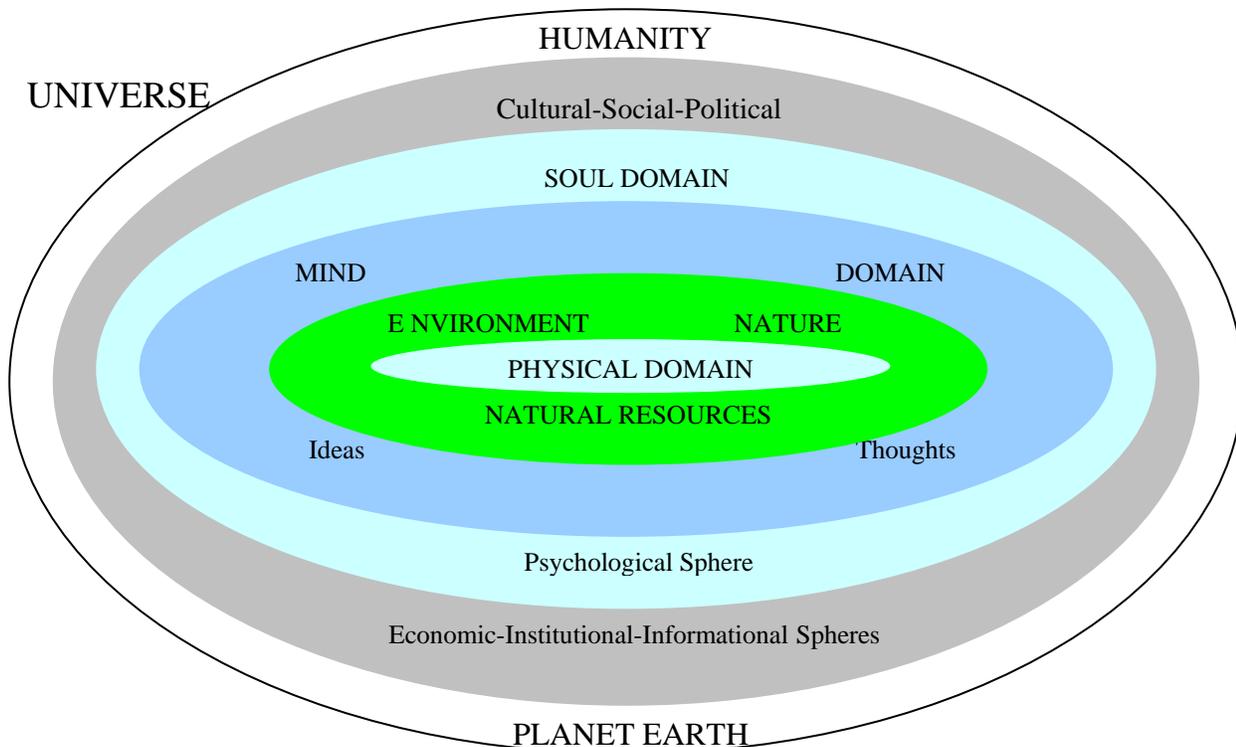
PRINCIPLES OF CONSCIOUS AND PROPER NOURISHMENT

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PREAMBLE – Background and scope

The historical roots of nutrition, which go back many thousands of years, involved a conscious use of a variety of plants gathered from nature for eating and specific healing purposes along with hunting as a supplement to their nutrition. The diet of people living in a completely natural environment was not only keeping their body well nourished, but also keeping them physically and mentally fit. This practice, in effect, still exists in some parts of the world. The ancient people knew well the power of plants and thus that of nature. They believed that remedies to heal all the human's illnesses are found in nature. All ancient healers guided by their own experiences and by those of their elders and ancestors used natural medicine to treat illnesses. These natural eating and nourishing practices have, however, been overtaken and changed in the course of evolution, development and eventually within the context of modernity and globalization. These changes have certainly resulted in incisive and complex implications in all aspects of human life and in its environment as well as in human ecology as a whole. It is now boomeranging. It is intended that the topic selected as the subject of this paper pave the way for human beings to re-acquire their intrinsic conscious behavior, starting from taking responsibility for their own wellbeing. It is hoped that human beings' inherent ability to heal gradually flourishes and grows starting from its life-giving center, to eventually reaching the whole humanity as growing like an onion, as illustrated in the figure below:

Onion Metaphor



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The importance of specific nutrients in human health was only understood relatively recently, thanks mainly, to the discovery during the 18th Century, that citrus fruits preventing the occurrence of scurvy disease among sailors. This observation led to the identification of the first vitamin that is the Vitamin C. This discovery paved the way for other similar ones, gradually leading to the birth of a new scientific field 'Nutrition Science'. Tests using precise scientific methods convinced many leading scientists and physicians of the extraordinary effects of food on bodily functions and left no doubt that food induces drug-like reactions.

During the 20th Century, improvements in western economies negatively affected the eating habits of people, particularly in the industrialized countries providing easy access to foods of greater variety and quantity than was available before. The chief nutritional worries gradually shifted from deficiencies to over-nutrition by eating too much of food or of certain kinds of food. Over-eating started to be the prime cause of a set of health problems by deranging the metabolism, making people overweight or obese; and increased the likelihood of 'chronic' diseases as well as of early aging. In this negative development, food industries and their not very considerate advertising activities played a significant part by promoting over-eating, particularly of the kind of foods with heavy fat, sugar and salt content.

This type of food has easily attracted and is still attracting children and some other vulnerable groups of the society. Moreover, this remarkable change in peoples' attitude towards nutrition, which is now expanding all over the world one way or another, has created conditions conducive to overeating and poor nutritional practices. This unconscious development is now damaging the overall wellbeing of people at large, in particular, those living in the economically well - to - do industrial countries. A greater awareness of the negative effects of this harmful nourishment on peoples' behavior, in particular, on the youth's physical, mental as well as psychological health is now becoming a growing concern.

Similarly it comes to mind as an hypothesis that appearance of many infectious diseases in developing countries in addition to a number of uncommon health problems in many parts of the world may have been caused not only by the undernourishment of these people, but they may have been triggered by new variety of foods introduced from outside. Foods provided from outside are most likely typically quite different from the traditionally produced and environmentally suitable local foods. Hence, they are extraneous to the physiological built-up and the metabolism systems of these people. These new foods may have had adverse affects on peoples' immune systems and on the maintenance of the acid-alkaline balance in various fluids, tissues and vital organs of their bodies, which assure human body against possible health hazards.

This paper is formulated around the idea of keeping a balanced acid-alkaline value in the body as an essential bottom line of a good physiological, mental and spiritual health and also as a critical factor influencing the overall behavior of human beings.

By way of pH (potential of Hydrogen) analogy, the next step in the same direction could be the application of the same idea to other layers of the onion metaphor so as to outreach the whole humanity and to develop similar basic principles. This way we also reach a new concept of 'potential of Human Reasoning – pHR', a newly coined symbol by the author; that is Human rational/analytical (acid-like) - versus - creational/analogical (alkaline-like) Reasoning. It is an environment in which equilibrium is to be found between rational and creational (in-tuitional) reasoning. That will, in effect, be the second step concerning the human quest, that is mental health and wellbeing of the human kind and of its ecology; i.e. reflections within the 'Mind domain' inside the Onion Metaphor illustrated above.



INTRODUCTION

Proper nourishment is the key for keeping the body in optimal health and vitality. It is protective and has a self-healing ability when it becomes a natural way of eating and drinking. To be fully efficient it is to be supported by adequate physical and breathing exercises, preferably in fresh air and by a stress-free life style.

While it is difficult to generalize what to eat in view of the existence of diverse environmental and socio-economic conditions, and predominating traditions, in addition to very specific personal needs, it is possible to formulate basic principles of conscious and proper nourishment. These are briefly indicated below and further reflected upon in each corresponding chapter.

- I. CHEWING OF FOOD
- II. DRINKING WATER
- III. AIR & BREATHING
- IV. PRACTISING PHYSICAL EXERCISE
- V. FOOD COMBINING
- VI. MAINTAINING A BALANCED pH LEVEL IN THE BODY'S VITAL FLUIDS, as saliva, blood, urine, lymph.
- VII. FOODS TO EAT – FOODS TO AVOID
- VIII. PROCURING AND PREPARING FOOD: from production to cooking, up to bringing to table and eating
- IX. APPROPRIATE EATING ENVIRONMENT AND CONDITIONING
- X. ELIMINATING WASTE

These are all inseparable and interrelated general principles. They back up and complement each other and as a whole their benefit will be higher than their effects when individually applied. Each chapter dealing with a specific principle stands, however, on its own, to help understanding the specific role of each.

This approach caused, as a result, some repetition in specific chapters especially in regard to their pH implications. It is to be kept in mind that a failure in one area may adversely affect the process in others owing to the fact that these principles function as a whole following the inherent rules of a complex living system. . It goes without saying that these principles need to be adjusted individually through personal

testing and verifications. In this endeavor, each person's specific exigencies, living conditions and possibilities need to be taken into account in the first instance. In this endeavor, implications of seasonal and local conditions as well as of individuals' being integral parts of their environment, socio-economic conditions as well as of their diverse cultures need to be considered with special attention.

The basic underlying condition to keep the nourishment beneficial to the wellbeing of individual and all, however, is the existence of an internal environment, which steadily remains at the optimal pH level. An acid-alkaline balance at around 7.0 -7.5 – even slightly above the neutral level, can be considered ideal, giving the prevailing environmental conditions and hectic life styles, which tend to push the pH level toward the acidity-zone that is below 7.0. In many ways, an ideal pH level can be considered as a general indicator of a good health and wellbeing together with a number of supporting visible indications. On the contrary the emergence of symptoms indicates an ill health. This central idea will be dealt with in more detail in Chapter VI.

The body owing to its natural self-healing ability tends to achieve this balance by extracting alkalinizing minerals from the body's own resources such as bones, muscles and tissues, if they cannot be sourced directly from the natural nourishment, from the air and water to meet the need. All living creatures naturally activate their built-in alarm and emergency supply & repair systems in case of a need. In simple terms, the body, if the essential nutrients are lacking, eats itself. This is the situation when a variety of curable or hard to cure diseases manifest unless the flow of healthy food to tissues is resumed and the natural self-healing process begin. If this body's own emergency operation is not adequate, the pH balance is lost.

Usually, the pH level registers more acidity. When it reaches the critical zone, pathologies -hard to cure only by way of proper nourishment- emerge. The real measure in monitoring the successes and failures of personalized application of these principles, is not only the quantitative results of laboratory analyses and their interpretations. But it is, and more reliably, the overall physical, mental and psychological wellbeing of the individual under observation with her/his noticeable high energy and vitality which sustain conducting a satisfying life and living.

There is a great analogy between human beings and many animals, in particular herbivores, as well as plants. The common goal is that all tend to keep a balance in their nutritional supplies. Herbivores, living in their natural habitat, for instance, feed themselves with a variety of grasses in summer and hay of the same in winter, which provide all essential elements of good nourishment. This way they naturally keep their pH balance in a good shape if the environment is not abused by human beings or devastated by natural calamities. It is the same for plants. In natural conditions, they get all their needs from the soil, water, and air and grow in environments they are accustomed to. It is important to know that vegetables' chlorophyll has a molecular structure and chemical components similar to those of human blood. They are alkaline by nature. They have high nutrient content and provide just about all nutrients including the vitamins, minerals and micro-nutrients one ever needs provided that they are not manipulated and are not affected by harmful chemicals. More about these is to come in Chapter V.

In brief, in the process of transition from traditional life-styles to modern ways of living we have been mis-educated. As a result, with the words of Dale Carlin, '*we now produce haste, waste and illness*'. The intention of this work is to make people conscious of this fact and do whatever they can do, mainly on their own to counterbalance these disorders. Once they are successful in this physiological sphere they will be ready to cope with similar disorders within the mental and psychological-spiritual spheres.

I. CHEWING OF FOOD

Human body requires efficient digestion and proper elimination in order to maintain an optimum energy level and to steadily stay well. Chewing is the first step and the most essential stage in the processing of food at the point of its entrance: the mouth. The whole idea behind a good digestion is to keep the body alkaline in order to avoid the over-growth of microforms (bacteria, yeast, fungus, etc.) and to eliminate mycotoxines. This function starts in the mouth with an adequate secretion of Ptyalin enzyme (in saliva), which is alkaline by nature and essential for a good digestion.

Chewing the food well (this process may call for about 50-60 times of chewing depending on the kind of food) ensures its first level of digestion, especially of carbohydrates. It alkalizes the food in the mouth to adequately prepare it for the rest of the digestive process. Here, the objective is, before swallowing it, to bring the solid food into a liquid stage by chewing it well and keeping the liquid food in the month as long as practicable in order to allow it to benefit from the alkalizing effects of saliva.

Properly done, chewing ensures an optimum digestion throughout the digestive system as well as assures an effective metabolism and assimilation of the same thereafter by the body as a whole. It contributes, in a large measure, to a proper elimination of liquid and solid wastes at the end. Another important effect of a good chewing is that in the process the nervous system is alerted and through the appropriate centers in the brain the rest of the digestive system is informed on the kind of food in arrival. This act allows time for the production of the required enzymes by glands/organs concerned so as the digestive system to function efficiently.

The initial digestion in the mouth and thereby a good alkalization of gums and teeth, in turn, improves the proper health and maintenance of the latter as not-a- minor side benefit. At this juncture it may be opportune to mention the importance of chewing in obtaining an optimum benefit from the food ingested by making an analogy between human beings, both herbivores and carnivores, in particular with ruminant herbivores, which get all their necessary nutrients only from plants. They take their food to a quiet place and chew it as long as necessary at leisure to help nourish them well.

The food, which is inadequately processed and prepared in the mouth for the next stages of digestion processes, both in the stomach (of proteins) and in the small intestine (of carbohydrates, starch, fat, vitamins and minerals), may cause some digestion and assimilation problems throughout the digestion, assimilation and elimination tracts. As it is easy to guess the implications of chewing are manifold. A conscious attention to this first stage of digestion is therefore very important.

II. DRINKING WATER

What to drink, how to drink and the amount of water to drink are of the outmost importance for balancing the pH levels in body's fluids, keeping in mind that human body is made of about 70% of water and the blood over 90%. Water is required to sustain a proper digestion and assimilation of the food ingested and hitherto to ensure the maintenance of an overall wellbeing of the body, mind and the soul owing to a great extent to its alkalizing nature.

Pure water (H₂O) is alkaline. Its pH may increase (moving more to alkaline zone) or decrease (moving more to acid zone) depending on its useful or harmful mineral, microform (bacteria useful or harmful), and toxic contents. Owing to their mineral concentrations, spas (thermal waters) have their various healing powers to help heal different illnesses. Drinking of and bathing in thermal waters should, however, be under the control of experts in their specific fields.

What to drink? In the old days, they do, perhaps even now in certain corners of the world, people used to source their daily drinking water directly from springs. Such waters are usually natural and fresh. Their high healing effects are more suitable, however, to people living in the same environment or in similar habitat than those, which come from elsewhere. People know through tradition and by experience to use some spring waters and avoid others for normal drinking purposes. They, however, use some of them -not considered suitable for drinking- sparingly for healing certain disorders occurring in their bodies/organs or totally avoid them if they are proven to be poisonous.

In modern way of living, water is obtained either directly from the city/town/village supplies to homes (usually filtered and chlorinated to avoid effects of certain harmful ingredients acquired in the conduit) or from bottled water, natural or fizzy (naturally or artificially made). In the former it is more and more ascertained that an excessive amount of chlorine is harmful to the body (is claimed to cause cancer if mixed to water in large quantities). In the case of bottled water, they are normally potable but not fresh and their life force is spent; at worst they may include harmful substances overlooked in their processing, transportation and retailing. This is mentioned not to condemn their consumption, but to be conscious of possible dangers. Thus, the remaining means for healthy water supply are purifying (distilling, which loses all mineral content of water including the useful ones) or boiling (which increases the concentration of minerals including chlorine, if chlorinated tap water used).

Other alternative is installing cleansing apparatus (to be periodically checked and its filters be replaced) to the water supply systems, such as reverse osmosis systems, which eliminate all harmful ingredients as well as the chlorine but they do not completely deplete the water from its useful alkalizing minerals. Experts, through periodic inspections, should ascertain the continued functionality and suitability of these systems.

How to drink? Water should normally be taken between meals to keep the body's alkaline content unaltered. Some people may need or have to drink water while eating as well, such as diabetics and some others with digestion problems. In such cases they should drink their water in small sips by keeping it for an instance in the empty mouth to benefit from alkalizing effect of saliva before swallowing it down. In any case, drinking water should be avoided while eating protein foods as it causes an increased acidity in the blood stream and eventually in all tissues.

As cited above, protein-rich foods are digested in the stomach in an acid environment with the help of hydrochloric acid (HCl) secretions. In the process of conscious chewing, as alerted beforehand, HCl is made readily available in the stomach to digest the protein foods expected to arrive soon; such as all kinds of meat and dairy products, as well as some part of food legumes and nuts. All food once digested in the stomach and further processed in the rest of the digestive tract is metabolized alkaline and so assimilated by the body through the circulation of blood.

If water is taken while the digestive process has just started in the stomach, the acid content of the digestive juice already present there is diluted beyond the required level to an extent that more HCl is called for to build up the needed concentration. This act is likely to excessively acidify the food and the fluid content of the stomach to eventually cause an increased acidity in the body's fluids. This can simply

be avoided by conscious drinking of water as explained above. In this connection one comment about wine, especially red wine, which is known to have many positive healing effects on the body if drunk in small quantities with food. It is, however, to be sipped when the mouth is free of food and be kept there for a short while so to let it benefit from the alkalizing contribution of saliva.

The last but not least important is the fact that the food ingested, the air breathed and the hectic life styles experienced together with the continuing deterioration of the environment and living conditions have all heavily acidifying effects on the body. Water being alkaline by nature has great healing powers. More taken, the better it is for maintaining a good health, provided that it is not contaminated and proven to be in good quality. As much as possible, fizzy water and all other acidifying drinks should be avoided with or without food. It is particularly critical in the case of ill health.

In what quantity? To maintain a good health by sustaining a neutral pH level in body's fluids, a normal daily water intake should, therefore be substantial (at least 2-3 liters). This recommendation does not, however, have a scientific basis except that water helps keep the blood alkaline owing to its direct effect on the body's fluids circulating therein. The actual need for the amount of water to drink may vary depending on the temperature, humidity, physical exertion and other factors. Other fluids taken can also keep one hydrated and alkaline depending on their contents. The importance of keeping the body adequately hydrated and alkaline can never be overemphasized.

A glass or two (200-300ml) lukewarm water taken as a first thing in the morning help start the day well. Also drinking a glass of lukewarm water before going to bed is very useful in further alkalizing the body and providing a good night rest. A few drops of lemon or lime-juice make them healthier and also tastier to drink. To be well received by the body, water should always be drunk in small amounts –a mouthful at a time- and kept in the mouth for a moment and it should not be too cold. A glassful of water should never be drunk in one gulp.

AIR & BREATHING

Water and air are, without doubt, indispensable to any living creature to remain alive. Water is essential in dissolving and transporting nutrients such as oxygen and mineral salts through the blood, lymph, and other bodily fluids. Water also keeps blood pressure, acidity and the composition of all chemical reactions in balance. Only oxygen is, however, an element more indispensable than water to sustain life. It is alkalizing and healing by nature. Nowadays, it is difficult to find a pure air, that is, full of oxygen, above all in cities and in industrial zones. The best way to breath adequately clean and oxygenated air would, therefore, be to avoid entering into places where air is polluted and oxygen is scarce and be as often as possible near green areas where relatively good air could be found.

In a polluted atmosphere along with the oxygen one breathes lots of acidifying gases. All these harmful gases go to the blood stream and through it to all tissues, which form the various organs of the body. This process hinders the proper functioning of organs and thus adversely affects the healthy production of enzymes and hormones to ensure a proper digestion and metabolism of food. As a result, the body as a whole loses its good health. Consequently, serious disorders start to appear if adequate measures are not taken in time.

Our bodies need oxygen every moment and thus require its continuing supply. Oxygen is converted into cellular energy through its own metabolism, like food. Hence, improving oxygen intake, uptake and its assimilation is critical to maintaining the body's energy level as required and also to inhibiting disease and decay. To digest and assimilate food and to maintain all bodily

functions use up oxygen. It is also a primary stress modulator. That is proper breathing keeps the healthy stress and damaging distress in balance. Breathing is thus the key to a good health. Metabolizing our oxygen as food takes a certain amount of time. Most of us do not take the necessary time to breathe. Breathing should be done slowly to provide a high efficiency in building oxygen reserves and aiding in oxygen metabolism.

Thus a proper breathing and providing adequate oxygen supply to the body is indispensable for a good digestion of the food ingested and for protecting the body against illnesses. Otherwise the nutrients of food ingested is greatly lost by being eliminated undigested or else accumulated in the body causing a number of disorders such as respiratory illnesses, heart conditions, bacterial and viral diseases, and fungal and parasitic infections, and cancer. In another word, there is an oxygen-cost of living.

While antibiotics are not effective in viral infections, oxygen therapies have proven some success in infections such as flu, mumps, measles, polio, herpes, hepatitis, and possibly, AIDS. Ozone destroys the protein coat of virus cell walls and once gets inside can disrupt its DNA. Ozone was shown to inhibit the growth of cancer cells leaving normal cells unaffected. In clinical practice, Complementary Alternative Medicine (CAM) physicians, treating a variety of tumors as well as melanoma, sarcoma, and leukemia use ozone as a part of their cancer treatment.

While the best, easiest, cheapest and most effective oxygen therapy is a proper breathing, even while sleeping, in certain cases, especially in the absence of good quality air and in the case of many disorders oxygen therapy gives satisfactory results. Oxygen therapies provide more oxygen to the body in order to promote healing and health. This is called oxygenation. Some oxygen therapies oxygenate the body, while others work by oxidation. Ozone does both. www.breathing.com/articles/oxygen-therapies.htm.

Ozone is generally thought of as "smog" by the media, but this is an inaccurate definition. Ozone, a clear gas made of three atoms of oxygen, is formed when oxygen and ultraviolet light interact high in the stratosphere. Oxygen continually rises to the upper atmosphere to where the ozone layer is. There, the sun changes O₂ (oxygen) to O₃ (ozone). Being heavier than oxygen, this newly created ozone falls back to O₂, purifying our water and air, decomposing bacteria, molds, and fungi. It is the fresh smell of laundry dried outside, the fresh air at the seashore, or the fresh smell after an electrical storm.

Passing pure oxygen across either an ultraviolet light source or an electrical arc produces medical-grade ozone. When ozone is administered to the body, its third unstable oxygen atom readily splits and attaches itself to bacteria, fungi, mold, parasites, and tumors, and in the process of doing this, it oxidizes or destroys them. The stable oxygen molecule adds needed oxygen to the body and has a high pH of between 7 and 9, which is required to maintain a balanced pH and a healthy body. When used properly, ozone is exceptionally safe. It is usually applied in the form of intravenous drip, during which usually a sense of relaxation on the belly and in the whole body is experienced.

Other uses of oxygen for healing purposes also include application of pure oxygen to patients with chronic lung diseases and Hyperbaric-oxygen therapy (HBOT), in a decompression chamber as the one used by under sea divers, where pure oxygen is administered under pressurized conditions. This therapy is normally administered in a hospital and used for special cases such as gangrene, carbon monoxide poisoning, smoke inhalation, traumatic injuries and wounds, stroke and heart attack cases and those with multiple sclerosis and even with AIDS.

As cited above, the best method for people with no apparent symptoms is natural but conscious breathing. At every good occasion in fresh air a deep breath should be filled into the lungs to make a reserve. To go with that, one may make a habit of doing breathing exercise. The first thing in the morning either outdoor or indoor with windows open, taking 10-15 times a deep breath from the nose by filling and keeping each breathe in the lungs for a while and slowly exhaling it through the mouth will do lots of good.

For a good digestion, however, the following conscious abdominal breathing is recommended for the maintenance of good oxygen level in the body and hence good food metabolism. This exercise can improve digestion. It is practiced by stimulating energy points related to the spleen and stomach meridians (as used in Chinese medicine), while one simultaneously breathes deep into lower belly below the naval.

For doing it, spine is kept erect by firmly sitting on a chair with a firm seat. One remains relaxed, any tight cloths loosened, keeping feet flat on the floor in front of the body. The hand palms with fingers pointed downwards are placed on kneecaps as if warming them. In this situation the soft part of fingers testing knee reflexes as doctors do with a rubber mallet reach right below the knee. As one remains relaxed, firm fingertips gently press into this area. Keeping hands there with a slight pressure, the energy pathways running through the knee area are stimulated. Warmth goes from hand to the knee area. Now, while breathing-in a sensation is experienced as if one is gently breathing energy from the knees into the belly area. It is helpful to do this exercise at least five minutes after meals. www.breathing.com/articles/digestion.htm.

III. PRACTISING PHYSICAL EXERCISE

Muscular activity accelerates the rate of oxygen usage and thus indirectly ensures a good metabolism of food. Taking in large quantities of oxygen through physical efforts can condition the organism to function with more efficiency. It improves the functioning of organs and glands, increases the body's energy, supports the production of digestive enzymes and hormones as required for proper digestion and metabolization of the food ingested, resulting thus in proper nourishment of the body. Hitherto, one should complement healthy eating habits with physical exercise, which may though be different from person to person, can be gender-specific and be categorized by age and other factors. It is thus to be personalized.

The important point is that it should be done regularly, either every day in a less intensive-soft manner or three-four times a week in a relatively more intensive form. Preferably the whole thing should be a self-applied practice and basically include *breathing practice*, as already mentioned above in Chapter III; *relaxation practice*; *movements* of any kind; and *self-applied massage* such as foot & hand reflexology, easy to learn and to self-apply. Physical activity is, however a personal responsibility as to choice and form, when and where to practice, to make it as easy as taking a daily shower, brushing teeth, combing hair, dressing etc. For more information see: "www.WellPeople.com". The need for movement has become more apparent today than in the past as many illnesses such as coronary-artery disorders, diabetes and cancer are considered to be lifestyle health hazards to do with both poor diets and sedentarasim.

All physical activities involve *firstly*, *striking* or impact activity such as jumping, running, hitting a ball, jogging outside or inside, even as simple jogging movements while standing, for

sustaining a solid bone-mass; *secondly, strengthening* that is improving the muscle strength, endurance and oxygen uptake, especially important as one gets older, involving regular-brisk walking in fresh air, swimming, cycling, dancing, jogging if not possible to do it outside it can be done even at home as a regular kicking the floor up and down one foot after the other on one spot, if not slowly moving - in the beginning all has to be kept as simple as possible, in particular for non-athletic and usually sedentary people to make it attractive and enjoyable for them, to gradually intensify - ; and *thirdly, stretching* for enhancing flexibility, including exercises done first thing in the morning while lying in bed, then lying flat on one's back on the floor, relaxing for a few moments and letting the tension and stiffness seep out of your spine and muscles and doing a number of stretching exercises such as rocking to left and right, raising one knee first and then the other towards the chest, stretching arms and the neck etc.

One may invent, however, some others to suit to one's own needs and liking. Many such activities one can also do anytime of the day and anywhere such as stretching whenever the urge comes naturally.

In effect these are to be part of people's normal daily activities and done every moment available and be combined with every other activity one does, first intentionally then naturally. One is, however, doing them unconsciously if every movement required in daily routines is done naturally and without inhibition. At times a symptom may indicate the need for a conscious exercise to invalidate the related alarm. Some activities may be built-in normal living. These may include, at least, a daily 1-2 km. of walking; an hour of gardening a week, if possible; climbing stairs, one flight or two a day; house cleaning 2-3 times a week; dancing 2-3 times a week; and the like, which oblige the body to move naturally involving all movements needed to maintain health.

The body has a built-in repair capacity. If not fully damaged it heals itself provided that the aid giving by special exercise is not wild and too intensive. In effect, too intensive exercise, such as sweat exercises, increases the stress in the body and raises the level of acidity; thus, the balance of the pH level within the body's, otherwise, healthy fluids is temporarily lost. Some rest heals, however, such one time stress.

IV. FOOD COMBINING

People in many parts of the world eat without thinking. They, all the same, naturally achieve proper combination of their food, as induced by the conditions of their environment or culture or as a part of their upbringing within their families and communities. If these people continue living in their own natural habitat and conditions without being influenced by external intrusions they would continue living healthily provided that sufficient food were available. In such situations they would also be genetically protected, except in some rare cases. Such people might not need to think about proper food combining.

Hence, the following indications may not directly concern them except they remain as a guide to verify the suitability of their eating practices. Normally, the body is adapted to digesting common combinations of foodstuffs grown in their natural environment. In many cases the problem starts emerging when people for a variety of reasons start adopting new food and new

lifestyles, which may at times oblige them to stay away from their natural eating conditions and habits. In such situations some may adapt quickly to the new situation. This happens if they have a solid and balanced health with no digestive problems deriving from eating different foods with different combinations and within different eating environments and conditions. Some others may start experiencing digestive disorders and/or symptoms of varying kinds. Pathogenic elements are attracted to and feed on undigested or partially digested foods. At this stage one may need to look into the kind and the state of the food ingested and the food combination made as a possible cause, of course among other factors concerning proper nourishment principles. Most ill health is resulting from a lack of nourishment, mal-nourishment, if not gradual or instant intoxication, and from mal digestion and assimilation of food. In such cases, as a self-defense, the body first depletes its nutrient deposits from bones, muscles and organs. This is the stage one needs to feel alarmed and take some conscious action before symptoms turn into deeper and more serious health problems.

The first informer of the status of health is one's external appearance. How one looks on the outside is the mirror of what is going on inside. Eyes, skin, hair and body's agility/energy and overall behavior reveal lots of information. More specifically one has to pay serious attention to the alarming observations at two major stages cited below. These are also signals of increasing acidity in the body's fluids, as a result adversely affecting the pH balance. The first stage that is the appearance of 'warning symptoms' could, in many instances, be handled personally. If the second stage is reached, that is the appearance of 'advanced symptoms', most likely an expert help will be needed.

1. Warning symptoms, such as anxiety, hyperactivity, irregular heart beat, irregular blood pressure, high cholesterol levels in the blood stream, especially increasing the low density lipids (LDL), usually coupled with a decreasing level of the high density lipids (HDL), breathing problems, stress, skin problems, steadily weight gaining, food allergies, nausea, depression, mild headaches, joint pains, rheumatism, muscular pain, sensitivity to odors and chemicals, strong smelling urine, insomnia, difficulty in getting up in the morning, morning stiffness, low energy in general, cold feet & hands, numbness, white coated tongue, metallic taste, diarrhea/constipation/excess gas/ putrefaction in the digestive tract, colitis, excess mucus or stuffiness in the nose, earaches, bronchitis, sinus infection, herpes, loss of concentration and memory, bacterial – viral - and fungus infections, urinary infections, cystitis, hair loss.

2. Advanced Symptoms, such as obesity, pneumonia, leukemia, tuberculosis, severe chronic fatigue, high blood pressure, serious heart problem, Multiple Sclerosis, severe chronic fatigue, all forms of cancers, lupus, rheumatoid arthritis, fibromyalgia, myasthenia gravis, neurological disorders including attention deficit, Alzheimer, AIDS.

The warning symptoms indicate that the body started to have some difficulty in balancing the pH level in the blood with a tendency to turn acid. That is, the pH level in the blood tends to go below 7, when the body, as its natural defense, to keep the balance, starts extracting the required minerals from bones and tissues to raise the level of the pH. Thus, body's reserves of alkalizing minerals such as calcium, magnesium, potassium and sodium are exhausted, the strength of the bones and muscles are weakened and the functioning of essential organs is disrupted. The body tends to be ill and one loses the sense of wellbeing. This is the real measure of a good or ill health and more important than quantitative results of various analyses. At this stage, food and its combining start to become important to observe and accordingly act on. In determining the best food and its best combining, the prime rule is learning from one's own eating practice. One becomes her/his food scientist and conducts applied research under one's own close attention and observation.

The following clues obtained from a variety of sources, which are, however, still in continuing scrutiny and verification by experts in this field, should be considered useful indications and starters for personal research. Doing one's own experiments starting from these hints is also an excellent way of acquiring consciousness through the process of personal proper nourishment. This is also a good step into raising people's level of overall consciousness, thus positively affecting their life, their relationships with others and with their environment as well as with the society at large.

Food combining principles:

Nutritional principles of the normal science of nourishment have the concepts of *macro-nutrients*, that is carbohydrates, fats, and proteins; and of *micro-nutrients*: vitamins, minerals, water and also air. These principles should be everybody's patrimony. An optimum health requires that the organism should be provided by macro-nutrients and micro-nutrients in adequate and balanced quantity, which changes with environment, season, age, sex, and with the genetic and physiologic constitution of individuals. Also behavioural, cultural, economic and ecological factors affect the health. A generalised formula would be to attain equilibrium between two types of nutrients.

This can be attained by following a diet, with which a large part of energy is derived of foods of plant origin such as vegetables, fruits and various grains; less from foods of animal origin; and much less from the foods rich in animal fat, sugar, starch and salt. Among macro-nutrients, carbohydrates are the principle sources of energy required for all functions of the human body and for muscle strength. They are necessary for the digestion and assimilation of other kind of foods; they help to regulate metabolism of protein and fat.

Fats, on their account, need carbohydrates for their transformation in the liver. Proteins are of primary importance in the growth and development of all tissues of organisms. They are the most important material source for building muscles, blood, skin, hair, internal organs, including brain and heart. They help regulate the blood to ensure that tissues are neither too acid nor too alkaline with a neutral pH level in the blood. They also help to regulate the quantity of liquids in the body.

On the side of personal food choices how we eat, how well we chew, the quality of food we choose, how we feel, eating conditions and environment, and their combination over time greatly influence the health of the digestive system, hence determine the degree of one's overall well being. The need for proper food combination arises from the fact that, different food elements, such as proteins, fats and carbohydrates to be digested require at times conflicting types of enzymes.

Eating several incompatible foods at the same time may inactivate certain enzymes normally created in the course of the digestive process. Human body, for that matter bodies of most of the animals, are not equipped to process many concentrated foods the body attempts to digest and assimilate at the same time. One learns this from the results of what one eats. Much unknown pathology appearing from time to time may be attributed to eating concentrated foods or eating food badly combined. Thus, proper food combining starts with a good understanding of the characteristics and digestive requirements of different food groups. Groups important to know in order to understand the reasons underlying a proper food combining are presented below.

1. **Proteins** exist, to varying degrees, in meats of all types, milk and milk products, nuts, olives, all cereals, food legumes, avocado, and all fresh foods. Meat, milk, most of milk products such as cream and cheese, cereals and some of nuts and food legumes are acidic;

2. Starches, sugar, syrups and sweet fruits:
 - a) Starches are found in all cereals, food legumes, potatoes, chestnuts, peanuts, squash, pumpkin, banana and plantain;
 - b) Mildly starchy foods include cauliflower, beets and carrots;
 - c) Syrups and sugars exist in brown sugar, white sugar, milk sugar, maple syrup, cane syrup and honey;
 - d) Sweet fruits such as banana, date, fig, raisin, grape, prune, persimmon, mangoes, papaya, cherry and dried pear;
3. Fats exist in lard, fat meat, milk and milk products, butter, cream, nut oils all seed oils, olive oil, nuts and avocado;
4. Acid fruits include orange, grapefruit, pineapple, pomegranate, tomato, lemon, lime, sour apple, sour grape, sour peach, sour plum, almost all are metabolized alkaline when digested owing to their very low or no sugar content;
5. Sub-acid fruits include fresh fig, pear, sweet cherry, sweet peach, sweet apple, apricot, and sweet plum;
6. Almost all fruits are alkaline if not mature and sweet, including some of the dry fruits such as almond;
7. Non-starchy and green vegetables include all succulent vegetables regardless of color such as lettuce, celery, endive, chicory, cabbage, cauliflower, broccoli, Brussels sprouts, spinach, okra, cucumber, asparagus, chive, mustard, turnip, kale, rape, green corn, eggplant, radish, parsley watercress, rhubarb, onions, leeks, garlic, zucchini, beet tops, turnip tops, bamboo shoots, dandelion, and sweet pepper; they are all alkaline;
8. Melons including watermelon, muskmelon, cantaloupe, banana melon, and other type of melons make a group of its own and mostly alkaline if not too sweet.

Mixed foods are not found naturally in nature. While animals do not mix their foods, human beings do. They may, however, consciously benefit from the following principles by intelligently combining their food among the above listed food categories to prevent indigestion and poor food assimilation. Some exceptionally healthy and genetically supported people may overcome problems arising from an improper food mixing by simply chewing the food very well at its entry point, i.e. mouth. As an all-round principle, food combining should be such that the resulting mixture ensures an optimum digestion and assimilation of food ingested and hence maintains an optimum health.

The ultimate measure of the verification is the pH level in body's fluids such as blood, saliva and urine, of which the easier and more reliable for periodical testing is the pH levels of saliva. More is to come on this point later.

-Acid-starch combining: Acids, even mild acids, reduce the ability to digest starches by inactivating ptyalin in saliva. If saliva pH is low (acidic), starch digestion will be low. One should therefore ideally eat acid foods and starches at separate meals to get maximum benefit from them and not to have indigestion with all its consequences;

-Protein-starch combining: Foods like starch and protein if eaten mixed will be hard to digest. As the stomach secretes different juices for protein (hydrochloric acid/pepsin), which inactivate the ptyalin for a continuing starch digestion. If protein and starch foods reach together into the stomach, HCl, as an acid needed to digest protein, is suppressed by acid foods, i.e. starches, when eaten together. Similarly, both fruit acids and acids resulting from fermentation negatively affect protein digestion and result in putrefaction. Acids also inactivate lipase, which digests fat. Pepsin, which digests protein, is in turn inactivated by an alkaline mixture, which is stimulated by ingesting starches.

One should therefore ideally eat protein foods and carbohydrates as well as all other acid foods and protein foods at separate meals. If carbohydrates and proteins are to be eaten in one meal, first carbohydrates should be eaten -as properly chewed in the mouth- not to stagnate later along side the protein and interfere with its digestion in the stomach, which is the only place for protein to be digested. Carbohydrates then move directly to intestines, as already half way digested in the mouth, for further digestion and assimilation; acid foods especially acid fruits should be consumed separately far from all others, much before or much later;

-Protein-protein combining: Different protein foods have different composition, which call for different juices for digestion. Mixing different proteins will result in less efficient digestion as a whole. One should therefore ideally eat one concentrated protein food at a meal;

-Fat-protein combining: Fats suppress secretion of gastric acid; considerably reduce stomach's digestive ability, thus delaying digestion of protein by several ours, if not aided by fresh green vegetables eaten before and still existing in the stomach. It would certainly be better if fats and proteins were consumed at separate meals.

-Sugar-protein combining: Sugars are digested only in the small intestine. When eaten alongside the other foods its passage to intestine is delayed resulting in fermentation and in yeast culture production. The latter is multiplied by warmth, moisture, before sugar reaches the intestine only where its digestion takes place. While sugar in the mouth stimulates the production of saliva it is useless, as it does not require ptyalin for its digestion. This suggests that sugars and starches should be eaten alone or together with vegetables or before everything else, never with proteins. Thus well-known and well-liked by many people especially in western cultures such as chips & fish, French fries and hamburger, sandwiches with any kind of meat or cheese inside are hard to digest and may create several indigestion problems sooner or later if eaten too often. If eaten, however, they are to be accompanied by lots of raw vegetables. Perhaps ketchup and the like have been invented to meet this need to an extent, - a point to ponder on.

-Melons of all kind: They do not combine well with other foods. It is a category of its own kind. Melons require very little digestion and that is done only in the intestine. If eaten with other kind of food its arrival to intestine will be delayed and gas will result. Therefore melons are best to be eaten alone between meals on their own or before everything else. This rule also applies to many fruits. It is best if they make a meal on their own.

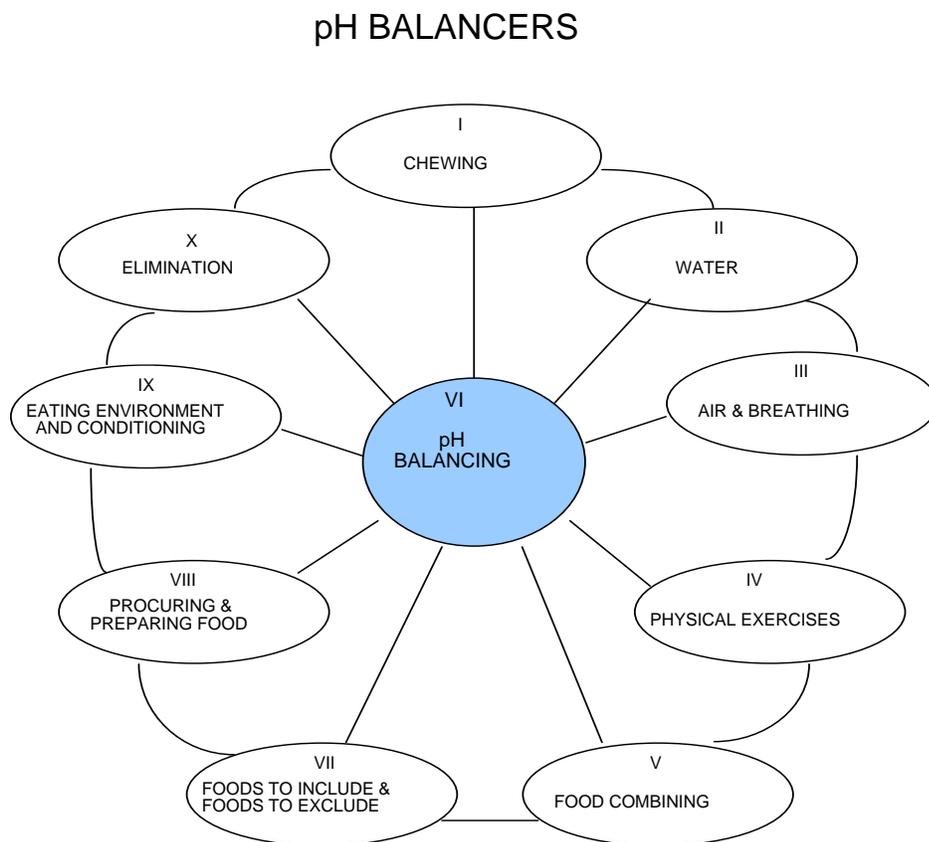
-Milk: Similar to fruits, milk combines very poorly with other foods because of its protein and fat content. It curdles in the stomach. If other food is there milk will surround them, adversely affecting their digestion resulting in putrefaction. Combining milk with cereals or starches is, therefore, not a good thing

to do. Yogurt is not like milk. It usually mixes well with cereals and starches. There are, however, differing opinions on the consumption of yogurt. To establish a personal opinion, the best thing to do is to conduct a personal research on its use, alone and together with other foods one by one and observe the after-effects in each case.

- **Deserts:** They do not combine well with other food categories. They should be treated like sweet fruits and preferably be eaten on their own, never on top of a meal, especially on a big meal. It will mix up with and disrupt the digestion process and cause indigestion with all its consequences and putrefaction to follow.

MAINTAINING A BALANCED pH LEVEL IN THE BODY'S VITAL FLUIDS, i.e. saliva, blood, urine, lymph

This section is the central piece of this article. With it, it is expected to make a determining contribution to the understanding of the importance of balancing the pH level of the body's main fluids. Successes or failures in all other interconnected areas/principles elaborated throughout the paper will all be affecting or affected by it. The figure below illustrates the central position of this principle.



The act of acid-alkaline balancing in the body is, in effect, the major healing process. Unbalanced pH may be the signal of almost all pathologies and the mal-functioning of the body's one or more organs. Though both extremes – acid or alkaline – are not desirable, the

present conditions of the environment, improper nourishment, scarce food quality and improper life styles of many people tend to break the pH balance in their body, moving it, usually, to the acid-zone. This development promotes the creation of an environment conducive to the emergence of many diseases. Acids corrode cells and tissues. In effect, many remedies are alkaline by nature and help the body to correct its acid-alkaline imbalance in the environment in which cells and tissues live. The pH is therefore a reliable detector indicating that something in the body is not working well, even before symptoms corresponding to certain pathologies appear. In health maintenance, decreasing the body's acidity and increasing its alkalinity is, therefore, of utmost importance.

Previous chapters have, to a large extent, prepared the ground on how the acid-alkaline balance is achieved. The following chapters will provide more of these to further complete the process. This is, therefore, a step for reflection on what is so far said so as to get ready for the assimilation of the rest. Just to remember once more, pH stands for potential hydrogen and is a measure of the relative number of free hydrogen (H^+) ions in a solution. An acid environment has many free ions and an alkaline environment has only a few. Either extreme may be very reactive on its own way.

The pH level is normally self-controlled by the body, as mentioned before. As long as the body is able to regulate the pH level in body's fluids and cells the health is promoted and diseases are avoided. Its optimum level is around 7. It is exactly the same healing principle that makes soils healthy to efficiently produce our food. Its optimum pH is around 6.8 as an ideal level to regulate chemical reactions between roots and nutrients of plants such as legumes, cereals, and vegetables as well as of pastures. The more acid the soils are, the less energetic their products become owing to a reduced level of oxygen within them. That is why aeration (oxygenating them) at the roots of plants helps increase their healthy growth with a slow release of oxygen. Similarly, using artificial fertilizers improves the soils' pH regulating function.

The same principle also applies to the fish life, which has its optimum pH is around 7. Fish are very sensitive to pH changes in water. They quickly perish when acidity increases in the water pond in the case of fish-culture. Aeration is therefore an essential and obligatory ingredient of fish-culture. The pH of pristine seawater measures from 8 to 8.3, meaning that the ocean is naturally somewhat alkaline. The recent studies in this regard are alarming.

Much of the carbon dioxide given off fossil fuels goes into the ocean, where it changes the pH balance of seawater, increasing its acidity. The change in this direction in ocean chemistry that ensues, make it more difficult for marine creatures to build their hard structure out of calcium carbonate. This development threatens the survival of a variety of organisms, including corals and tiny snails that form a key link in the marine food chain, especially in the upper layers of Southern Ocean.

An analogy with plants and fish life makes it easy to understand that pH has a lot to do with the amount of oxygen absorbed in the blood and its use in the body. This also implies that oxygen therapies are to do much more than just adding oxygen into the blood stream and to body's cells. They act as alkalinizers to balance an increasing tendency moving towards acidity.

Most degenerative diseases are usually preceded by a long and unsuspected period of false pH balance. The body makes an utmost effort to balance the blood pH level by keeping it at its optimum level by extracting the necessary minerals and nutrients from the body's own sources, as mentioned above. Unexpectedly a fatal stage is reached when the body is not anymore capable of keeping up with the effort required for this self-preventing and self-healing process.

All natural deaths may be occurring when, in the body, a stage with progressive acid saturation is reached. As a rule of thumb in maintaining a good health and checking an immature aging process will, therefore, require paying a major attention to decreasing the acidity and increasing the alkalinity as an effort to keep an optimum pH level within the body. Acquiring and maintaining ability for proper pH cycling is therefore equal to having the ability for extending a healthy life. Dr. Bernard Jensen says: *"People do not die, they kill themselves"*.

Measuring the pH levels within the body's major fluids and interpreting the findings in terms of conscious and responsible actions

Some information about measuring the pH is herewith given in order to help readers understand better what the measurement of pH levels involve. It is, in brief, a measurement on a set up on a logarithmic scale from 0 to 14, each number representing a pH level in the body's fluid under examination. Being in a logarithmic scale signifies a tenfold difference between levels, that is for example, ten times increase from 6 to 7, meaning a ten times more free hydrogen ions, then, similarly from 6 to 8, $10 \times 10 = 100$ times more of them. Higher numbers indicate more potential to absorb hydrogen ions (acid ones). The higher a number above pH 7.0 the more alkaline the reading is. For example, at 37 degrees Celsius body temperature, the pH level at 6.8 is considered to be neutral. The ideal level is 7.4. Pure water's pH is 7.0. Hydrochloric acid's pH may be as low a 1.0 and a strong ammonia solution may be at the level of 11.0 and sodium hydroxide at 13.0.

Rapid pH changes have, however, a damaging effect. Thus improvements for corrections should be slow not to damage the proper functioning of the internal regulating system as our blood chemistry is very sensitive to even minor changes. For that matter intended corrections are to be made through the right foods and their proper combination and respecting all other interfering principles dealt with throughout this paper rather than taking supplements except for special cases under a reliable expert control. This is a very important point and also means taking a responsible and conscious attitude towards one's own nourishment. A heavy meat eater cannot be turned into a vegetarian overnight and even over a month or so. A long period of transition may be needed if such a transition is required or desirable. The transition period may change from person to person. It also depends very much on the stage of physical and psychological health of the person concerned. Once the requirements of a proper nourishment are well understood people will find out what kind of food to eat and what kind of life-style to pursue. One may eventually find the best suiting foods and food combinations producing balanced pHs in various bodily fluids. In searching such suitable foods, their combinations and all other related principles, which have their role to play in achieving proper nourishment, one does not need to go very far to find them. Many of such recipes are surprisingly found within one's own tradition and culture. They may have been affected by certain circumstances and lost to some or large

extent but the knowledge about them will still be within the memories of the parents or grandparents of many young people or even still being practiced by a number of traditional families.

Changing environments and the need to adapt to new situations may, however, necessitate new learning. To meet such needs there are many good sources, which provide useful information to learn from and test by trials and errors. One may eventually adjust to personal requirements by careful observation of possible symptoms and by measuring, pH levels at certain intervals and interpreting findings as basis for making suitable adjustments to one's approach to own nourishment. Several suitably targeted websites exist on the Internet and books in bookshops to satisfy initial needs, mainly of the beginners or of the people with special curiosity for a change. Some references included in the reference list of this article are reliable sources for this purpose.

The pH reading is perhaps the best indicator of the status of health with or without symptoms. A point to be aware of, however, is that in measuring and interpreting the pH levels one should be aware that, at times, extreme acidity may test as alkaline because of the cyclical response of the body to the acid condition. This makes the urine pH levels are unreliable for deriving conclusions regarding the status of health, mostly because it is measuring at the elimination stage and affected by variety of factors in the process.

Each cycle becomes progressively more acid. What is occurring is a radical effort of the body to keep blood pH within range. It does this by dissolving alkaline minerals in the body such as bones, collagen, cartilage, tendons, muscles, anything that can yield alkaline material to buffer acids to supply needed materials to blood while depleting bicarbonates or bicarbonate catalysts. Kidneys can excrete hydrogen ions as hydrochloric acid as well as they produce ammonia. Cycling from acid to base can still mean the excretion of excess acids. This is similar to what the body does in an auto-immune disease, when the body is overloaded. Free radical damage and acid creation go hand in hand. Taking many pH readings are needed to observe the changes and making connections with relevant factors for more reliable interpretation of these readings in terms of improving the understanding and taking the necessary corrective measures.

The pH levels in the blood may also be misleading as the body makes all the efforts needed for balancing the pH within the blood stream as long as it can at the expense of alkalinizing mineral reserves in various parts of the body, already mentioned above. The only reliable pH for personal observation and extrapolation without requiring a professional support in judging the overall behavior of the body remains to be the saliva pH reading. It has to be alkaline. The digestion of a food within the carbohydrates group is first digested in the mouth as alkalinized by ptyalin, a part of the saliva. Steady alkaline saliva pH readings indicate an overall wellbeing and good health of the person concerned.

In conducting an experiment saliva's pH should be periodically measured while eating and its behavior be observed in order to get a reliable information out of pH readings. If no symptom exist the urine pH readings may also result alkaline as all food enters into the body is assimilated in an alkaline environment as it should be. This is quite an assurance also to keep a healthy internal environment. Small variations in the urine pH may not be worrisome in such cases, as they may result from digesting now and then some unsuitable food. Here again the importance of

chewing food well proves its value and importance. Individuals should learn to measure their saliva pH often as an essential control mechanism to anticipate any disorder and prevent it in good time.

When saliva pH levels are in good order, one feels energized as the body eliminates carbon dioxide or converts it enzymatically to bicarbonates. Thus bicarbonates and minerals are retained; the liver functions well, oxygen is being absorbed and carbohydrates are being broken down and becoming available as nutrition for brain; cellular metabolism continuously creates energy. At this stage, the body can easily handle the day-to-day stress better than others with not so well balanced pH in their bodily fluids. Steady alkaline saliva readings also indicate that body's alkaline reserves are in good supply. They are not being depleted meaning that to maintain the blood pH level neutral there is no need to extract from the alkaline mineral reserves. Otherwise disorders start manifesting in various organs and tissues of the body resulting in an ill-health.

V. FOODS TO EAT – FOODS TO AVOID

In the context of choosing the right food for maintaining a good health or healing a disorder, what counts the most is not what to include in or supplement to our diet, but what to omit from it.

For achieving a balance in the acid-alkaline level (i.e. registering a neutral pH level, if not slightly skewed to alkaline) in body's fluids, it is of utmost importance to pay attention to what we are eating. This will help us to eventually detect if certain foods do not agree with our organism and result in a number of disorders manifested in the form of a variety of symptoms.

The following grouping gives an idea for conducting a personal research to eventually avoid a harmful food or a harmful food combination in our diet and for healing a disorder, as well as to replace them as needed with the beneficial ones, also through testing. Each person digests and metabolizes the food differently, depending generally on one's physiologic constitution, age, life style and environment. Recent findings indicate that the blood type (O or A or B or AB) of an individual also affects her/his digestion and assimilation of food.

Excessive use of foods that move pH to the acid-zone to be avoided (the kind is to be verified by conscious personal testing and observations):

Foods within protein group are usually acidic. They include food such as red/white meat, fish, processed milk and milk products (while milk freshly produced by animals is alkaline), eggs (at the edge); some nuts including peanuts, pecans, pistachio; some food legumes such as red beans, kidney beans. Yeast and mushrooms are highly acidic and ideally they are to be avoided. As a general rule, any food, which makes you feel colder when eaten, is a suspect.

This group includes most of the starch and grain products such as foods made of flour and rice as well as saturated fat such as butter. If eaten, they are to be taken in small quantities and kept under observation. As a general rule, foods from this group should not exceed one-fourth or still better one-fifth of the food taken in one meal as measured visually not by weight. Preferably (especially in cases of healing an existing or potential illnesses manifested as symptoms) meat

and starch groups should never be eaten during the same meal. Either one is to be accompanied with ample portions of vegetables; of which if not all, the half should better be raw.

Almost all soft drinks, alcohol, coffee and tea are acidic and are to be avoided or their consumption considerably reduced. Herb teas are exceptions, though most of them being diuretic, thus dehydrating, their consumption should not be exaggerated either. Sugar is acidic. It is to be used sparingly if not totally avoided. During the meal usually one should not drink water if not essential for some reason, such as in diabetic cases. Not mixing water with food is especially important while protein foods are eaten as mentioned under the Chapter II.

Foods that move the pH to the Alkaline-zone are usually most welcome (their effects are also to be verified by conscious personal observations):

In rare cases the level of pH reaches extreme alkalinity levels. In most cases to obtain a balanced pH level in body's fluids, alkaline foods may need to be added. For example, drinking a glass of lukewarm water with some lemon or lime drops, as a first thing in the morning and before going to bed is alkalizing, thus very beneficial also for normally healthy people, to help maintain their already good health.

In the same vein it is useful to have a glass of grapefruit or orange-lemon mixed juice diluted half-and-half with water as a snack between meals. It also pushes away the sense of hunger owing to their slower digestion and assimilation than those of the snacks higher in carbohydrate, starch and especially in sugar content. The latter are digested quickly and as a result, an urge for more food is felt.

Most fruits (preferably less sweet ones) except plums and prunes are alkalizing. Among them, lemon and less sweet citrus fruits, tomato (is a fruit), olives, cucumber, lettuce (not iceberg), avocado, cantaloupe, peaches are exceptionally beneficial. Almost all vegetables are alkalizing especially when eaten raw. To obtain an optimum benefit from them at least half of the vegetables eaten must be fresh and raw, preferably organically grown and as practicable as possible to be locally produced seasonal foods.

Exceptionally good vegetables include the cruciferous group such as broccoli, Brussels sprouts, cabbage, cauliflower, onion, garlic, pepper (all colors), celery, beets, potatoes (for limited consumption) and watercress and all seed sprouts; some of food legumes such as lentils, peas, chickpeas, mungbeans, lima beans; some grains such as millet, buckwheat; wild rice, whole rice, fiber; most of the seeds such as sesame, sunflower, pumpkin, linseeds/flaxseed; most of nuts, exceptionally good almonds, hazel nuts and chest nuts (for limited use) and for limited consumption polyunsaturated oils (Omega 6 group) such as flax seed, sesame seed, sunflower seed, grape seed, and exceptionally useful cold pressed olive-oil and grape seed oil, preferably used fresh. Flaxseed and walnut seed oils contain also omega 3, normally rich in blue fish. Almost all spices are alkaline. They are, however, to be used in small quantities as they have medicinal effects.

Foods to avoid in order to combat obesity and heavy weight and cardiovascular disorders

Controlling obesity & weight control: According to one theory, most foods, which have high sugar and starch content, namely high in the Glicaeamic Index (GI), raise the level of acidity in bodily fluids and tissues, and cause obesity. It is claimed that over-secretion of hormones, rather than excess calories is the main cause of obesity. This is, namely, a chronic and excessive secretion of the key metabolic hormone by the pancreas, that is insulin hyper-production. The excess insulin inhibits the proper breakdown of fat and causes the accumulation of the unbroken-down fat in the body. This process is usually triggered by certain foods, principally by highly glycaemic carbohydrates. While there is still debate among dieticians about the validity of this theory, it may be worth trying it personally and decide to validate or not.

To go with the ground of this theory, the glycaemic potential of proteins and fats *per se* is considered to be negligible as they contain very little sugar. Ensuing from it, attention would therefore need to be paid to avoiding carbohydrates with high Glicaemic Index. Such carbohydrates, which are hidden in most processed foods, stimulate metabolic reactions that channel those foods into fatty reserves, while hindering bodies' normal energy-burning processes. In the same vein, avoiding high GI carbohydrates by replacing them with low GI carbohydrates and also avoiding some fats, such as saturated and some of the polyunsaturated fats as well as fatty meat, may also mean avoiding obesity and help losing weight.

More specifically, to combat obesity or win over steady weight gain one must exclude carbohydrates with GI values higher than 50 (in extreme cases excluding those with higher than 35) to keep the insulin response as low as possible. This category includes all refined carbohydrates, white bread, white rice, white-pasta, corn, corn flakes, risotto, cooked carrots, fruit yogurt, over-cooked pasta, some starchy vegetables, such as potatoes, pumpkin, and fruits like banana, melon, watermelon, certainly all sweet foods and drinks including beer, fruit jam sweetened with sugar and milk chocolate. These foods should be replaced by those carbohydrates, which have their GI value under 50 or even under 35. These foods include, among others, quinoa, millet, brown bread, brown rice, wild rice, whole grain spaghetti/pasta (cooked al dente), raw carrots, most pulses etc. respecting proper food combinations and all the pH balancing principles described throughout this article. Some exceptions may be allowed such as wine, especially red wine, dark chocolate (around 70%) and coffee (Arabic 100%) but in moderate quantities.

Foods in the high GI scale do not only affect one's weight but they can also damage the overall health. Going towards lower GI scale foods may also reduce the cholesterol and triglyceride levels in the blood. It can also prevent the onset of Type II diabetes, which commonly affects those who are overweight and with poor glucose tolerance. It will be useful to be acquainted with the GI values of various foods, especially in cases of obesity, diabetics, and cardiovascular diseases, as these pathologies are the harbingers of many other disorders.

In a nutshell, low-GI foods are slower to digest, so one feels satisfied for longer contrary to the effects of high-GI foods; thus, keeping insulin levels low, inhibits the formation of fat and assists in the conversion of fat back into energy. The key of losing weight is therefore to eat in the first

place a low GI diet. This is to be supported by a choice of food with low fat, particularly saturated and some unsaturated fats, which are usually hidden in processed foods, as well as choosing among low calorie foods as practicable as possible.

Preventing cardiovascular diseases, GI-cholesterol connection: In this context, it will be opportune to say a few words on GI and cholesterol connection as many is frightened by high cholesterol levels and uses drugs, at times most dangerous themselves.

In reality cholesterol is vitally important for function of every cell in the body. It is the most common organic molecule in the brain. It is essential to the formation of 'synapses', which allow nerve cells to communicate. It regulates function of cell membrane 'enzymes' that facilitate key chemical reactions. In reality, notoriously known 'plaque' consists of oxidized cholesterol, which attempts to repair the damage to the arterial wall as a part of the intrinsic preventive system of any living body. Arterial health is the key to preventing heart disease.

Usually condemned high cholesterol, especially high LDL (low- density-lipoprotein) itself is not damaging. But when it is taken up into the artery wall, it becomes oxidized or modified and it has damaging effects on cells in the artery wall. In this process it is in fact not the larger LDL but the small LDL (VLDL- very low level lipoprotein) is linked with arterial diseases and blood clots. Triglycerides (essentially blood fat) are in effect primary responsible agents in these phenomena. Though triglycerides are potentially useful as fuel when absorbed into muscle cells, its parts not used as fuel wind up in the liver where they are converted to dangerous VLDL and released back into the blood stream. So keeping triglycerides under control is extremely important for cardiovascular health.

They are produced in the body by the conversion of glycogen to triglycerides as a direct result of eating high-glycaemic carbohydrates like sugar, not fat as one might erroneously think. For this matter, on the side of the usual formula of LDL/HDL ratio in establishing the risk factor with a highest figure of 5 not to go above, Triglycerides/HDL ratio will have to be considered as another and perhaps more important risk factor, with highest figure of 2, not to surpass to prevent cardiovascular disorders. Again avoiding high GI indexed foods becomes an important point to keep in mind in the selection of food, especially by people at risk. "<http://besthealthsecrets.com/cholesterol-g.html>"

Effects of blood types on food selection

There is a theory that blood types also influence the choice of the pH balance of foods. Blood groups are a set of solutions to a host of environmental variables to ensure the survival of the human race through adaptations to changing conditions. It is a key modulator of the digestive system, metabolic activity and immunity; a kind of a physiological balancing factor.

According to recent findings the chemical reaction that occurs between the food eaten and one's blood type is part of one's genetic inheritance. The blood type diet is based on the idea that different blood groups adapted to different types of foods containing different lectins, chemicals that can agglutinate red blood cells, so called red blood cell stacking. When one eats a food containing protein lectins, that are incompatible with one's blood type, antigens target an organ

or an interrelated organ system (kidneys, spleen, liver, stomach, brain, etc.) and begin to agglutinate blood cells in that area.

The most dominant blood type group in the world is the Type O people representing about 45-50% of the world population. Our first direct ancestors – Co-Magnons - likely emerged in Sub-Saharan Africa from around 170 000 to 50 000 years ago, when Group O reached its full expression. The people fed themselves with what they could procure by hunting and gathering around the area where they lived. They were then perfectly carnivorous and herbivorous and their digestive processes were naturally suited to the kind of food they procured.

Blood Type A is considered to be a later development following the settlement of people to produce food through agriculture, hence, mostly of plant origin and through the domestication of animals, to meet the nutritional requirements of increasing population. Digestion process became more complex and required a number of adaptations to the changing conditions and had to overcome the reactions to the available foods and to their combinations.

For example, lectin in lima beans cross-reacts with the type A antigen targeting digestive enzymes and interfering with insulin production. In such a case, the type A diet is a way to restore the natural protective functions of one's immune system, reset the body's metabolic clock and clear one's blood of dangerous agglutinating lectins.

For type A group, representing more or less 40% of the world population, and mostly residing in the Mediterranean and European regions, a vegetable heavy diet (alkalinizing in nature) with a reasonable amount of meat is found to be the most beneficial one. Vegetables have medicinal effects in healing many of the blood Type A group's disorders resulting from the high acidity in their body.

Type B represents about 10 % and mostly found among non Indo-European peoples but of likely Asiatic-Caucasian origin.

Within all these categories an AB type is emerging as a recent phenomenon with a presently negligible ratio of 1-2% and mostly as a result of the intermingling of types A and B. These are certainly approximate figures and distributions over the world. Thus, some daring conclusions should not be drawn out of them.

VI. PROCURING AND PREPARING FOOD: from production to cooking up to bringing to table and eating

While there is no doubt that appropriate food and nourishment is the best way to protect the body against ill health and disease, in the end, the kind and quality of nutrients provided by food ingested and metabolized in the body determine the degree of its usefulness. In the whole process the first stage is food production. To a great extent possible, the nutritional quality of food products could be assured by practising a natural-organic-biological agriculture, by producing food in a quasi-traditional way and within an unpolluted environment. In practical terms, this

means a production without using chemical fertilisers, pesticides, insecticides, anti-cryptogamics, and herbicides.

The quality of food both plant-based and animal-based depends on the quality of the environment within which it is produced. That is the quality of soils, water and air as well as the cultivation, harvesting and processing methods. When ready for consumption the food should still be fresh; it should be handled properly at all stages of its procurement from production to consumption including its collection, primary processing, if needed, packing, transportation, wholesale and retail marketing. It is also equally important for the food to meet all hygienic requisites up to and during its preparation and finally its presentation on the table ready to eat.

Process of growing foodstuff in a natural way is very much in line with the functioning of the natural human digestive system. Products, which have gone through even a minimum process of conservation, lose their natural ingredients in varying degrees. The following is an example to demonstrate the importance of consuming “natural food”: statistics support that two auto-immune system pathologies of colon, namely; ulcerous recto-colic and Crohn disease have had a strong flare-up in the United States and in the United Kingdom during the 1950s and 1960s. This was coinciding exactly with the introduction of artificial fertilisers and other chemical components to agriculture. Similar situation was verified in some of the European countries about 10 years later, in concomitance with the use of the same chemicals in agriculture.

Fertilisation needs of soils are determined based on the composition of minerals, the bacterial life, and the kind of residues of previous production, the protein content and the nematode activity existing in soils. Based on such information, among several traditional practices, plant rotation has been re-introduced into the production system, the traditional fallow method is also frequently applied and the use of non-chemical fertilisers such as organic manure and fossil deposits is favoured for the plant growth. On the other hand, by using the swine manure or even the other organic deposits, in order to improve the fertility of soils, sometimes a great damage may be done to human health owing to their potential toxic ingredients.

The conviction of a total exclusion of chemical fertilisers used for plant growth may, however, need to be re-visited and adverse affects of artificial fertilisers on human health are to be further proven. In general, it seems necessary to carry out more research to determine the physiologic growth of plants according to various nutritional requirements of human organisms.

It is essential that food keep as much of its essential nutrients as possible intact, also during its final preparation at home, including the process of cooking, if needed. Preparation for and the cooking is the penultimate stage in the process of nourishment, next to eating and digesting it. In the preparation of food in addition to meeting hygienic requirements, while handling the food and making them ready for fresh serving or cooking, as needed, several essential points should be kept in mind and acted upon. It may, for instance, be good to remember that while keeping, preserving prior to its use, washing, peeling, as needed, and piecing the food, its part of nutrients are lost in varying kinds and degrees. To a large extent these processes should be curtailed, if they cannot be totally eliminated.

Usually, some food requires cooking to improve its texture, flavor, safety and digestibility; otherwise most of the food should preferably be eaten fresh as nutrient loss occurs during cooking. Except relatively new methods of cooking such as microwave and electromagnetic induction methods, all cooking methods take their roots from the traditional methods of wet /moist cooking by *boiling* or *dry* cooking by baking and grilling using an open fire. In all cases it is important to keep cooking time at a minimum to retain foods' essential nutrients such as vitamins and minerals. This is especially important in wet cooking (in water).

Cooking is the heat treatment of the food, involving transfer of both heat and mass. Food is a relatively poor conductor of heat. Usually in cooking, heat is transferred from the source of heat to the surface of the food using some intermediate medium such a water, steam, air or oil. The rate of heat transfer occurs in two stages. Namely, the first heat is absorbed by the surface of the food when the food is in direct contact with the source of heat as in grilling or food is immersed in air or water such as in baking, steam cooking or boiling. Then the heat is conduced to the center of food that is affected by the temperature of the surface, the thickness and the rate of evaporation from the surface and the thermal conductivity of food.

Cooking also involves transfer of mass, mainly the transfer of water through the food as cooking proceeds during which soluble nutrients and flavors also travel with the water. In moist heat cooking nutrients may be lost from the surface of the food into the cooking water, which suggests that food if it were boiled should not be cut into small pieces. Fat is also transferred during cooking, either added to the food from the fat used as in shallow frying or lost from the food by draining down as in deep frying, grilling and roasting This implies that frying with some oil in frying pan –to prevent sticking- is to be avoided as much as possible.

Some changes and nutrient losses also occur after cooking. If food is kept warm after cooking before serving, it continuously loses its nutrients. Re-heating of food also causes some more loss of nutrients during heating. Microwave heating, of already cooked food in a short time, (though from better nourishment point of view re-heating of food is to be avoided as much as possible) and microwave defrosting of frozen food is therefore useful as they employ shorter time than other methods do. It is also better to defrost the frozen food in microwave oven than leaving the frozen food out for defrosting in room temperature for a long time. Some doubts still remain, however, of using the microwave system for cooking and even for re-heating/defrosting of food mainly from the health standpoint. .

From all the information given above, it could be deduced that as a rule of thumb, in all types of cooking the cooking time and the surface of the food should be reduced. That is, the food should not be cut in small pieces in order to avoid nutrient loss from the larger surfaces created by piecing. In most of the cooking practices using water or oil, food should be put into the hot-boiled fluid in the utensil (a regular pot or steamer or pressure cooker as well as a deep fryer and the like). In stewing, instead of using water or oil, preferably wine or liquor should be used. While they also avoid sticking and burning of food, they improve the texture, flavor and nutrient content of food cooked by this method by absorbing it into the food, instead of draining its juice to water or oil. In the same vein, once the food is cooked it should immediately be removed from the heat source. In the case of pressure-cooking, it is therefore advisable, to artificially cool the cooking devise by showering it with cold water so as to stop cooking. In moist-cooking of

cereals, rice and pasta to reduce or eliminate their starch content cooking should be done by putting the foodstuff concerned in a boiling water and cooking it for the selected period of time and at the end draining the water immediately, to stop the cooking. Running cold water through the cooked food for an instant could further stop the cooking by the remaining residual heat. This is particularly useful for people needing to avoid starch for a variety of reasons. As desired butter or oil, preferably cold-pressed olive-oil, and seasonings can then be added to the ready to eat food, however, without exaggeration.

In concluding this section, it is opportune to say that ideally the optimum and fully reliable nourishment for our body, mind and soul is provided directly from our own farms if possible and prepared at home with all the needed care. If not, the next best is to procure the food from our reliable local food producers or from the nearest local markets where the quality of products are proven to be consistently good. In all circumstances organically grown, local and seasonal food should be a priority. To this end, where possible consumers may form small groups to establish links with nearby small producers and develop mutual trust and support for such a system to survive. Gradually people start to move close to nature and form networks of smaller communities to live in and maintain healthy environments. In case of eating out, reliable and well-tested restaurants should be selected; if not possible, great attention should be paid to the selection and combination of food, avoiding potentially hazardous and too elaborate foods and food combinations.

In this regard it should be kept in mind and as much as possible practiced that sprouting grains, food legumes and variety of seeds at home is an excellent organic farming method. It produces a highly complete nutritious food, ready to eat alone or in combination with any category of food. They make a good sandwich ingredient for people carrying their lunches to work.

VII. APPROPRIATE EATING ENVIRONMENT AND CONDITIONING

As a general principle, a pleasant environment improves the absorption of all nutrients of food as such mostly eaten in a relaxed mode avoiding harmful effects of the stress arising from the hectic life styles. Such an atmosphere helps reduce acidity in the body. Stress takes away a lot of energy from the digestion process. For example, animals under stress or trauma do not eat as a natural response to internal stress processor. They naturally avoid increasing acidity and help increasing alkalinity in the body.

This is also true for some of the atmospheric and natural forces. Higher atmospheric pressure, sunny days with a lower humidity, higher oxygen in the air, and winds from the north, full moon are some of beneficial inferences. They alkalinize the environment and help the body and digestive system to function better resulting in a greater sense of overall well being. Above all and most importantly, an atmosphere void of pollution makes all the difference especially for people living in big cities and in industrial zones with lack of green lands in and around. One consciously observing the effects of these factors can tell the difference.

Similarly good company, soothing conversations and an underlying but not interfering pleasant music during meals supported by slow and conscious eating create a beneficial condition, which

enhances a good digestion and assimilation. In such healthy environment one can digest and assimilate the food even if it is not completely suitable to one's specific situation. The reverse is also valid. Good food eaten in negative conditions may result in an unexpected indigestion and even cause health hazards. The above argument suggests that environmental and conditional influences leave behind either an alkaline or acidic residue which results in a good or bad food assimilation.

Naturally, the pH-balancing ability differs from person to person owing also to multi-generational adaptations. We have to be conscious of genetic matching of our bodies with our foods. A food is beneficial to one may not be beneficial to another, as an individual's ability for an optimum pH balancing is affected differently. Usually, a specific genetic make up functions better within its original environment. This point supports again why one should eat, in principle, locally and seasonally produced fresh food.

The above observations suggest that it may be possible to program the body to benefit better from the food under any condition by artificially mimicking conditions, which have repeatedly proven to be beneficial to a specific individual or in general to all. Digestion process is orchestrated starting with the smell of food. Pavlov demonstrated the conditioned responses surrounding the food and how an associated sound or color can trigger the production of saliva. He has demonstrated that conditioning of reflexes depends on the repetitive association of one stimulus to a physiologic or instinctive response. Smell and taste trigger responses that may be even deeper and more complete. As we chew, taste, and smell our innate digestive intelligence assesses the quality of the food eaten (benefiting as well from the past memories), and goes to work to create the digestive enzymes needed to optimally process what has been taken into the body. Also consciously introducing plants, relaxing colors, music, and the like into the eating environment, as well as an attractive presentation of food can mimic pleasant natural environments.

Let's once more remember that proper chewing alone (back to the starting point dealt with in Chapter I) can restore health and help make up lack of suitable surrounding environment and condition.

VIII. ELIMINATING WASTE

Proper functioning of the elimination system through intestines, urine and lymphatic systems and several back-up organs such as eyes, nose, ears, and skin is one of the important keys to good health. The major elimination organs, namely, intestines and kidneys together with the whole urine elimination system throw out the waste produced in the process of the digestion. Before reaching to this stage the solid food goes through a whole process of digestion starting from the mouth and ending in the intestine where its assimilation by the body takes place. Liquid waste is eliminated mainly through the urination system and solid ones through the intestinal system. A proper elimination therefore depends on the functionality of all the steps the solid and liquid foods have to go through before reaching their last stages.

The strength of the endocrine system (glands) and of the eliminative organs as well as the amount of physical activity are important determinants of how much acid will be excreted from

the body to keep the body's pH in balance. Among other factors acid created by the stress has to be eliminated as well. Otherwise it blocks the proper functioning of the intestines. As already mentioned above in the section VI, the rule of thumb, for keeping the pH level in balance in all body's essential fluids, is to eat more of alkalizing and less of acidifying foods. That is to eat food more or less in the order of 75-80% (alkaline) to 25-20% (acid) as measured visually, not by weight.

Human body, by design, tends to be alkaline; however, it needs acid to mobilize its stored energy and in the course of life processes generates acid as a by-product. Here comes into the picture the need for finding a balance in all human activities from biological, physical up to the spiritual. All these activities conducted by interest and with pleasure play an important role in achieving a proper production and elimination of the waste and in keeping a balanced health.

In the biological sphere, we are normally crawling with germs, many of which are good for our health. Good nature gut flora maintains a balance of microorganisms, which in turn helps strengthen one's overall health by helping the body to digest the food. Microbes have their own genes, which are essential to the body's functioning by supporting the immune system to ward-off more dangerous bugs. They breakdown nutrients in order to survive and through in a continuing interaction with the immune system they train it not to overreact to intruders that could be harmless. A good balance within the microorganisms in the body could be maintained by a good diet, which avoids the accumulation of an excess acidity, which favors the growth of harmful ones and of their resulting toxicity.

Often obesity occurs when the balance is lost and thus the harmful microorganisms overtake the useful ones. Bowels and intestines in general are the sensors of the outside world through the food arriving therein. Fiber, vegetable skins, some spices and herbs help keep the balance. Natural dietary fiber, a substance found mainly in pulses and food legumes such as lentils, beans, vegetables, fruits and whole cereals, although with no actual food value, plays an important role in the body keeping waste products moving through the digestive tract, thus preventing constipation. It also reduces the body's absorption of fats and certain toxic food additives. Most importantly, fiber has a beneficial effect on controlling obesity by reducing the levels of glucose absorbed and the insulin released into the bloodstream.

The body's ability to detoxify must be utilized and improved upon. In effect, the goal of natural healing is to reverse the downward cycle of disease by eliminating toxic wastes, which are accumulated in the body, starting first from the elimination of the waste normally produced through digestion. Namely, the elimination organs of the body should be open and clean. This already suggests that both intestines and more importantly the colon, by which the major solid elimination is done, need cleansing from time to time by using simple or complex methods depending on the need. This is an important matter, which requires full attention. As lungs, skins, kidneys and lymphatic system as well as others in smaller quantities also does elimination, for example, when a person is constipated the skin may erupt or increase perspiration to eliminate poisons, though originated in the colon. They all back up and come to help meet the unsatisfied need. They all, thus, need care and cleansing & maintenance as needed or from time to time.

The hygienic measures are therefore of great importance in helping keep them healthy and in good functioning order in the course of life processes. If the organs are not able to excrete all the wastes accumulated, the blood will retain the wastes and re-circulate them resulting in flu like symptoms, aching, swelling, inflammation, and fever, thus indicating the need for cleansing and disintoxication as the body cannot do it on its own without help.

A variety of causes and/or their combinations bring the elimination system to this unhealthy stage. Bowel health starts with implantation of proper flora through mother colostrums right after birth. Cow milk can over-tax digestive fluids, allowing bad microforms, microbes to enter into the intestines. High carbohydrate diets nourish unnatural and unfriendly microbes and parasites. A bread and milk diet, for example, pastes its debris on the walls of intestines, like the paper is pasted layer upon layer. Continuing accumulation of such debris creates several intestinal problems including diverticula to hold some of the debris and seeds arriving there, as undigested and disturbs proper digestion, nutrient assimilation and elimination of the rest. Such development may eventually causes ulceration and inflammation, at times fatal as a slow leakage of poisons from the colon may make the whole body toxic.

Prolonged intestinal toxemia may manifest itself in, among others, fatigue, nervousness, recurrent infections, skin manifestations, headache, sciatica, allergy, asthma, eye, ear, nose and throat disorders. Good elimination is the solution. Hence, periodic cleansing of this major elimination system and a continuing stimulation of the colon by using suitable herbs to remove poisonous material from the body may become a must. Deeply stored and not removed wastes cause gradual degeneration of the body and adversely affect its proper functioning. Even the health of the brain and nervous system is closely related to the proper elimination of the waste from the body.

Acid forming food sustains harmful bacteria, which corrode intestinal tissue. The flora and mucus lining is also degraded by chemicals from foods, air pollution, or allergens. A perfect elimination helped by the lubrication of bowel walls by mucus secretions which also engulf harmful substances could give an invaluable support to the elimination system and thus to maintaining the overall health. High quality of fats can also strengthen cell walls as well as reduce bowel and artery leakage. Cells can then resist better and operate longer in a toxic environment.

It should be once more remembered that food, that is not chewed, digested and eliminated well and adequately alkalinized in the process, becomes nutrition for parasites, which will, in turn, poisons people with their wastes. Then, one has to eliminate also their wastes. Acid environment promotes, while an alkaline environment prevents the growth of parasites.

Yogurt owing to its bacteria and fermented foods by promoting the growth of lactobacillus and Bifido bacterium helps maintain populations of helpful bacteria in the intestines, hence ward off the harmful ones from the bowel.

A sweet breath, absence of gas pressure, odorless stool are the evidences of a good digestion. Putrefaction and many abdominal problems are, however, the manifestations of poor digestion.

Controlling stress considerably reduces the acid dominance in the body, hence, the quality of the life style in general. Eating environment and conditions, in particular, become also important factors in this vein.

CONCLUDING REMARKS

Today, there is widespread confusion and a search for a clear answer to the nutritional puzzle. Globalization efforts force people to move away from their habitual local and seasonal foods as well as from the knowledge of their traditional methods of food procurement and use. As a natural result people gradually shift to a more uniform eating patterns with not much attention paid to individual and diverse cultural needs. Obesity and related health hazards that had begun during the 1970s is now fast spreading across the world, with fast food culture as one of its vectors. Heart disease, diabetes, colon cancer, and breast cancer, considered to be the main diseases of affluence, have been linked to diets low in fiber, high in animal fat and many acidifying foods with all the accompanying acidifying environments and lifestyles.

A new awareness is now needed to perceive this fast spreading reality and re-establish proper nourishment practices in order to ensure a balanced pH levels in the body's fluids and tissues. This is the major indicator of good health and wellbeing. Good news is that in the USA, where the fast food culture has been a wide spread eating style by the mass, the people started to be conscious of the need to remedy this peculiarity and its resulting disorders. Similar actions are now appearing in all adversely affected parts of the world. Taking the responsibility for managing their own preventive and curative health measures is now an increasing desire of food consumers who are willing to ensure their overall wellbeing by emerging out of the prevailing deep confusion.

Experts and health operators as well as many curious people on their own are undertaking serious research. It is now widely understood that *eating a variety of good quality foods, achieving a balanced nutrition and conducting an appropriate lifestyle* altogether sustains a balanced pH in the body and enhances health and healing. Under such conditions both digestion and assimilation of ingested food and the elimination of the waste will work well. These three basic aspects of health continuously interact and determine the overall wellbeing of individuals.

Any nutritional strategy and tactics should be conceived taking into account this inter-relationship. This fact also requires taking personal responsibility for acquiring one's own nutritional understanding and making personal choices to pursue an optimum physical, mental and spiritual health. What is eaten determines not only one's optimum health at present, but it also indicates the expected health status as one age.

Many nutritional guides and strategies aim to inform and educate people and to raise their nutritional consciousness. These should, however, be considered dietary references, including also those mentioned in this article and in the references listed below. All need to be interpreted in the light of individual needs and the specific cultural, economic and micro-ecological conditions of diverse population groups. A balanced and conscious eating and appropriate behavior is of utmost importance to peoples' well being, resulting eventually and surely in healthy societies. The simple verifier for measuring success is the happiness of humanity, peace

on the planet earth and continuing smile in the face of each individual. In effect, these objectives have motivated and energized the writing of this article.

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* Spade-work done for this article includes the study of the above-cited documents and the author's personal related research and validating experiences and observations. Its difference is in its integrated and systemic approach in orchestrating and conducting a self-organized health maintenance program starting from improving individuals' nutritional consciousness and increasing personal responsibility. Above references include quite a number of relevant examples and case studies, which are recommended to consult as and if needed. For those within the IIAS sphere visit www.iias.edu. line- documents.

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ELEMENTS AND METHODS OF BIOENERGETIC MEDICINE

By Dr. Hartwig Schuldt, MD, Dipl.-Ing.¹

INTRODUCTION

The threshold of understanding is a matter of attention. When the magnitude of attention is not triggered to result in memorizing the data presented, it often needs repetition or reiteration. When new findings have been established over a long period of time, the curiosity to take advantage of them is a matter of introduction. This applies to an individual or a group of people. Just as well, it applies to internal reactions in the body regarding immunity, defensive reactions, and stabilizing reactions.

Although the biologic energy cannot be exactly defined, it can be observed by many manifestations, put to use and evaluated by electronic means. The author, in this paper, summarized his findings, which disclose many hitherto unresolved phenomena by making them accessible to general understanding of scientific sphere. It is explained how bio-energetic medicine emerged out of 'Electro Acupuncture According to Voll (EAV)' and further developed in medical procedures thus bridging traditional modes with advanced modes using technical devices.

As in its present form bio-energetic medicine can present itself today as a practical modality for everyday use. There is sufficient evidence that proper application of a remedy in the measuring circuit is indicative of an enhanced flux of energy followed by immediate responsive healing. Such healing process is further complemented as needed, by homeopathic preparation in which the information contained can be transmitted over long distances similar to wireless radio communication. The author explains how bio-energetic medicine goes hand in hand with the homeopathic healing process.

So, I am describing a method in medicine, which everyone should be able to practise. It is called bioenergetic medicine, and by definition, deals with the energy encountered in biologic systems while in the live process. The biologic system is an extremely intelligent compound. All actions are linked to each other to facilitate an overall balance of available conditions. When there is

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imbalance of one unit this engenders the need for repair or regeneration by other units to make sure an indispensable equilibrium is reestablished.

BODY'S CONFRONTATION WITH PHYSICAL SHORTCOMINGS

When the body is confronted with a physical shortcoming or defect, which it is unable to resolve by itself, additional outside assistance is required. This can be provoked by

- a) mechanical means such as shaking, pushing, pulling, cutting, tone or noise;
- b) thermal means in a hot bath or cooling;
- c) chemical means such as drugs or solutions;
- d) subtle applications such as homeopathy or acupuncture in a derived form or light;
- e) electronic means to influence reactions in the micro- or low level range of reactions and conditions.

Thus a reaction is based on pre-dominating condition that has established itself due to a centralized equilibrium or a peripheral equilibrium effected by internal shifts or outside influences.

Every reaction needs a surplus of strength stored in the biologic system to achieve efforts to overcome imbalance. This can be provoked in an otherwise idle state of responsiveness thus creating an additional amount of disturbance with respect to the existing disturbance. When this is capable of releasing additional stimulus, reactions of reestablishing equilibrium, that is, healing can be effected. There is in actual fact no autonomous set of data, since all conditions are a matter of reestablishment and mutual confirmation. Therefore, it is difficult to describe such system in terms of fixed data, which can only depict momentary states of information and lacking, in addition, reciprocity of organic manifestations. In fact, flux phenomena are much more important when considering biologic processes than momentary probes for successive evaluation.

Tendency is more important to observe rather than status quo as a pre-existing condition. In harmonized condition reproducible values can be obtained, such as pulse rate and temperature.

Since data are innumerable, all measures taken from outside are subject to uncertainties. Therefore, it is necessary to adjust the interspaces, the duration and the direction of therapy with the intention of most adequate assistance, not omitting the magnitude of the resulting impact.

To examine the body in order to obtain clear indication and resolution as to the derangement resulting in malady, there exist methods based in particular on procedures making visible an existing defect, such as X-rays, electron-spin photography, multi-layer photography, ultra-sound, even electronic derivations, none of these is free from failures leading to obviously insufficient interpretation. There is, however, a varying degree of uncertainty, which can be overcome by using alternating procedures.

SOME BACKGROUND

The above procedures have been established over a long time and tend to persevere, as progress is only along the lines in extension or extrapolation.

The earliest healing art and science is the Traditional Acupuncture, originated about 5000 years ago as a complex system of examination, diagnosis and treatment. It teaches us how to see the entire human being in body-mind-spirit, how to recognize the process of health and illness, and how to restore the lost health of an individual. It all depends on its basic theory of a Life Force called Ch'i Energy which flows within a healthy body in an harmonious and balanced way. Illness arises when this equilibrium is lost. We know this by way of symptoms as the signals of disorders. Assessing the conditions of the Ch'i Energy so as to find the cause of the disorder does diagnosis. The most important tool in this process is pulse diagnosis as each organ is associated with a pulse and other facets of life. Illness is a loss of balance of the Energy within us. Diagnosis involves telling us where it is broken and how to mend it.

Traditional Acupuncture treats, therefore, the person, not the diagnosed disease as its basic aim is to re-establish the lost balance within the body as a whole and enable it to "self-heal" through the re-established healthy flow of the Ch'i Energy. It does it with needles acting as the opener or closer of gates to correct the energy pathway in exchange with the immediate environment mostly as peak-discharges. Traditional Acupuncture operates, based on its Law of the Five Elements: Water, Fire, Wood, Metal and Earth, describing the flow of energy, which keeps the harmony among them and all in order. This law is in line with the natural cycle of life. Traditional Acupuncture deals with balancing if some aspects of this life energy is no longer in harmony with the totality.

Electro acupuncture according to Voll (EAV), based on the same law of the Traditional Acupuncture has laid the foundation for further developments in medical procedures forming bridges between hitherto traditional modes, using palpating abilities as well as modern modes, using technical devices. Bio-energetic medicine that has emerged out of EAV, can present itself as a practical modality mature enough for everyday medical use.

Basic innovation was the integration of micro-current, which is in the realm of biological magnitude without causing or leaving side- or after-effects. Preceding investigation chiefly concentrated on higher values of electrical current without reaching the results now available.

Standard values could be established in addition to elevated values in inflammatory processes as well as depressed values in degenerative processes in the body. Lack of stabilization can be evidenced to indicate immanent deficiencies. Balancing substances can be employed to match with pathologic conditions thus indicating the remedy for therapeutic application. The indication of punctual pain on the part of the patient to be measured gives proof of adequate medical investigation. This phenomenon can only be achieved by using the four-prong electrode as a measuring probe. This is the reason why different kinds of procedures aiming at innovative attempts cancel out for this kind of confirmation of underlying pathology.)

A NEW MODALITY

There exists a new modality, which is easy to handle and gives a resolution comparable to penetrating the body as a vitreous entity: this is bioenergetic medicine.

The force of life or the surplus of strength, which is subject to depletion in the course of time can be supported and extended for the purpose of preservation, so it is free of premature abortion.

By employing a little device using micro-amps one can verify any part of the body. This intervention by micro - current is safe, leaving no after - or side - effects and - above all - precise. Any organ or part of an organ can thus be determined, any organ system, any process in the body or metabolic reaction with respect to normal processes, abnormal processes, hyper-active or hypo-active processes, degenerative processes as well as extinguished processes.

This is most convincing when one is exposed to the necessity of establishing a proper diagnosis. As a matter of experience one might anticipate the result, which can easily be confirmed using only fractions of a minute. In addition, one can indicate the actual cause of a malady. One cause may create one disturbance predominantly; it may likewise produce a number of disturbances resulting from this disturbance. In addition, many disturbances may affect one organ or metabolic function; they may likewise extend over a number of such organs or metabolic functions. Moreover disturbances can cause secondary ones not due to the original cause but as a result of successive or inter-linked organ reactions.

The magnitude of an impact can be discovered resulting in acute or chronic condition, likewise the duration in terms of its persistence either consecutively or intermittently. The transition of physiology to patho-physiology can be categorized depending on all kinds of impingements such as bacterial, viral, chemical, thermal, electrical etc. traumatic and non-traumatic.

Bacterial and viral aggression can cause long-lasting or chronic disturbances even of many decades. When treated appropriately they may subside. This may also apply to minor aggressive chemicals or poisons, They are hard to verify as the acute form of aggressions manifest themselves in a mostly defined manner described in text books, and yet, in recent time, acute manifestations can vary to a degree which makes the overt appearance difficult to discern among a variety of similar outbreaks. In this case bioenergetic diagnosis can verify the condition. Inoculations may cause side – or after – effects leaving abnormal reactions differing from normal criteria. Also, in these cases bioenergetic medicine is able to indicate the connections. Evaluation and appropriate treatment is a matter of derivations from the biologic process obtainable by bioenergetic procedures.

The entire range of acute trauma is easy to define with respect to its origin, be it mechanical, chemical, thermal etc. For this, orthodox medicine doubtlessly has its very effective tools of therapeutic management. Yet, in bioenergetic medicine mitigation of events can be performed. In particular, after-care can be done very effectively in addition to abbreviating the normal course of events in the healing process. After-effects, side=effects, confusion of effects can be eliminated to result in more rapid healing. A bone fracture, for example, can take six weeks to stabilize; using bioenergetic means it may take only half that time.

PROCEDURES

Bio-energetic diagnosis and healing

Many attempts had been made to explain ancient findings of acupuncture in terms of modern understanding approaching an increasing arsenal of modern technology. It was only by systematic investigation that progress could be achieved in the form of bio-energetic medicine.

The latter is based on the body's field force of minute entities. Mutual organic processes as a result of protein reactions to metabolize functions and a constant equilibrium of energetic flux phenomena constitute the basis for this.

A network of referential coordination immediately under the outer layers of the skin manifests loci for addressing internal organs as well as parts of these. These are electronic measurement points, also called acupuncture points. This applies to all parts of the body excluding parts of callous formation. By a non-invasive touch of the outer skin, the contact with the underlying internal organ can be established. Because of the use of micro-current as well as touching the outer skin and leaving a slight mark, the name of Electro-Acupuncture was given. This mark disappears in about 20 minutes in contrast to the deeper penetration of the skin using acupuncture needles. There should be no wound left in the application of Electro-Acupuncture with tissue damage and excretion of sub-dermal liquids or even blood. In the case of a wound, the electrical properties surrounding the area for measuring become distorted. The same applies with respect to liquids on the surface of the skin with higher grades of electrolyte concentration. Thus, sweating impedes the measuring to an extent that proper readings cannot be taken. This is also the case when chemicals are present. In less concentration of electrolytes, such as tap water, the measuring can be done easily. The proper concentration when a turning point is reached with respect to concentrations is a matter of experience but should be clarified before using any kind of liquid.

The author discovered the feature of individual sensitivity as the expression of the patient's own defensive force against outside impingement. Thus the transformation of sensitive qualities otherwise exhibited by a skillful diagnostician can be provoked on the outside layers of the dermal tissue of the patient, him/herself.

While the use of the acupuncture needles enhances energetic exchange processes with the immediate environment of the body, the use of the measuring probe alone only engenders a very slight exchange effect using direct current. This is negligible in comparison to the application of alternative current, when exchange processes can be increased or decreased with reversed functions. It is by these means that a very adapted influence of the body can be affected.

In addition to the above procedure of influencing the body, graded forms of punctual application can be done by using temperature, light of varying colors, laser, air current, mechanical means, such as pressure or suction, sound/ultra-sound etc.

In order to verify the existence of the meridian system in the early 1970's the author applied liquid crystals on various parts of the skin after standardizing the epidermis. This could be done on the lateral surface of the trunk where fractions of centigrade became apparent indicating the linear pathway of the meridian energy. Activated meridians on the skin of the lower leg with removed hair could show pathologic conditions with slightly higher temperature gradients. These small fractions of temperature differences for applied use of general procedure were too delicate to perform depending on too many variables. Yet, they were sufficient proof of linear pathways presenting themselves on the surface of the skin. Following these pathways along their propagation, punctual measurements indicated the course of the meridian as a confirmation of its course.

For investigating the physical condition of the body in Electro- Acupuncture, many measuring points were described in relation to most anatomic parts of the body including the lymphatic system, the central and peripheral nervous system in any section of the body. Results of measurements can be achieved within fractions of a minute, they can be confirmed by any other methods otherwise in use in orthodox Western medicine but take much longer to perform and do not exhibit inter-relations between stratified or mixed pathology. In many instances orthodox procedures are too coarse to resolve delicate somatic conditions, which in bio-energetic medicine can be verified without difficulty. This applies to conditions in the onset of a malady before exhibiting sufficient changes that are characteristic of the overt act. Likewise, subsiding malady after overcoming the acute phase can be easily detected to follow up with a condition in its diminishing phase.

In the daily routine work a number of most prominent points can be utilized for establishing a diagnosis and for decision-making as to the proper and adequate therapeutic measures. These points are chiefly located on the fingers for most frequent use, the index finger being of great importance. In a first approach this gives sufficient indications as to underlying disturbances. In a second approach this can be extended to other locations on the body such as feet, legs, the trunk, the skull, etc.. As a routine procedure the use of fingers exhibits a sufficient survey of conditions, of which there mostly exist numerous ones simultaneously. This procedure is devised to be time as well as money saving.

It has been the author's endeavor to keep bio-energetic medicine easy and uncomplicated for everybody to perform as a valuable tool in diagnostics and therapy. Difficult machinery and complicated gadgetry were not given preference in favor of procedures easy to handle and apply.

The description of traditional acupuncture points in view of modern evaluations using the measurement technique of bio-energetic medicine has to be defined more exactly. Pathologic conditions in the body may result in shifts of standard acupuncture points. Points in electro-acupuncture differ from traditional acupuncture points. This can be explained in that different stimuli take advantage of different loci on the skin. The material, acupuncture needles are made of, even creates shifts in loci positions.

When the meridian system gets out of its standard pathways, special new vessels and extra - meridional points are requested to maintain the overall concept. In reality, this is nothing else but to account for shifts due to underlying pathologic condition as well as the use of differing modes of procedure. In needle acupuncture, this also applies to procedures of analgesia.

Standard acupuncture points thus only represent a referential frame of reference. Different frameworks could be established for light, temperature, and other modalities described above. The relationship with the environment is obvious in that the testing of medication, applicable to the body, could be achieved and be made a standard procedure. It so turned out that minute quantities of substances as well as electric waves could be used. For this purpose, the use of homeopathy is of great importance.

Homeopathy in coalescence with bio-energetic therapy

While the application of electrical wave alone to the body, already has a significant effect, it is of too short duration for reactions in the body to cope with significant impingement.

Imprint of electrical information via specific substances into liquids to be applied to the body, facilitates reactions to occur more adequately. In this manner, the application of homeopathy opened up a wide field of medical action. Addressing the pathologic condition by the principle of similarity, engenders healing effects otherwise unparalleled. This principle can already be observed when a pathologic condition is drifting away from its original position, which is an indication of improvement. For example, when muscular pain adopts successively varying positions.

The great advantage of homeopathy in comparison to allopathic medication exists in the fact that it is free from side- or after-effects. Homeopathic application followed by reactions in the body can specifically be observed and measured. Over-reactions only occur in hypersensitive individuals. In this case the immune system has to be addressed in a very subtle way using minute quantities of a few drops only. Thus, allergic conditions can be addressed appropriately, which is otherwise most difficult to achieve apart from the random use of cortisols.

The research dealing with this subject can elucidate immune conditions far below normal thresholds of reactivity.

The energetic waveform of a homeopathic remedy can be picked up by a sender and can then be transmitted over long distances to reach a receiver. From there the homeopathic information contained in a vial can be applied far away from its original location as if it is available in reality. I suggested this many years back for effective technical production and performance in medical application. Thus, many machines have been produced for a daily use.

CONCLUSION

There is no doubt that without the notions of traditional Chinese medicine about the energy concept in the body and the existence of meridians and specified locations on the surface of the body, electro-acupuncture and bio-energetic medicine would not have come into existence.

Now, bio-energetic medicine is an established modality in the medical world. Its theoretical background is sufficiently established about its value and usefulness. Western rational thinking and acting as well as Eastern tactile sensitivity and human-friendly practicing thus could be united in a unique combination in the medical art.

It is hoped that these outlines will enable many devoted workers in the medical field to promote a novel health care system highly patient-oriented. The basis is laid for this and organizational concepts can take advantage of already existing procedures ready for ample daily use.

Bio-energetic methods need not be concerned about further advancing the modality per se, except creating more expertise by a multitude of devoted followers with an open mind for extended application.

It should be apparent from the preceding outlines that a very rewarding field of bioenergetic medicine is preventive medicine. Prevention is concerned with mostly chronic change on the body. To eliminate such long lasting disturbances it is necessary to influence and, in many cases, change the lifestyle, both from a behavioral point of view and from a nutritional point of view. Definitions can be established as to the actual requirements of a person to dominate a viable form

of performance. Using the method and relating the results to basic requirements is a rewarding acceptance of the body.

Since bioenergetic medicine is dealing with subliminal or low-level verifications in the body, it is obvious that a most prominent action is pre-natal care in pregnancies. This field responds to all what bioenergetic medicine can offer, in particular from a holistic point of view.

Holistic aspects in medicine become more and more important and should bridge the existing disciplinary separation in orthodox medicine.

Bioenergetic medicine can in any case give a concomitant prolepsis when problems are hard to resolve. Computer based therapy is not the answer to such requirements. Hitherto complex biological systems cannot be mathematically modeled. Hypothesis should not go beyond therapeutic requirements.

Competitive procedures can always be put to test. In energy depletion problems bioenergetic procedures are a necessity to establish the condition. This applies to heart-problems, kidney-problems, brain-problems, joint-problems, just to give some prominent examples.

Pharmacokinetics can be defined. In addition to the examples given above the main fields in orthodox medicine can be enlightened and be made more transparent, such as psychology, psychiatry, urology, neurology, gynecology, orthopedic medicine, cancer medicine or oncology. This applies likewise to metabolic problems of liver, pancreas, spleen while therapy encompasses the entire body with direct access to underlying defects.

This modality of bioenergetic medicine offers itself as the principle mode of medical action in conjunction with established and verified disciplines of conventional thought. Computerized medicine cannot encompass the life process to a degree that it can be reliable and effective as a tool in medical action. It may serve for documentary purposes in follow-up studies, but not for prospective processing.

What bioenergetic medicine does not deal with in direct apostrophes is the field of para-psychic conditions and changes although it can serve as an adjunct when problems have to be resolved.

Educating the Mind, Nurturing the Soul, and Cultivating the Body

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Abstract

This paper explores the process of education in its broadest possible sense and within its wider social, societal and political contexts. It studies cognitive, emotive, ethical and other aspects of education as they pertain to the physical, mental, emotional and spiritual wellbeing of man. It discusses formidable challenges we face in our efforts to overhaul and improve our present educational system, and proposes various tools, methods and approaches available to accomplish this task. It identifies and examines the conditions and circumstances which facilitate and enhance education, and those which impede it.

It studies the influences and effects of various factors on the quality of education as it relates to the quality of human development and to the evolution of our society. It discusses the negative impact of mainstream TV and mass communication media on education of the public, on the behavior of people, and on the development and maturity of our society. It suggests corrective measures and strategies that could help to ameliorate the present unsatisfactory conditions and improve education for everyone on this planet.

Keywords: Education, quality of education, physical, mental, emotional, spiritual, wellbeing, cognitive, emotive, ethical, society, development, mainstream TV, mass communication media

1. Introduction

Education is the key to the future of our society and our civilization. It will determine whether or not we shall evolve, survive and prosper in peace, justice, freedom and dignity, and whether or not we shall be able to maintain a decent quality of life.

This is also the reason why education must be considered in its broadest possible sense and in its widest socio-political, moral, societal and civilizational context. The quality of society is determined by the quality of its individual members, by the quality of their relationships and by *the quality of their education*. By providing high quality education for each member of our society, we shall have a chance to develop a new kind of society in which we shall be able to replace the Culture of War, Violence and Death by the Culture of Peace, Justice, Freedom, Kindness, Caring and Cooperation.

We will not be able to enjoy life and prosper in a society in which only a few are being properly educated while the rest of the population remains uneducated and ignorant. Democratic society can function properly only when the majority of citizens are highly educated, and have developed a deep-seated sense of collaborative consciousness and abiding sense of responsibility for each other.

The malfunctioning and malaise of the present thoughtless, brutal, violent and inconsiderate 'throw-away' society based on consumerism, excessive greed, rampant materialism and rapid decline in moral values illustrates quite well how our educational system has failed us. It shows that too many people are no longer able to function as civilized, well-educated, caring, loving, considerate and compassionate human beings.

Many educators have abdicated their responsibility and obligation to transfer useful knowledge to their students, and above all failed to teach them how to behave, how to think critically, how to interact cooperatively, how to communicate harmoniously, and how to properly relate to other fellow human beings. They failed to instill in them ethics, integrity, kindness, respect, and all the other noble qualities that children and students should have to become useful, productive and valuable members of society.

We are currently witnessing rapid degradation and destruction of our natural living environment; break up of our families, increased criminality by youngsters, deteriorating economic situation, and an uncertain future. We are experiencing a gradual erosion of freedom; destruction of human rights; an eagerness to resolve disputes and conflicts through threats, aggression, violence and wars, through belligerent behavior, military actions, and through individual and state-sponsored terrorist acts. We have become desensitized to suffering and pain inflicted on other people, accustomed to ignore the injustices, brutality, torture and killing perpetrated almost daily on many innocent human beings, either in our own backyard or in far-away places. We have been gradually conditioned to accept brutality, aggression, crime, violence and war as a normal and natural part of our life. Our education system and our educational institutions have failed to sensitize and educate us, and to prompt us recognize and actively confront the evil in whatever form or shape it may appear.

Education and educational institution are greatly influenced by the prevailing orthodoxy and by the political agenda of the ruling elite and those who are currently in power. Education is also influenced by many other factors. For example, education is affected by the dynamics of the socio-political and economic environment in which people have to live and work; by the availability of relevant educational programs; by the quality of teachers and schools; by societal customs and traditions; by the prevailing attitudes of the public towards education; etc.

2. Balancing Various Aspects of Educational Development

Education is a multifaceted process. When we speak about education, we have to speak about education of the body, mind and spirit. We also have to speak about educating the students socially. We have to educate each learner how to appropriately relate to other people, how to interact and communicate with them, how to think, behave and act under different conditions, and how to be a kind, caring and loving human being. Education has to include a wide variety of

different aspects such as: physical, mental, emotional, spiritual, moral, ethical, social, societal, behavioral, and others. Successful education has to strive to achieve a harmonious balance amongst all of its facets and aspects. Focusing on only one facet of education may negatively influence the development of the other facets or aspects of the educational process, and may subsequently impede a healthy development of the personality of the learner.

In order to optimize the educational process it is necessary to provide the student with adequate educational resources, skills and knowledge that would enable him not only to fully develop and maximize his human potential in the areas in which he has a talent to excel, but also allow him to expand his education and potential in the areas which he has neglected to develop.

It is a pity that education of the public in the contemporary Western culture is a subject to so many fleeting fads and fashions. Currently, for example, extensive promotional TV campaigns are focusing on the physical appearance of the body. These campaigns promote the use of various kinds of muscle-building machines and all sorts of exercises that promise us to quickly reduce excess weight and develop a ‘beautifully’ sculpted body.

The overwhelming majority of these promotions on mainstream TV&MC media are focused on the physical development of the body. Only a few independent Public Broadcasting TV stations present programs that are devoted to also educating the human heart, mind and spirit, and to expanding human potential.

Certainly, it is important to exercise and to keep our bodies in good physical shape and healthy condition. By taking good care of our physical body and by maintaining good physical health, we shall be able to also function well mentally, emotionally and spiritually. However, there must be a reasonable balance in our overall education and in our human development. Besides developing our body, we must also take good care of developing our mind, spirit and soul, so that we can function as decent, loving, caring and compassionate human beings, aspiring goodness to everybody around us.

One should be well aware that in the realm of physical development and physical education, there is a wide variety of physical exercises and activities that can greatly help to enhance the balanced development of our body, mind and spirit. Some physical exercises such as yoga, tai chi, holotropic breathing, and various other aerobic and anaerobic exercises have the capacity to enhance the functioning of the human body, mind and spirit *simultaneously*. They can reduce stress, improve the memory and mental functioning, uplift the mood, improve sleeping, enhance the creativity, boost the immune system, improve health, speed up recovery from various ailments and illnesses, and can have many other beneficial effects on the person.

Different exercises and physical activities are to be personalized to suit for different people with different needs and conditions. It is upon each individual to learn and find out what is the optimal synergistic combination of physical activities or exercises that could best help him to enhance those conditions of the body and mind that need immediate attention and that will ensure his optimal physical, mental and spiritual wellbeing and health.

3. Improving Educational System – Educational Process Design

In order to overhaul and improve the present educational system and to properly meet its current and future needs and challenges, it will be necessary to carefully review and re-evaluate:

(1) What is the meaning of education in its broadest sense; (2) how education is conceived at present, (3) how education should be conceived in the future; (4) what it should accomplish; (5) what role it should play in our society; and (6) what objectives it should achieve.

In order to accomplish the above task to improve the future design of our educational system and the quality of the educational process, we have to determine:

- (1) where we are at present – i.e. the present state of education $A(t)$;
- (2) where we like to be in the future – the future state of education $Z(t+k)$;
- (3) what we should practically do to get from the present state $A(t)$ to the future goal state $Z(t+k)$

In our planning we also have to determine how to practically realize the transition from the unsatisfactory present state of education $A(t)$ to a desirable future state of education $Z(k+t)$. In order to progress from the present state $A(t)$ to the goal state $Z(t+k)$, it may be necessary to proceed with a series of intermediate transitions in order to have sufficient time and resources that would permit us to gradually adapt to the newly emerging situation.

In the past and in different parts of the world various reforms of education have been attempted. Some of these reforms have helped to improve education but many others have failed. Nevertheless, all these attempts have taught us invaluable lessons and provided us with useful experiences. They have shown us which aspects of reforms have contributed to the improvement of education and could be considered for adoption into our future design of our education system, and which aspects have failed to fulfill our expectations and should subsequently be abandoned.

In our efforts to overhaul and improve our education, we should also review the premises on which the current education system has been based. It is apparent that many older concepts, models and premises of education that were useful in the past may not fit well into the future. This is due to the rapid changes in our lives, in the technological and scientific developments, and in the way we communicate and interact with each other.

The education of today faces many new challenges. In addition to helping students acquire and utilize new knowledge and teach them how to think critically and creatively, the education should also help them develop, expand and better utilize the available potential of the human mind and spirit. It should help them to develop and expand their conscience and consciousness, anchor firmly their ethical behavior, and teach them greater empathy and compassion for others. It should instill in them noble human values and morals, uplift their spirit, inspire them by positive examples, and teach them how to be sensitive to the feeling of others, and how to be mindful, cheerful, caring, kind, creative and thoughtful. It should also instill in them a sense of honesty and responsibility; and teach them how to help each other and how to love each other.

Education should also be considered in a much wider sense and societal context than it has been until now. In today's society in which both parents are forced to work in order to survive economically, the parent's ability to properly bring up, discipline and educate their children is severely impeded and limited. Ridiculous laws, strong peer pressure, bad role models and many

other destabilizing social agents and institutions, especially the mainstream TV and mass communication media are gradually undermining moral values (and the supportive structure of our society) and are further subverting and weakening the authority of parents. Frequently the parents who must work hard to make a living do not have enough time, energy or clout to properly focus on children upbringing. Children are left alone to their own devices and grow up increasingly alienated from their parents, families and society.

A generation and communication gaps have been artificially created and sustained by the mainstream TV and the mass communication media. The churches and faith-based institutions are slowly losing influence and moral authority and there are no other institutions that would fill the void. The politicians and governments are more interested in promoting economically profitable casinos and other gambling establishment rather than helping to promote wholesome family style cultural and educational entertainment.

It seems to me that appropriate educational programs and good schools with insightful, intelligent and dedicated teachers could alleviate this situation, at least temporarily, until a more permanent satisfactory solution is found. Consequently, the schools will have to also assume some of the educational and 'upbringing' role of parents, and will have to teach the children some of the morals, values and qualities that until recently children could only learn from their parents or grandparents in a tightly knit family environment. The schools will also have to teach the children altruism, a sense of duty, self-discipline, self control and other good dispositions that will positively shape their character.

New educational programs will have to be developed in which parents could also be taught how to correctly bring up their children under the stressful circumstances of today. These new educational programs should also focus on motivating and teaching children and young people how to behave well, how to be polite, courteous, well-mannered and respectful to their parents, to adults, to elders and to their own peers and schoolmates. These new programs should teach young people (as well as adults) how to take responsibility for their actions and desist in the blame game, how to interact and harmoniously communicate with each other in a friendly, civilized and cooperative manner, how to curb rage, aggression and violence, and solve disputes and conflicts in a peaceful and cooperative manner. Above all, such programs should teach to differentiate between what is good and what is wrong.

At present, tremendous capabilities, potential and power of the human mind and spirit is underestimated, underutilized, wasted and not developed as it could and should be. Our Western society is preoccupied with appearances and forms rather than with substance and quality. As pointed out previously, the majority of promotions and advertising is focused on body building, make up and on how to sculpture various parts of the body, but only a tiny fraction of programs is devoted to practices and exercises of how to sculpture a noble human mind, soul and spirit.

Many educators and many educational programs are teaching skills and are preparing the students for the immediate needs and short-term requirements of specific employers, without too much consideration of the fact that these needs in the fast changing world can quickly change and can become rapidly obsolete. Many of these programs are imparting students with the skills that the student will not be able to use in the future.

In a rapidly changing and intermingling world, many complex problems arise that must be urgently solved by well-educated, intelligent, insightful and creative people who are equipped with relevant problem-solving tools. However, present educational programs and institutions largely fail to teach students the proper problem-solving skills, innovative and creative thinking, and also fail to equip them with relevant knowledge and problem-solving tools.

Most of the complex problems of today are interdisciplinary in nature. Therefore, it is sometime impossible to solve such problems by specialists with expertise in one discipline only. They have to be solved either by team(s) of experts from several different disciplines or by individuals who have the pertinent interdisciplinary-oriented education, with relevant knowledge and practical experience in diverse fields.

At present, the majority of educational programs and the school curricula have neglected to provide much needed interdisciplinary and multidisciplinary oriented education and failed to incorporate the trans-disciplinary oriented approaches and problem-solving skills in their curriculum. The emphasis on strict specialization and on delineation, demarcation and compartmentalization of knowledge has prevented many educational institutions to introduce curriculum program in which students would be taught the complex multifaceted linkages, dependencies and interrelationships between and amongst various aspects of systems and processes in diverse fields and disciplines. The future focus is on **integrative education**, i.e. on education which could help to reconnect and unify various diverse fields and disciplines.

Students should also be taught to appreciate certain commonalities amongst different fields and disciplines. They should be taught how particular methodologies, concepts, models, principles and knowledge developed and advanced in one field or discipline could also be applied and utilized in other fields and disciplines by way of analogy. For example, they could learn how knowledge developed initially for military applications to combat enemy troops on the battlefield, could also be used in therapeutic applications in medicine to fight viruses, bacteria and other pathogenic agents in the human body, owing to their similar functionality properties.

4. Cognitive, Emotive and Ethical Aspects of Comprehensive Education

The present education has been primarily focused on cognitive aspects of education, i.e. on fostering acquisition of knowledge, on teaching how to think, on memorizing the learned material, on promoting the scientific and computer literacy, etc. The psychological, emotional, ethical, civic and other important aspects of education have been largely ignored and neglected. It has been argued that such aspects of education and upbringing should be left exclusively in the domain of parents and (extended) families. However, in today's fast evolving and changing society in which both parents usually have to work to earn the living to survive, and in which the families are often fragmented, the parents and the family is rapidly losing the ability to provide adequate upbringing and education for their children in these "other" important areas. The parents do not have enough time, energy, resources or motivation, and even the necessary influence and authority to provide proper guidance, upbringing and relevant education for their children, and to properly shape and foster their healthy psychological, emotional, ethical and spiritual development. This means that schools and educational institutions will have to step in to assume (at least partially) the role of the parents to provide the children and students with all those important and relevant aspects of emotional and ethical education that parents are no longer able to provide. Consequently, these schools and institutions will have to provide a much

more comprehensive education to ensure that the children and students entrusted in their care, will not only be equipped with adequate knowledge and cognitive skills, but they will receive education that will also shape and enhance their psychological, mental, emotional, moral, ethical and spiritual development.

An extensive research should also be launched to examine the conditions and circumstances of personal development, schooling, education and other aspects of life of outstanding individuals, to ascertain what factors and conditions have most significantly contributed to the development of such exceptional people. This may help us to find out whether some of these time-tested factors and conditions of the past could be replicated, re-created, reproduced and successfully “transplanted” into the present and future educational setting and become a part of our educational environment. This may ultimately provide us with an opportunity to create in our environment such contingencies through which we could maximize our chances to produce a large number of outstanding graduates and outstanding well- educated individuals.

5. TV and the Mass Communication Media

The television and mass communication (TV&MC) media are one of the most powerful agents and catalysts of social and societal changes, and have the most influential impact on education, especially on education of the public. These media have become one of the most accessible and most pervasive sources of information; and the most influential tools that validate (or invalidate) our life experience(s). They also allow us to share and internalize experience(s) made by others (either real or fictitious) and consequently, they can profoundly influence our feeling, thinking and acting. They can captivate, sustain and command our attention, influence our perception of reality, shape our world views, our attitudes, and our values and beliefs. They can have a tremendous impact on shaping the human mind and consciousness of the viewers and on influencing their behavior.

The average child and adult spends an inordinate amount of time each day watching TV and learning what is going on in the world, or in the lives of other people. The viewers usually select TV programs in order (1) to obtain news or information; (2) to be entertained; (3) to learn new things (4) to relax and/or to escape reality; (5) to gratify their real or imaginary needs; (6) to become imaginary participant in the action(s) of the play; (7) to re-affirm their beliefs and validate their own views and perceptions of reality or some of its parts or manifestations.

In responsible hands, the TV&MC media can be marvelous educational tools. They could provide us with wonderful educational and entertainment programs, with timely and relevant information, and with a truthful description of events and unbiased news. They could motivate and inspire us to kindness, compassion and human love for each other. They could help us to promote positive role models and provide us with examples of exemplary behavior of human beings worth emulating. They could help to develop in us all those human qualities and attributes we need to have so that we could function as good, civilized, noble, well-educated, kind and caring human beings.

It is gratifying to see that there are some TV&MC media that earnestly strive to fulfill such a positive educational role. Amongst them are a few independent TV and radio stations, small independent newspapers, specialized TV Education, Discovery, and History channels, and a number of independent Public Broadcasting TV stations, supported largely by viewers like you and me.

Regrettably though, the overwhelming majority of mainstream TV and mass communication media owned and controlled by a handful of powerful individuals and corporations, play an insidious and harmful role in our society, and negatively influence education of the public. These media have no scruple to conceal from us important aspects of reality, deceive us, lie to us, and misinform us whenever it suits their political and/or economic agenda. They do not serve and do not act in the public interest. They serve the overt and hidden controllers of this world and all those who ‘pull the strings’ behind the scene. They strive to brainwash people and turn them into malleable, uninformed, uncritical, unthinking, compliant, submissive and obedient consumers, who can be easily fooled, deceived, manipulated and conditioned to react on cues as the proverbial Pavlov’s dogs.

The mainstream TV&MC media have been helping to promote and sustain the prevailing orthodoxy and the political agenda of those in power. Towards these ends, they strive to instill in us *their* values, beliefs, views and attitudes. They program us to think, feel and behave the way *they* want us to think, feel and behave. They strive to program and manipulate us so, that ***whatever we should learn and know about ourselves, our society and about the world in which we live, we should learn and know only and only through them.***

The *mainstream* media have already succeeded to program and persuade most of the people that whatever is reported by them must be the truth, and that, whatever is not reported by them, does not exist or did not happen. The mainstream TV&MC media have also been striving to teach us to forget, disregard, suppress and to “*unlearn*” all the good things that we have learned throughout the valuable lessons of our history and through the personal experience in our life.

These *mainstream* media strive to manipulate us at many levels. They strive to blunt the acuity of our perceptions, suppress our independent critical thinking, cloud our judgment, and destroy our common sense, and our values, ethics and morals. They strive to “teach” and “educate” us how to view reality, and how to perceive, process and act upon the information (or misinformation) and “knowledge” they present to us.

In essence, the ***mainstream*** TV&MC media are primarily responsible for the breakup and disintegration of our society and for destruction of our culture and our civilization. They helped to build and sustain the Culture of War, Violence, Injustice, Ignorance and Death. They have significantly contributed to the development of brutal Neolithic Barbarism that we are experiencing today around the world.

Besides the varying entertainment value, TV&MC media have contributed only in a very limited way to cognitive aspects of education. However, over the last several decades the TV&MC media, especially the mainstream media, have totally failed to provide adequate *positive* psychological, societal, mental, emotional, spiritual and ethical support and education to viewers (with the exception of some independent public broadcasting TV stations or some religious, faith-based channels that strive to fill the gap).

In fact, the monopolistic mass communication media, especially the mainstream TV, have been playing one of the most insidious and destructive roles in our lives and in our society. They have been undermining the moral values and the moral fabric of our society; ridiculing everything that is good, moral, wholesome and healthy; and promoting immoral behavior, deviant life styles, and the culture of war, violence, belligerence and aggressive confrontation.

The entrenched **monopoly** of the mainstream TV&MC media have such a destructive power and immoral influence on our lives and on our society, then even the best educational reforms in the world will not be able to offset the evil influence of these media, unless their monopoly is first broken up, and these media are replaced by new socially responsible institutions.

Education cannot be divorced from the wider societal context and the sociopolitical environment in which it exists. In order to improve the (quality of) education for all we have to improve the quality of the context and the quality of the sociopolitical environment in which the education is to be conducted. The ecological clean-up of the sociopolitical environment may be the necessary precondition and a prerequisite to any successful educational improvement or reform. Education process is influenced by the confluence and by the synergistic combination of various factors, which work together in concert. By removing from this combination those factors that impede and impair this process (for example by breaking up the monopoly of mainstream TV&MC media; or by developing alternative media), we will be able to successfully create preconditions and the proper environment in which all the positive aspects of education will be able to flourish.

6. New Learning Tools, Concepts and Approaches/Strategies

In order to effectively improve education with all its aspects and facets, it will be necessary to overhaul the school curriculum and to introduce relevant new programs and courses that will help us produce well educated students and graduates who are not only highly motivated, knowledgeable, creative, and skillful, but who are also good, noble, compassionate, decent, caring and loving human beings. In order to accomplish that, first we will have to educate and train competent teachers who should be able to handle such a demanding task. In addition, we will have to more closely involve parents, the communities, service clubs, youth associations, public figures, artists and various prominent personalities to whom the children/ students could look up to and who could play positive role models for them. All these people should help to provide appropriate guidance and involve the students in some sort of useful activities, and social and community work. This should help the students to better appreciate and understand the wider social environment in which they live. This should also help them to better appreciate their fellow human beings and their everyday plight and problems. In these innovative educational programs the children and students should be taught that everything they desire to have in life - *must be earned*. They should also be taught that under all circumstances they must always be kind, respectful, helpful and caring to each other, and to all other people they meet. Such a broadly based education should improve the quality of individual members of our society, the quality of society at large, and ultimately should help to enhance harmony, peace and the quality of human life for all.

The restructuring and revamping school curricula will require a careful examination of the current state of education, a clear vision of our educational objectives, careful planning, and a clear idea of what we want to accomplish and how best to achieve it. One of the most important aspects of this plan should involve adoption of appropriate strategies and tools that could help to encourage, inspire and motivate the students to willingly learn and operate within this new and broadly based educational framework. Another challenge of this effort will be to provide the students with relevant learning tools and resources (books, computers, instructional programs, courses, and seminars) through which they could learn *how to learn and study most effectively* on their own. They should be taught how to acquire the maximum amount of knowledge and how to efficiently master various educational / learning tasks and assignments within the shortest possible time and with minimum energy [32, 38, 40].

They should quickly learn all the related aspects, factors and conditions that facilitate or impede the learning. For example they should study how the human brain and mind operates and how it influences the learning and creativity under various conditions [9, 10, 11, 12, 43, 51]. They should also learn how nutrition and nutrients influence learning, memorizing and recall of knowledge and information [36, 50], how various biorhythm (circadian, lunar, etc.) aspects can influence learning, and how breathing, and various activities, practices and exercises affect the learning efficiency and performance [3, 9, 10, 32, 39]. They should also learn how sleeping, resting and exercising influences the learning process [39, 40]. All this will help the students maximize their learning efficiency and allow them to achieve their educational objectives within the shortest possible time and with minimum technical-economical costs.

There are many new tools, methodologies and technologies available that can be used to effectively enhance learning process and various other relevant aspects and facets of education. These new tools can help to speed up the knowledge acquisition and knowledge transfer, stimulate creativity, accelerate learning and maximize human potential. All these new tools can be utilized and incorporated into our new design for quality education. For example, some of the new tools of Mind Induction Technology (MIT) developed by this author for computerized induction of hypnosis [29], for accelerated learning and conditioning [32, 34, 36], for supra-cognitive and subconscious learning [21, 22, 26, 32, 34], electronic knowledge transfer [26], for synergistic conditioning and psychic driving [21, 26, 29], for mind / brain programming [26, 29, 31, 34, 36], for learning and experiencing in the Virtual Reality Environments [21, 22, 26, 28, 29, 31, 32, 36], and others, can all be utilized to enhance the process of education and to optimize learning. All these tools, systems and techniques can easily be modified to foster all aspects of education; i.e. not only the cognitive ones, but also the social, experiential, emotional, ethical and many other important, and hitherto ignored or neglected facet of learning and experiencing.

7. Education through Experiencing

One of the most essential features of education and learning is *experiencing*. It involves and combines cognitive, emotive, ethical and other important facets of learning. It materializes either spontaneously in our lives, or it can be engineered or produced artificially within (or outside) the structured environment of our educational institutions. Experiencing may be viewed as a process of internalizing an experience. This process has an important value for the learner. It plays an important role in our life. It ‘teaches’ us a lesson, from which we can learn for the future.

Under certain conditions, we can also share the experiences of other people. Something that is experienced by another person can be, to a certain extent, also ‘indirectly’ experienced by us. This can happen if we witness and internalize whatever the other person(s) has experienced. Essentially, we can experience and feel what the other person experiences and feels if we are able to deeply empathize with such a person.

We can also internalize and share the ‘experience made by others’ if such an experience is transmitted, transferred, communicated or otherwise intermediated to us through communication media (e.g. TV, theater, film, video, etc.) or through other means (electro/magnetic brain stimulation, hypnosis, sensorial manipulation, conditioning, etc).

The experiencing, i.e. the process of internalizing an experience, can be altered, controlled, managed and manipulated by altering the sensation, perception and/or apperception¹ (for instance in hypnosis). This can greatly influence the educational/learning outcome, (both positively and negatively). By using various Mind Induction Technology (MIT) tools, we can either maximize the desirable learning outcome (for instance: to accelerate acquisition of knowledge) or to minimize or eliminate the undesirable outcome (for example: to inhibit or eradicate phobias; reduce anxiety; to get rid of the compulsive/obsessive behavior; drug addiction, etc.).

Advanced information technology systems can be used to generate a wide variety of artificial Virtual Reality (V.R.) environments within which a wide variety of new kinds of “virtual” or “artificial” experiences can be induced and internalized. These computer-based systems can synthesize, create, re-create, replicate and produce new and varied kinds of artificial realities. If a learner (a person or a group) is placed and immersed in such a computer controlled and computer-driven V.R. environment, which is programmed to generate certain synthesized events or situations, then the learner will accept and experience (i.e. perceive, process and internalize) these synthesized events and situations as the most natural events and situations, i.e. as if they would have spontaneously occurred in his natural living environment. This “artificial” synthesized experience also dubbed as “Virtual Reality Learning Experience” (or VIRELEX) produced within the confines of computer-generated and computer-driven V.R. environment can be viewed as a computer-created, synthesized experience, that under the circumstances will have the same (or similar) effect and influence on the person that any other naturally encountered experience would have. Such a synthesized experience would thus produce *the same or similar educational/learning outcome as any other experience that would be normally encountered in real life.*

There are many bad experiences that we have to endure in our life. Some of them can linger in us for a long time, can leave ugly scars on our soul, and have many undesirable side-effects and aftereffects that can negatively impact our development. In order for us to develop normally, we have to counteract and offset the negative effects of these bad experiences by good ones. To achieve that, we need to open and expose ourselves to some good *corrective experiences* to compensate for the traumatizing experiences. The proposed MIT/VR technology can help us achieve that by generating for us a variety of synthesized corrective learning experiences, whose internalization by respective individuals (or groups) can make up for the bad traumatizing experiences, can help to recover from the trauma of the past, and thus can ultimately help to ‘normalize’ life again.

The VR environment has already been used for educational purposes for training pilots, astronauts, law enforcement officers, surgeons and medical personal, students and diplomats learning foreign languages, and in many other areas. There is no reason why this promising technology could not be further developed, expanded, and systematically utilized in our educational institutions as an effective learning /educational tool. In addition to facilitating conventional learning in our educational institutions, this novel technology can also help to impart the students with new learning experiences, and educate them in the future in the areas in which it was not possible to educate them properly in the past.

¹ Apperception is defined as a processing of knowledge and information by the human mind/brain.

We can use this MIT/VRE technology for educating/ teaching children and people to become more sensitive, kind, caring, considerate and compassionate human beings; to better appreciate the plight of other less fortunate human beings, to be more respectful to each other, and to their parents and to elders. Through this technology we can teach children to empathize with other people by letting them internalize all kinds of personal experiences and feelings of other people at a very deep level. This technology provides the learner (a child, student, adult or a group) with feedback information about the feeling of the other person(s), and uses this information to evoke, intensify and amplify the internalized experience and the corresponding feeling in the learner. In a sense, this ‘feedback’ information operates as conditioned (or conditioning) stimulus in the process of respondent or instrumental conditioning [28, 34, 36].

The MIT/VRE technology for example, can help the children or adults internalize the experience and the feeling of the pain that other person experiences and feels when they (or someone else) would hurt such a person physically or psychologically. It can also help them to experience how it feels to lose someone or something, or how it feels to be disabled, incapacitated or afflicted with a certain condition or disorder. It can also teach them to experience and feel the joy and pleasure that other person feels when they are considerate, kind and helpful to such a person.

In the past, for example, in a classical classroom setting and without the MIT/VRE technology, we could teach children how to empathize with and appreciate the plight of blind people, by blindfolding them and letting them navigate for a while in a certain environment with obstacles to let them learn to appreciate and experience how it feels to be blind.

In the future, we can use the VRE technology tools in a similar fashion to produce, synthesize, create, and simulate many other life-mimicking situations and circumstances within the environment of Virtual Reality. This will provide the learner with numerous learning experiences and lessons of how it feels in many other conditions and circumstances of human life. One can easily imagine how this technology could be used to educate public, combat drug addiction, prevent crime and criminal behavior, heighten motivation, and to stimulate an interest and zest for further learning and for expanding human potential.

Experiencing further supports and strengthens the argument for the concept of transdisciplinary-, interdisciplinary- and multidisciplinary-oriented education; for experience gained in one field, once fully internalized, can easily commute and migrate from one field to other field(s) as an easy interaction of their similar properties. *Experiencing* also teaches us to anticipate the situations that may come up in the future. *Experiencing* and *anticipation* have an enormous survival value and are an essential part of life-long learning and education. The ability to *anticipate* is an essential property of *human intelligence*. *Experiencing* and *anticipation* allows human beings (and many other biological systems) to adapt, to sustain themselves, to survive and even to prosper within a constantly changing and frequently hostile and inhospitable environment.

8. A Glance into the Future

In a wide variety of the above outlined tools and methods that should be further developed for educational purposes, one category of MIT (Mind Induction Technology) systems and techniques seems to be particularly suited for these purposes.

Accumulated evidence shows that education and learning is greatly influenced by the way in which the human mind and brain perceives, processes and utilizes various kinds of signals, information and knowledge. Available evidence also shows that under certain conditions and in certain states of consciousness, the human mind and human brain can perform better than under other conditions and states. For example, we know that a person learning at a full consciousness level, whose brain/mind under normal conditions is functioning in the so call β -state with brain frequencies above 14 Hz (i.e. cycles per second - c.p.s.) will learn and will function differently than if his brain would operate at lower frequencies (say at frequencies ranging between 7 -9 Hz (c.p.s.). So the person whose brain currently operates at frequencies above 14 Hz (c.p.s.) will input, perceive, process, store, recall and utilize different quantity and quality of information and knowledge, than if his brain/ mind would be in the semi-conscious α -state operating / functioning at frequencies within the range of between 7 – 9 Hz (c.p.s.). Thus a person whose brain/mind functions at frequencies above 14Hz will perceive, memorize and recall different things differently; then if his brain would operate at frequencies ranging between 7 – 9 Hz. This may be viewed as if a central processing (hardware) unit of a super-intelligent bio-computer (i.e. the brain) would utilize different kind of software at different frequencies.

The implication of the above described phenomenon for education and learning and teaching is quite obvious. Therefore in our current and future research we will have to focus on systematic exploration of conditions of the mind/brain states to determine which of them could best be utilized in the learning process to maximally facilitate, enhance and accelerate the learning [26, 28, 32, 40] and improve the quality of education.

There are many other new tools, techniques and approaches that could contribute to the advancement of education. Some of the most promising of these tools that merit further research and exploration is a special category of Mind Induction Technology (MIT)-systems and techniques that allow us to directly input, transfer and transmit information and knowledge into human mind/brain *without learning*. Other important tools and methods are those that allow us to expand and extend the capacity, versatility, fertility, creativity and other desirable properties and attributes of the human mind, brain and spirit beyond the present boundaries and limitations. We presently have a variety of means and tools available that can help us to accomplish this and even enable us to make another qualitative jump in the intellectual development of mankind.

Another example of the aforementioned tools that merit further exploration are special systems that can induce, generate, and create artificial images and experiences directly in the human mind. These artificial images produced directly in the human brain can evoke all the pertinent qualities, sensations and sensorial experiences (visual, acoustical, olfactory, etc) which are internalized and felt by the person as if they would be real and natural. Here, we can create Virtual Reality images and experiences directly in the human mind without a need of placing and immersing the person into the classical type of V.R. environments.

This can be accomplished without psychotropic drugs, electro-stimulation of the brain, sensorial driving, hypnosis or any other similar artificial props. These new tools enable us to rewire and reprogram the human brain, mind and spirit, and even influence the functioning of the human body. Although this author has primarily been developing some of these systems/ tools for

applications in Medicine (for example for treatment and prevention of illnesses caused by a weakened or malfunctioning immune system) [21, 28, 31], these tools also have tremendous potential and promise in many other application domains, in particular in the area of learning and education.

9. Concluding Remarks

Some of the above outlined systems tools intended for the use in education can also be *misused*; i.e. misused for brainwashing, propaganda, advertising, behavioral control, unscrupulous military applications and for many other nefarious purposes. In order to prevent their misuse, we have to ensure that this powerful MIT-technology will only be placed in the hands of highly responsible and ethical individuals with high moral standards, who will provide a guarantee that such systems and techniques will never fall into the wrong hands. In addition to developing procedures for careful selection of highly ethical individuals who can be entrusted to use such powerful “double-edge sword” technology, it will also be necessary to develop a reliable mechanism of multiple checks and controls that would prevent its misuse.

The destructive effect and potential of this technology on the human mind can be much greater and more insidious than the destructive effect and potential of a nuclear bomb. This is why we all have to learn to become good guardians of this technology to ensure that such powerful tools will be used for peaceful purposes only and will serve for the benefit of all mankind. To accomplish this we have to appropriately educate our children and our students, to raise their awareness of this issue and alert them to the possible misuse of such knowledge.

The need for a new educational reform, supported by the innovative educational technology outlined above, has become a necessity, as human beings have, in the process, lost their inherent ability for proper reasoning and choosing for themselves. They have succumbed to external impulses, information and knowledge tailored uniformly for them as a ‘pre-packaged’ thought or decision ‘ready-made’ for consumption and assimilation, e.g. as in the case of the fast food culture. Uniformity, mediocrity and compulsion have become the rule, while diversity, excellence and creativity have become an exemption. Superficiality, ignorance, reductionistic thinking, and acting on cues pervade every aspect of human life. In the field of education, starting from educators, every component of educational system, including the families, have received and passed on uniform information, uniform concepts, and uniform view of the world. This indoctrination has been imposed on us by those in control of various socio-political, economic and legal institutions, corporations and organizations. The uniformity, mediocrity, and uncritical thinking are also imposed on us and promoted by the mainstream mass communication media, and by all those who have a vested interest in keeping us in darkness, ignorance and blind obedience.

The new educational tools discussed above can help us change this predicament and help us in our struggle against ignorance. They can help to endow people with new knowledge, skills and abilities that will help them to become good, kind, caring and courageous human beings who will fearlessly seek the truth and goodness, and who will be highly motivated to become good custodians of this earth both for the present and future generations.

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Architecture of New Modernity vs. Post-Modernity

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“Nowadays the Ethos of Individualism is regarded as a Myth rather than an Ethos hailing from the 17th Century Scientific Revolution and the 18th Century European Enlightenment. The Narrative of Modernity is, in a sense, the attempt to save the idea of Individualism from its esoteric background, without falling into moral Nihilism. The articulation of the Self in the context of coexistence with Others is the great challenge facing the European Mind, or simply, facing Europeans. Western civilization has to meet the challenge of the legend of the disappearance of the Self. For this central issue it is imperative to re-articulate the unity of theory and practice on the one hand, and to break down the barriers within Humanistic Studies on the other.” ISSEI – 2004

Abstract

Historic Modernity as an evolving movement in architecture has predicated on Grand Narratives to articulate a change in the condition of mind as it relates to the manifestation of its time. It resorted to new theoretical investigations in establishing the foundations of new spatial order. The shift in mindset created opportunities for the architect to claim a new identity in design and challenged the discipline of architecture to reconcile the differences between theory and practice. In juxtaposition, this paper reflects on the contemporary condition pertaining to the unity of theory and practice in Western architecture from the perspective of Humanistic Studies. It advances Axiomatic Narrative as the framework within which unity of the arts and the sciences may be sought. It aspires to advance a Common Culture for architecture and argues whether the disappearance of the Self in Western civilization is an eventuality. It questions the idea of Individualism in the context of Western coexistence with Others, which could shape the new Universal Mind. And it debates whether the new global Identity could manifest prominently in the new Language of Architecture and reveal profusely in the new Narrative of Modernity.

Keywords: Architecture; identity; language; new narrative of modernity vs. post-modernity.

Introduction

The new Narrative of Modernity as Coexistence of Differences is the new theme that the International Society for the European Ideas is articulating in formulating the 21st Century European Identity, in anticipation of the continent’s economic, social, cultural, and political integration. Paradoxically, the 20th Century Ethos of Individualism was elevated to the Mythos of Pre-tech European Ideology of the historical past and juxtaposed against the Logos of 5th Century B.C. rationality. The 17th Century Scientific Revolution and the 18th Century European Enlightenment are compromised by Trans-modernity of the new Millennium. It is argued that the intention behind the new Narrative of Modernity is to free

Individualism from Self-referentiality and advance omni-positivity. Hence, in this propagated scenario the European Mind is facing a dilemma in the re-construction of Self in the context of coexistence with Others. It is feared that the Western civilization will eventually face Self-discrimination, adhering to the identity of globalism. In defense of the European Self, it is thought to be of paramount importance to mend fences of theory and practice, and eliminate the divide within Humanistic Studies. This applies, in our present condition, to all forms of expression within the arts and the sciences, including architecture.

The new language of contemporary architecture in reference to the new narrative of modernity must be evolving from exclusivity to inclusiveness, if it is to articulate a new way of thinking in being and acquire a new expression in becoming. Hence, Idealistic (theoretical vs. pragmatic), Moralistic (strategic vs. economic), Realistic (tactical vs. technological), and Nihilistic (global vs. political) issues of the new architecture must be questioned, within the challenging realm of the new built environment. They must also be addressed to the application domains of Content, Concept, Context, and Comprehension of the practice. This should expand to include Efficiency of Means (site-climate / durability), Economy of Movement (resources / accommodation), Expediency of Space (need / situation), and Effectiveness of Communication (language-grammar / info-tech integration) in advancing an authentic understanding in new spatial setting in the 21st Century architecture.

Modernity in Antiquity

Modernity is not a contemporary phenomenon. It can be traced down in antiquity in the realm of identifying novel symbolic orders manifesting new dwellings in changing ideologies. It has attempted to embody a visionary yet elitist idealism, but subservient to the evolving dogmatism of the ruling class, whether religious or political. It has appropriated the newly found materials for the new built-form and space articulation and indeed has integrated advanced technologies in construction for the establishment of new organizational hierarchy. It has challenged the youth to adhere to new mission of “unifying” the world. It has advanced citizens’ aspiration for a more rewarding role-playing in life in pursuit of individual interests for self-fulfillment. It has articulated a new Language for a new Architecture expressing a new Narrative for a new Civilization.

Architectural Modernity resisted the Trans-modernity trend in confronting the evolutionary stages of ideology in theoretical investigations. It evolved from the realm of Tradition (convention / iconic / mimesis / dogma), to Invention (innovation / pragmatics / renewal / rejuvenation), to Revolution (symbolic / analogical / canonical / metaphorical), and eventually to Reactionary (neo-modernism / subversive / digital / flux) domains of making. In particular, Modernity engaged in articulation of architectural philosophies as defined by their energy manifestation. They referred to Conservatism (potential energy), Pragmatism (kinetic energy), Critical theory (reactive energy), and Radicalism (collision energy) in design theory and practice.

Mythos, Ethos and Pathos Revisited

The Mythos of architecture as the legendary creation embodied the cosmology of the time. The mystery of architectural mind as the imaginary creator of axiology manifested the idea of the artifact embedded in built-form and space. It established the Ethos of architecture as

enhancing the distinctive character of the pre-19th Century classicism. It articulated the moral rules of conduct in response to the 17th Century Scientific Revolution and the 18th Century European Enlightenment. With advances in steel and glass construction technology the built-form and space became manifestations of the Industrial Revolution. Hence, new architectural typologies came into existence changing the urban landscape. Railway Terminal Buildings, Crystal Palaces for Exhibition, and Complex Industrial Plants and Plantations, to name a few, defined the new challenges of architecture. Then, majority of the practicing architects resisted the Narrative of Architectural Modernity and resorted to the idea of esoteric Individualism falling into moral Nihilism. Architects subdued themselves into the realm of the crafts, rather than appropriating new technologies and materiality in design.

Decadent building ornamentation and fatalistic architectural styles dominated the Pathos of architectural practice, which glorified the emotionally charged class hierarchy in the domain of power struggle. Abundant examples of these building types can be found in major European capitals. In this era -- in particular in downtown settings of Vienna, Prague, Rome, London, St. Petersburg, Berlin, Budapest, Madrid and Paris geometry -- form, space and materiality were in a confused state of existence, in their built-form expression, due to their excessive “needle-work” ornamentation in architecture.

20th Century Phenomenon

This era of Industrial Revolution in the Western world reconfigured the urban landscape, in continuum with the previous centuries’ mindset. With the compounding influx of migrating peasants from the countryside into the city center, it consolidated the establishment of a productive, yet unfulfilled working society. It created wealth for the emerging new class of industry managers and created further schism between the rich and the poor by misappropriating the accumulated riches. Indeed, architecture of the time is a true manifestation of the societal struggle. The showcased green neighborhoods, carefully designed to “proclaim” the wealth/power of the ruling class, were markedly in contrast with the chantey slums mushrooming in the industrial neighborhoods.

All major European industrial centers still carry these architectural scars as remnants of the era. At the turn of the 20th Century, however, the European industrial wealth transformed itself into a mighty economic, military and political powerhouse, which transformed itself into a formidable war-machine. It established the basis for a romantic nationalism with connotations of self-proclaimed messianic superiority of knowledge in sciences and technology.

The class-subjugating powerhouse extended itself into an ideology, which promoted “know-why” for nature subordination. It predicated on “know-how” for territorial colonization and “know-what” for nation annihilation. The World War One tested the limits of human resolve for preventing senseless cruelty, ridiculing the gods’ ineptness for religious intolerance and challenging the instrumental reasoning for irrationality. It left behind a ruinous Europe with unimaginably wounded soul -- irreversibly disfiguring the continental body, permanently shattering the foundations of humanistic character, and eternally torturing the wisdom of the civilized mind.

Logos Revisited

The post-WWI era was a wake up call for the human senses to revolt against the universal social disorder. Gods were put to rest to promote understanding among warring factions. National identities were discredited and inferiority complexes were condemned as the foundation of human tragic condition. Men were declared universally equal, whether educated or illiterate, in their pathetic misery, without discrimination of race, ethnicity, language and culture. Indeed, empires had collapsed and cities devastated; cultures had smashed and civilizations trembled; and science and technology ridiculed. Then, the Platonic vision for democracy in global citizenship, Socratic mission for decency in regional governments, and Aristotelian metaphysics for pragmatism in manufacturing quality goods and providing life-supporting services – all as principles of Logos – were revisited. The new rationality in modernism of the post-WWI dictated the terms of the classless society on the governing institutions, with demands of equal individual rights to decent housing, opportunities to advanced education, responsibilities to rewarding work, and respectful access to artful, yet meaningful, entertainment for reflection.

In addition, the organization and management of nutritional food supply and the establishment of fair health care facilities, monitored by world authorities, were seen as laying down the foundation for the eradication of endemic poverty. The world had yet to overcome global pandemic wellness challenges.

New Modernity

Indeed, the promise of new modernity in the first half of 20th Century, then, was to raise man from his pitiful mindset of the perennial needs and habitual wants. It attempted to elevate humankind to deserve to dream, longing to claim universal identity, and aspiring to project a global association. Mind aspired to belong to the present. In this scenario, architecture of modernity adhered to an International Style negating the past. Memories were erased, landscapes shifted, attitudes towards history reexamined, and priorities changed. The science and technology of annihilation and destruction now meant to be the optimum tools for rejuvenation and reconstruction. Architecture without borders had to be in charge and building for humanity had to serve to basic and social needs of humanity.

Between 1920 and 1937 A.D. modernity in its manifestation arrived to the apex in promoting humanistic values embodied in architecture. The Bauhaus movement, pioneered by Walter Gropius and Mies Van der Rohe, advanced the design of new Industrial Buildings in Germany. It appropriated new geometry in pure form and spatial expression. The Soviet Constructivist school of thought designed new housing complexes for socialist dwelling. Futuristic young and restless Russian architects promoted in urban settings environmental art with sculptural attributes, attempting to transform the city landscape. The Italian Structuralists utilized reinforced concrete in creative ways to construct large shelter spaces for Exhibitions and Sports Facilities. Franco-Swiss artful functionalists adopted new principles in city planning and adopted amorphous forms in building design, led by Le Corbusier. And North American Organicists, articulating ideas of Frank Lloyd Wright, attempted to design building artifacts in harmony with nature. All these visionary architects, urban planners, and industrial technologies contributed to the fundamental changes in thought provoking urban design and advanced thoughtful making of global architecture.

This era was inspired by the historic civilizational antiquity embodied in the ideals of Hellenism of the 5th Century B.C. The irony is that architecture of Modernity exercising freedom of self-expression in built-form and urbanity came to an abrupt halt in late 1930s in Italy, Germany and the Soviet Union.

The humanistic foundation of modernism in the arts and architecture, then, became the victim of the ruling ideologies manifesting the whimsical wishes of the newly emerging dogmatic hierarchy. They, the oligarchy of command and control, opted for the Roman Imperial Court as model for the artwork and artifacts for the glorification of self-induced authority. Indeed, “in form National and in essence International” was the new dictum for all people to adhere in the arts, music, sculpture, literature and architecture creation.

The hidden agenda under the banner of “National/International” dialectics was the establishment of a New World order of tyranny in the Soviet Colonies and a new dictatorship in the Central European Territories. Hence, in this realm, architecture of brutalism, in scale and form, dictated the imagination of designers to subjugate the masses – the involuntary populace. Institutional buildings of the architecture of inhumanity dominated the skies of many European countries until the World War Two flared up. Once again rationalism became the victim of emotionalism and the heroic efforts put forward by humanist intellectuals to reconstruct a new European Self came to no avail.

Post-Modernity

At the end of 1940s, immediately after the WWII armistice, ideas embodied in the works of three prominent thinkers came to herald the dawn of Post-Modernity. In “Cybernetics” Norbert Wiener articulates why man-machine communication system would give man superior control over the “ignorant” machine. Hence, cybernetics based on information feedback and feed forwarding control in fact would make man appear “intelligent.” Indeed, it would attempt to protect mind’s “glorified” ignorance.

In “Information Theory” Claude Shannon advances the idea that information could be explained in terms of “reduction of uncertainty” by controlling noise and fuzziness in communication. By extension, this would lead to manipulating redundancy and repetition in dialectics. Hence, information theory would attempt to empower man with machine “ambiguity” to control the “ignorant” man. And in “1984” George Orwell anticipates a scenario where the Big Brother would embody hi-tech and sophisticated information systems to control the “ignorant” society. Hence, the supremely non-intellectual communications control system would eventually suffocate not only the “dormant” society, but the “intelligent” Big Brother, too.

Reflective Thoughts

Post-Modernity in architecture in the second half of the 20th Century attempted to embody humanities’ ultimate desire to be “free” from man’s inventions, discoveries and creations and aspired to setting up non-controlling norms, tools, and dogmas. Hi-tech based communication systems defied the emotional unconscious in articulating novel ideas. Even when the information

tools did attempt to manifest the universal “wisdom” of the collective, the individual mind has striven for branching away to seek exceptions to the rule. The designer has aspired to comprehend his own condition through architecture of self-criticism, social condemnation, law and order obfuscation, and communication misinterpretation. Hence, Post-Modernity reflected on humanity’s environmental, economic, social and cultural paradoxes. The schism between theory and practice remained wide spread negating any relevance attributed to Humanistic Studies. New Modernity in the New Millennium will be seeking Axiomatic Narrative for the unity of the arts and the sciences; it must adopt a change in human intentionality to focus on man-nature mutual nurturing. Then, a Common Culture for architecture could be advanced and the Self in Western civilization as an integral part of the new global identity could be articulated. Hence, New Modernity must attempt to embody the idea of Individualism in the context of coexistence with the World. It must strive to shape the new Universal Mind and advance a new character that could manifest prominently in the Language of new Architecture and reveal profusely in the Narrative of new Modernity.

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ASPECTS ON "THE WHOLE IS MORE THAN THE SUM OF ITS PARTS"

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The Abstract

The famous refrain "the whole is greater than the sum of its parts" and its variants that are used as axioms in many scientific fields seems to be an unsolvable puzzle. It is a definition that easily leads into deductive and reductionistic reasoning models. Its ambiguous contents can, however, be solved by understanding the ambiguity of onticity and ontology, the role of interconceptuality, observation paradigms and the relativity of deductionism, abductionism and inductionism. It also appears that the crux of the matter is the ambiguous concept of "whole" which can be interpreted either as system, or emergence, depending on the systems scientific paradigm.

Keywords: whole, sum, parts, conceptualization, deduction, induction, abduction, hard and soft systems thinking, model-reasoning, hologram.

1. INTRODUCTION

Kauffman, repeating a common refrain states, "The whole is greater than the sum of its parts." This refrain appears in many forms. The original form, "whole is more than the sum of its parts" comes evidently from Hegel. Some prefer to say the issue in different ways: "the whole equals much more than the sum of its parts", "or the whole is something else than the sum of its parts". Most systems scientist say: "a system is more than the sum of its parts". One of its founders, Bertalanffy brought the idea of emergence which means that the properties of a system do not come simply from the properties of its parts. Checkland points out that "there are not such things as systems in the real world waiting to be identified; we choose to identify certain collections of people and things as systems. To talk about systems is to talk about *a* way of looking at the world, not *the* way". It has also been noticed that the whole is less than the sum of its parts. Someone may even have a good reason to say: "the whole is the sum of its parts". – What can make out of this all? All these statements are reductionistic ones that sound like deductivistic axioms or general laws used in deductive reasoning (all men are mortal, etc.). They also contain an unexpressed inductionistic premise: (when A, B, C and D are E) "then whole is more than the sum of its parts", etc.

2. ONTICITY – ONTOLOGY PARADOX

I maintain the conviction that when we say that something is a fact – such as "the whole is greater than the sum of its parts", we paradoxically treat it as an ontic truth. This refers to what Checkland says above about "a way of looking at the world." However, we should recognize that presenting facts means presenting conceptual definitions about ontic truths. Thus facts are "in fact" (sic!) ontological concepts. I have elaborated in detail why it is not possible to talk about

reality as such. We think and believe that we communicate about reality; this is a fallacy: we communicate about conceptualized reality. Thus, the statement should be formulated as follows: “the conceptualized whole is greater than the conceptualized sum of its conceptualized parts”. The same applies to the variants of the statement.

3. INTERCONCEPTUALITY – OBSERVER ORIENTATION

According to systemicity, no entity (whole, sum, system or part) exists in isolation; everything belongs into some kind of a system or systems being simultaneously systems themselves. In that light a part may be a whole or a system, a whole or system may be a part (of another system/s), and a sum can be taken as a system description, etc. All theoretical reasoning, be they axioms, definitions, statements, logic or thinking processes, are kinds of conceptualization; they organize into concept systems that are expressed through concepts. Therefore, they link to other concept systems (interconceptualism, see Mikkonen 2004). Also, in systemicity things exist and are connected together in levels and scales, above, below, before and after, etc. This viewpoint takes the statement into the field of cognition (in this case into interconceptualism), and we know that cognition is always observer-oriented. This refers to what Checkland says above about “a way looking at the world.” It means that we should formulate the statement as follows: from a given observational and interconceptual view “the conceptualized whole is greater than the conceptualized sum of its conceptualized parts”. This implies that from another observational and interconceptual view angle it is not necessarily valid.

4. NO ABSOLUTE COORDINATES – RELATIVITY OF PARADIGM

Because of the dynamic complexity of the ontic reality there is no fixed point in that reality; and there is no fixed and absolute point in the universe. Similarly, there is no fixed point in conceptual definitions neither fixed laws. We should admit that there is no fixed point in the ontological reality (representing the ontic reality). There cannot be any absolute and final definition or concept system on any matter. And when there are no absolute coordinates, we have to navigate in the sea of conceptualization according to the coordinates of the particular conceptual environment available. The usual coordinates in science come from paradigms and theories inside them. The most famous traditional paradigms in reasoning are deductivism, inductivism and abductivism. They are not only methods of logic because they include an attitude towards reality, they relate to what is taken as true. In deductivism the starting theory serves as an ideological axiom of that what can be true, in inductivism there is no starting theory; the truth is completely unpredictable in abduction, the truth is taken as relative and surprising. These thinking premises lead into different interpretations of the possibilities of the statement we started with.

5. DEDUCTIVIST PARADIGM

If we move in a rigid and closed negentropic concept system we use deductivist premises. If we do so, we should say: the whole is the sum of its parts. This is true with a name list or things

similar: a name list is (not more or less than) the sum of its parts (= names of the list), be they in whatever order. If we mean an alphabetic name list the same applies. Observing the whole (name list) does not give any new information to the already known totality of the names. If a name is missing we notice it easily and state that the list is not the whole. In deductivism the starting theory, or axiom is an articulated "list of concepts" that represent corresponding things of reality: "all A is B... (all men are mortal..." This is because the concept A represents the total sum of the attributes or characteristics (of man, in this case), and the concept B continues to elaborate these attributes: "A is B...(man is mortal). Although in practice we know that man is also other things than mortal (A is...n) the deductivist paradigm and logic does not allow this option; it is negentropic.

6. ABDUCTIVIST PARADIGM

If we mean that the whole is more than the sum of its parts, or the whole is greater, or something else, than the sum of its parts we are observing a complex system with richer differentiation and integration of the parts. While observing the different parts and their connections we experience a sensation of something new emerging, a Gestalt that does not necessarily have any of the features of its parts. This, to my understanding, is a moment of a creative or an abductive experience. It may be an experience of sensation, perception or reasoning/conceptualization. Another feature of complexity is that the whole cannot be even dissolved into pieces because then the totality is lost.

The process of abduction reads: (1) Noticing a practical problem/situation: A is B, A is C, A is D (2) Conception of an intuition: A could also be G. (3) Formulation and identification of the intuition: A seems to be G. (4) Finding and analysing material that logically supports the intuition: A could be G because also $B = D$, $C = D$ and $E \text{ minus } F = B \text{ and } G$, and $A \text{ is } E \text{ minus } F$. (5) Formulating and identifying a possible theory: A is G. We can prove this by using numbers: $A = 1 + 1$, $B = 2$, $C = 2 \times 1$, $D = 3 - 1$, $E = 5 \times 1$, $F = 3 \times 1$, $G = 5 - 3$.

7. INDUCTIVISM AND REDUCTIONISM

It may be even that the whole is less than the sum of its parts, or the sum of the parts of a whole is more than the whole. How is it possible? This is possible in a situation when the degree of conceptual complexity of the totality that has been ascertained in a certain conceptual environment (discourse) loses that complexity when taken into another, less complex, conceptual environment. This happens when a layman comments on a complex scientific issue. An observer comes into a conclusion: A, B, C, D, E and F are G; another observer comes into the conclusion: because A, B, C, D, E and F are G, then also D, E and F are G. Or, because $1 + 1 + 1 = 3$, then also $1 + 1 = 3$.

The complexity value of "the whole" (G) changes from one instance into another because usually people do not like complexity, or they have difficulties to deal with it. Complexity is reduced into a negentropic, closed and unchanging system. Take, for example, the concept of Finnish society. In a given discourse we may assume that this concept means a rich and complex mixture

of cultural behaviour and strata of the Finnish society. But in another later discourse we may make a conceptual "mutation" and use this conceptual complexity as an undynamic and "primitive" part of another concept system (e.g. Finnish society is psychologically introvert). It seems that our minds tend to treat reduce the degree of conceptual complexity towards the top concepts/general concepts. This is the feature of reductionism and generalization. If we accept that certain selection of parts (D, E and F) suffices to prove the whole (induction) and leave the rest of the possible parts (A, B and C) unexamined we reduce the whole (G) on the expense of the parts. It may be because of intellectual laziness or because of ignorance.

Interestingly enough, in the world of physics hologram is a phenomenon that proves the statement: the whole is less than the sum of its parts, or the sum of the parts of a whole is more than the whole. As we know, a hologram consists of countless small parts, each of which lets the hologram image to be seen from only its own individual perspective although its each part stores information about the whole image. So, hologram is a collection of inductive information on the object hologrammed, and each separate viewing perspective is a reduced idea of the whole hologram. Therefore, taken into the world of conceptualization we can induce an analogy: there is no absolute and final definition of theory on any matter; each singular definition or theory represents a tiny part of the whole hologrammatic theory.

8. THE PARADOX OF THE CONCEPT OF "WHOLE"

About the synonyms of whole, all, totality and entity. In terminology science, concept intension means all the characteristics that make up the concept, and concept extension means all the objects to which a concept refers. Thus, the extension of the concept of man, for example, covers all existing men (all "manlike creatures"), which means that all concepts relating to, or corresponding with all existing men covers all referents of men. That would represent the whole of man, the man-category. As intension means the set of all characteristics necessary to define a concept then the intension of the concept of man covers all the necessary characteristics of all existing and diverse human being types gathered together. They together represent the sum of the parts.

Taken extremely logically, extension and intension lead to an interesting dilemma. It means that on one hand, man/the man-category can be defined (provided we find all existing men – which is pretty improbable), and on the other hand, if the category cannot be defined, we cannot talk about man. But, how can we assume that all men of the world can be included in the whole of man unless we know beforehand what man is; which on its part means that we already know what all the conceptual characteristics of man are, which, on the other hand we cannot know unless we know all men!

Behind this dilemma, or circular argumentation, hides the "demon of deduction". Extension, as a concept, represents the Hempelian deductive starting point: all existing men, the totality of man. It seems that strictly speaking, in the light of non-linear dynamic systemicity, extension (all parts) and intension (sum of the parts) do not exist! So, we can never know the whole, neither the parts, nor their sum of the category of man. Realizing this we can see to how many other cases of "the whole" this applies.

Intension and extension are certainly practical tools for a structuralistic conceptual approach towards reality, and they represent one form of systemicity. But in the light of complexity, we can say that they together represent complexity and complex conceptual systemicity: namely, extension represents differentiation (parts) and intension represents connectedness (sum). If we say that all possible "manlike creatures" are men (without defining on what basis they are), this represents an extreme amount of differentiation (entropy). If we say that man must be this and that and that, etc., we create a bulk of strict rules of connectedness (negentropy). In summary, the concept of man means the whole, in which culminates the sum = intension, and its parts = extension. Thus, referring to the statements above we could say – depending on the degree of the negentropy - complexity – entropy: " a concept is more/greater (or the same, or less) than the intension of its extension".

9. HARD SYSTEMS – SOFT SYSTEMS

Here we come back to Bertalanffy and Checkland (see above), systems sciences and systemicity. We know that there exists two main schools of systems thinking: hard and soft. To hard systems thinkers, systems exist in reality and the world can be taken as if systemic; they seem to believe in the possibility of defining the intension and extension of objects (reality, onticity). To soft ones systems are useful (ontological) tools to look at the world. There is a way to find a reconciliation between these two main schools. It is to accept that onticity is something that we experience and take as reality, and ontology is something that we define conceptually as reality. Both happen in our minds, therefore, they get easily intermingled, because we wish at the same time to be the one that experiences and the one who explains this experience. As a matter of fact, the statement "the whole is (etc.)" carries an inherent observational implication and should be read: as "the whole appears to be (etc.)" because nothing is what it is on ground of what we state. In the statement "the whole is (etc.)" come together the wish of experiencing and explaining. Once again, we must notice that descriptions of phenomena are not the phenomena themselves and what we study of actual world is its ontological representation because the actual world cannot be defined "directly". If to some systems thinkers a whole (e.g. $1 + 1 + 1$) equals a system (system of added 1) and elements (of 1) equal parts (of 1), the sum (3) cannot be explained in the light of the sentence that the whole ($1 + 1 + 1$) is more than the sum (3) of its parts. If we take along the concept of emergence and take it as a way of looking at the world, of experiencing a sensation of something new, then emergence (3×1 , emergence of repeating element of 1 diachronically in time) equals the whole (3×1), system (of 3) equals the sum (3), and the elements ($1 + 1 + 1$) of a system or its subsystems equal the parts.

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