

BIOPSYCHOSYNTHESIS

by JOHN H. PARKS, M.D.

Medical Director, Blue Grass West Mental Health Center, Frankfort, Kentucky

Introduction

The term psychosynthesis points to a body of knowledge, including philosophical principles concerning psychotherapeutic and educational methods, aimed at complete integration for the human being including his higher nature and spiritual essence. The term also refers to the work of Roberto Assagioli, M.D., psychiatrist, writer, lecturer and founder of the Institute of Psychosynthesis in Florence, Italy. Dr. Assagioli, in a lecture entitled "Psychosomatic Medicine and Bio-psychosynthesis"(1) given in Rome, Italy, before the Plenary Session of the International Psychosomatic Week, several years ago, stressed two prevalent polar attitudes regarding the human body. The first attitude emphasized the over identification with the body and its sensations, a materialistic attitude attributing physical causes as the basis of the illnesses of humanity without regard to important psychogenic causes. The second contrary attitude was "intellectual" stressing the world of thought, feeling, emotions, and imagination, but neglecting the bodily and physical causes of human dis--ease.

The history of contemporary depth psychology and psychiatry can be understood basically as being centered on one or the other of these polar attitudes, or a synthesis of the two. Freud, despite his early materialistic training in the basic medical science, founded psychoanalysis on the empirical study of thought, feeling, emotions, and imagination, leaving basic biochemical and physiological studies to the next generation. Jung followed Freud's example as an "intellectual" empiricist. He was a scholar of alchemy and symbolism, but neglected the contemporary medical sciences.

The popular contemporary psychiatric school of psychopharmacology as founded by Jean Delay in France, Albert Hoffman and E. Kuhn in Switzerland, Gupta, De and Roy in India, H. E. Lehmann in Canada, H. Osmond and Nathan Kline in the United States, stressed the biochemical understanding of psychiatric dis--ease and the reversal of pathological biochemical systems in the psychiatrically ill by the systematic administration of appropriate chemical remedial agents. Much of this school of psychopharmacology has a materialistic bias and views psychological experience as epiphenomenal to basic material substance.

This paper, following the lead set by contemporary psychosomatic medicine, by Dr. Roberto Assagioli, and by the creative synthetic thinkers in both the "depth psychology" and "psychopharmacology" camps of psychiatry, will attempt to summarize Biopsychosynthesis in medical history. Following this brief historical review it will focus on psychiatric syndromes and psychological symptoms which have been completely reversed by orthomolecutar medicine without any attempts at psychotherapy. This will highlight the fact that biochemical factors may very frequently lead directly to psychiatric disease. Only a biopsychosynthetic diagnostic approach to anxiety, depression, alcoholism, mental retardation, schizophrenia and practically all other "psychiatric syndromes" can assure the diagnostician that he has considered all the relevant etiological factors in a given case. To merely find the psychological stresses, and do diagnostic psychological testing in a psychiatric disorder without a careful nutritional and physiological screening is irresponsible diagnosis in light of our present state of knowledge in medicine.

History of Medicine and Healing

I. *Magic, Myth, Religion in Primitive Healing.* The magic rites of primitive peoples include the role of the Shaman or witch doctor which is especially endowed and instructed in appeasing the awesome powers of nature. The Shaman is a combined priest, natural philosopher, and physician. Human illness with its concomitant emotions of fear of disease, death and suffering creates a very special and intense need in any human society. This need is met by the Shaman and his magic circle. The Shaman, chosen by the primitive society, is initiated into higher knowledge whereby he can control and manipulate the dread powers of nature

which cause disease. The aura of a healing circle is invoked by the Shaman by means of ritual, incantations, music, dance, rhythm, and herbal medicines. The Shaman in his person encompasses both the "depth psychology" attitude and the attitude of psychopharmacology. He stands for biopsychosynthesis.

2. *Hippocrates and Greek Medicine.* To Hippocrates of Cos, most famous of the Greek physicians, are attributed 72 texts and 42 clinical histories. His writings were assembled during the third century B.C. by Alexandrian scholars and together with other writings of his students comprised the famous *Corpus Hippocraticum*. Hippocrates put into writing many careful empirical observations on patients, including clinical portraits of patients together with the remedies used in each case. Besides herbal and surgical remedies, the healing powers of nature, including clean air, appropriate food, exercise, mild purgatives and baths, were cited as remedies to be utilized by the physician. Medicine was only the imitation of Nature; the physician being in all circumstances the servant and interpreter of Nature. A physician could use the *Corpus Hippocraticum* as a reference to finding successful remedies associated with specific symptom pictures. Reducing the empirical knowledge of the Shaman to the writings of Hippocrates had reduced the art and magic of the Shaman to the art and science of medicine. Disease pictures, portrayed by the Hippocratic writings, include mental, emotional, and physical signs and symptoms; the remedies proposed are generally physical, nutritional, and herbal. The Hippocratic physician stands for biopsychosynthesis.

3. *Hahnemann and Homeopathy.* When a patient presents to a physician a group of symptoms similar to those produced by the administration of certain medicines to a healthy human (this administration is termed proving), that medicine is homeopathically indicated, and if prescribed in correct dosage will relieve or cure. Dr. Samuel Hahnemann, a translator of medical texts, did not discover the Law of Similars referred to above, (*Similia Similibus Curentur*), but in his studies and translations noted that thinking physicians of all times were aware of this law. Dr. Hahnemann, after years of experimentation of proving drugs on himself and others, and then using these drugs on sick patients, believed he had established scientific proof that the Law of Similars was the basic law of cure in medicine.

In Homeopathy, psychological symptoms and general modalities (factors aggravating or ameliorating the total disease pattern) are given priority over physical symptoms or symptoms identified with part of the body (e.g., the lungs). The emotional configuration of the patient and his constitutional type are more important in choosing a remedy than a specific disease entity such as pneumonia. Homeopaths are psychosomatic physicians with the emphasis on *psycho*. Although the remedies are very small amounts of mineral, plant, or animal products, a mixture of organic and inorganic elements and compounds, or the effect of such products on the solute (by the process of dilution and succussion), such chemical (material) remedies are applied to the total human being defined as a spiritual-mental-emotional-physical entity.

The good homeopathic physician is therefore an exponent of biopsychosynthesis. Like the Hippocratic physician, he is the servant and interpreter of nature. Besides the scientifically chosen chemical remedy, the homeopathic physician utilizes diet, exercise and necessary surgery to assist the healing powers of nature.(5-6)

4. *Modern Medicine.* With the tremendous input of information from the basic medical sciences during the nineteenth and twentieth centuries, the education of the contemporary physician has become very complex. For example, the curriculum at Harvard Medical School (7) divides the four year course into two years of preclinical basic science courses and two years of clinical clerkship and electives. The basic science course is in turn divided into four months of cell biology and ten months of human biology. Cell biology includes basic molecular and cellular sciences including biochemistry, bacterial physiology, cellular physiology, histology, embryology, general pathology, immunology, general pharmacology and general physiology.

Human biology is a course in systems patho-physiology taught by a team of experts wherein the normal and abnormal structure and function of each organ system is reviewed. The teaching blocks include growth, circulation, respiration, nephrology, epidermal and supporting tissues, neural sciences (anatomy, physiology, pharmacology, and pathology) hematology, gastroenterology, infectious diseases, endocrinology, and reproduction.

During the past twenty years the large amount of new factual information from medicine and the biological sciences has strongly pushed physicians towards specialization. The new graduates of medical schools today look forward to careers as hematologists, gastroenterologists, obstetricians or clinical pathologists.

In some of the modern trends towards specialization, the art of medicine as practiced by the tribal Shaman, by Hippocrates, by Hahnemann or by the old family doctor is gradually dying. The patient cries out for the one doctor who knows him body, mind, and soul to replace the team of doctors each of whom knows only his heart, his stomach, his brain, etc. Among contemporary general practitioners, there is continual professional pressure for them to keep up with a dozen medical specialties stressing hard biochemical and pharmacological facts often to the neglect of the psychological dimensions of their patients.

SYSTEMS PHYSIOLOGY OF THE HUMAN BODY

Abdomen	Lower Unconscious	Excretory System	Gastrointestinal System	Spinal NS	Autonomic NS	Endocrine Glands
Food Nutrients Water	Primitive drives and instincts - food, air, thirst, self-preservation, sex. All intelligent reflex actions of body organs, cells and intra-cellular particles	Excretion, wastes, toxins, water, Kidney, Lungs, GI System, Skin, Liver. Extracellular fluid regulation.	Intake of water and nutrients. Liver, Pancreas. Excretion of wastes, toxins, water.	Sensory Motor Pain Temperature Touch Acupuncture meridians	Parasympathetic Sympathetic Adrenal medulla Acupuncture meridians	Gonads Adrenal Cortex Pancreas
Chest	Middle Unconscious	Respiratory System	Cardiovascular System	Spinal NS	Autonomic NS	Endocrine Glands
Food Oxygen	Sleep, dreams, post hypnotic suggestion, slips of the tongue, preconscious	Intake O ₂ Excretion CO ₂ H ₂ O	Maintenance of constant internal milieu, circulation of food (O ₂ , nutrients) water, and wastes to maintain metabolism of each body cell	Sensory Motor Pain Temperature Touch Acupuncture meridians	Sympathetic Acupuncture meridians	Thymus Thyroid Para-thyroid
Head	Higher Unconscious	Hearing	Vision	Central NS	Autonomic NS	Endocrine Glands
Food Impressions	Ecstasy Illumination Contemplation Higher Intuitions Methods of the mind Observation Concentration Discrimination	Sound Harmony Music Language Speech	Color Form Movement	Speech, Taste Hearing, Smell Vision, Emotion Sensory, Cognition Motor, Imagination Pain, Memory Touch, Acupuncture meridians	Para-sympathetic Acupuncture meridians	Pituitary Pineal
"I" Consciousness	Center of Will and Awareness			Self Observation Self Remembering		

Despite the often repeated statistic that at least one half of the average general practitioners' patients have important psychological and not physical problems to solve, most general practitioners are under the pressure of time and spend little time listening to the total problems of their patients. Too often they refer the problem case

to the psychiatrist, whereas just a few additional minutes of intelligent listening would have yielded the clue to cure. Most of today's general practitioners belong to the materialistic psychopharmacologic school of medicine. The patient is crying for the physician who practices biopsychosynthesis.

5. Systems of the Human Body. This chart (above) is not, by any means, meant to be logically exact; it is an analogical chart that gives a global picture of all of the systems in the human body, with an effort to look at some basic divisions. Over on the far left you will notice there are three major sections shown: Abdomen, Chest, and Head. These are the three major parts of the human body. We actually don't need the extremities; one may lose all four limbs and still survive; but one must have the abdomen and its organs for survival; one must have the chest with its heart and lungs; and one must have the head.

Listed under these headings are the basic foods that come into the organism. In the abdomen the gastrointestinal tract takes in nutrients and water. In the chest the lungs take in the food of oxygen, and in the head the food is impression—sensory, sound and visual impressions. The classic five senses are centered in the head, where the brain finally collects and organizes all sensation in the sensory cortex.

The next division, to the right on the chart, is Dr. Assagioli's divisions of the psyche. This is a very loose analogy, but certainly the abdomen is related to much of the lower unconscious with the primitive drives and instincts, all the intelligent reflex actions of the organs and cells and the intracellular molecules. One is not consciously aware of his digestion, but it goes on in a series of marvelously coordinated biochemical processes.

The chest can be thought of as symbolic of the middle unconscious. This would be the part of the unconscious that originally had been conscious and is now found in memories of the past, dreams, posthypnotic suggestions, and slips of the tongue.

The higher unconscious and consciousness itself seems to locate itself in the head. Illuminations, contemplations, the various peak experiences, intuitions, and consciousness itself can be represented as occurring in the head. Let's look at the head section. Reading along, you will see higher unconscious, hearing, vision, central nervous system, autonomic nervous system and endocrine glands.

Consciousness clearly belongs in the head. One is conscious of hearing and one is conscious of seeing; one is conscious of his memories; one is conscious of his imaginations, his bodily sensations, etc.

The body's direct coordinating and total regulatory systems are represented by the three columns on the chart farthest to the right—the central nervous system, the spinal nervous system, the autonomic nervous system and the endocrine system.

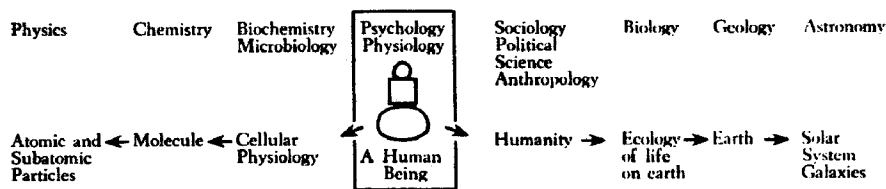
The endocrine glands are the coordinators of hundreds of complex biochemical processes involving the entire body. The autonomic nervous system (so called involuntary nervous system) is now known not to be involuntary. One can learn to control skin temperature and blood flow (regulated by the autonomic nervous system) by means of bio-feedback devices. The cerebrospinal nervous system regulates locomotion, total body sensation, body coordination and balance, and a range of simple to complex reflex actions which assure survival to the living organism.

These regulatory systems assure a coordination of the gastrointestinal system, the excretory system, the respiratory system, and the cardiovascular system. Although most of these regulatory systems can function marvelously unconsciously, outside of one's conscious awareness, the more understanding and conscious control one has of certain of these functionings, the better able is such a person to carry out a given task in life with relative freedom of the will. One can learn to apply intelligent control over foods taken into the body, one

can decide to eat a correct balance of nutrients and refuse to eat toxic food. One can decide to exercise optimally so that the body maintains a healthy cardiovascular system and preserves a healthy balance of coordinated muscular actions. If one's autonomic nervous system tends to function out of balance, causing a variety of functional diseases (migraine, hypertension, functional gastro-intestinal disease, dermatitis, etc.), one can learn to control the autonomic nervous system so as to eliminate the dysfunction.

One can learn to be more conscious of his central nervous system functions: imagination, cognition, emotion, memory, hearing and vision. Roberto Assagioli in his book, *Psychosynthesis: A Manual of Principles and Techniques*, clearly outlines methods and exercises for the specific purpose of becoming aware of and training the central nervous system functions. As one grows in capacity and wisdom as a human being, two related conditions of consciousness also seem to grow: the awareness of total human functioning on all levels and the increasing control of human functioning on all levels.

6. The Human Being in Relation to Smaller and Larger Systems.



By extending the outreach of the senses of his body by use of recently invented instruments such as the electron microscope, the telescope, the radio telescope, etc., man has made careful observations and has reasoned about these observations. This in turn has led to new areas of knowledge in the physical sciences, and the biological sciences. By virtue of the improvement in communications, radio, television, newspapers, books, magazines, and ease of travel, an interest in the social sciences has developed over the past few centuries. Comparative study of cultures, languages, ethnic patterns, religions, governments, social psychologies, etc., has yielded a large body of knowledge concerning humanity and its social vicissitudes.

The important point to recognize in the above discussion is that the basic foundation of all these rapidly expanding sciences is the individual human being. A biochemist studying cellular physiology is first and foremost a human being who functions consciously and has will and choice. He also inhabits a unique body with a complex physiology which functions for him largely unconsciously and out of his awareness. Without the individual mental abilities of observation, concentration, and discrimination our biochemist could not have trained to become a scientist. His individual choice to become a biochemist was crucial to him. Even though the electron microscope extends our biochemist's power of sight, such a microscope still depends on his basic visual sense.

7. The Gastrointestinal Tract, Nutrition and Ortho-molecular Psychiatry.

Essential nutrients enter the body mostly through the gastrointestinal tract. There are six general classes of essential nutrients: carbohydrates, fats, proteins, vitamins, minerals, and water. Over the past ten years it has been established for certain that the deficiency of one or more of these essential nutrients in the diet can give rise to a variety of diseased conditions in man characterized by important psychological as well as physical symptoms. It has also been established that a number of specific diseases in man with psychological and physical symptoms characterized by a known metabolic defect (diabetes mellitus, phenylketonuria, galactosemia, and methylmalonic aciduria) can be corrected by supplying outside insulin to the body to supplement its deficiency of insulin (diabetes mellitus), or by reducing phenylalanine in the diet (phenylketonuria), by reducing lactose in the diet (galactosemia) or by introducing into the body large amounts of vitamin B₁₂ (methylmalonic aciduria).

The preservation of good health and the treatment of disease (psychological and physical) by varying the concentration in the human body of substances normally present in the body and required for health has been termed by Linus Pauling, orthomolecular medicine. Orthomolecular medicine and its sister discipline orthomolecular psychiatry are essential components of Biopsychosynthesis. A variety of biochemical nutritional as well as hereditary aberrations of the human organism have been systematically correlated with both physical and psychological signs and symptoms.

All persons concerned about restoring their fellow human beings to full balanced health (psychologists, psychiatrists, physicians, clergymen, educators, social workers, laymen of all types) must be fully aware that biochemical and nutritional imbalances do lead to the production of serious emotional symptoms (depression, anxiety, psychosis, etc.). The treatment in these biochemically caused imbalances is the restoration of balance (orthomolecular medicine). This restoration can mean a drastic change of diet with perhaps addition of certain specific nutrients to the diet. If only psychological methods of treatment are utilized (psychotherapy, meditation, etc.) the human being out of balance cannot be effectively returned to a state of health. Kunin,¹⁰ an orthomolecular psychiatrist, estimates that one third of his total psychiatric practice consists of cases that can be cured by orthomolecular psychiatry.

Examples of psychiatric disease pictures that are improved or cured by orthomolecular principles are:

a. Depression - A 45-year old married housewife with a diagnosis of diabetes mellitus since age 18, was suffering symptoms of severe depression, migratory arthritis, suicidal ideation, marital maladjustment, frequent insulin reactions, intermittent paresthesias of hands and feet, and chronic fears about diabetes damaging her body. Several attempts at group therapy and several visits to a psychiatrist were not helpful. The condition was chronic, lasting over 20 years. With the daily addition of the following nutrients to her diabetic diet all the symptoms have completely disappeared, and have stayed absent for three years, including the depression, paresthesias, migratory arthritis, and the insulin reactions: Vitamin A 7,500 USP units; Vitamin D 750 IUSP units; ascorbic acid 3,000 mg; Vitamin B₁ 85 mg; Vitamin B₂ 100 mg; Vitamin B₆ 15 mg; pantothenic acid 80 mg; Niacin 130 mg; Vitamin E 1200 international units; magnesium 600 mg; calcium 1 gram; cobalamin 85 mc g. These nutrients were purchased in the form of brewer's yeast, desiccated liver, wheat germ, dolomite, and rose hips extract.

This patient is convinced that nutritional supplements have helped her. She has been instrumental in encouraging a number of other persons to supplement their diets in a similar manner in order to improve their health.

b. Phobic neurosis with seizures

1. A 46-year old married housewife with three children had suffered for twenty years from intermittent bouts of alcoholism, drug dependency (Librium, Placidyl, Doriden), phobias and anxieties, depression, intermittent bouts of profound weakness, and bouts of diarrhea. Two days after recovering from a brief alcoholic episode, she had a grand ma! seizure. She had not eaten for 17 hours but had been showing no signs of tremor or incipient delirium tremens. A 6 hour glucose tolerance curve gave hourly values of 110 mg% (fasting) 240 mg%, 90 mg%, 65 mg%, 90 mg%, 85 mg%, 90 mg%. (1st through 6th hours respectively).

This curve is abnormal and indicative of the condition of reactive hypoglycemia. The drop of 20 mg% below the fasting blood sugar level is indicative of hypoglycemia, as is the high peak during the first hour (240 mg% accompanied by glycosuria and nausea). The precipitous drop of blood sugar between the 1st and 2nd hour blood samples (130 mg%) is also typical of hypoglycemia.

The patient was started on a hypoglycemic diet (low carbohydrate, high protein diet with in-between-meal feedings of protein). She also added supplements to her diet of brewers' yeast, wheat germ, dolomite and rose hips in quantities similar to the first case. For two months now there has been no excess use of drugs and alcohol. There have been no seizures, depression, weakness, or diarrhea.

Reactive hypoglycemia is known to produce symptoms of anxiety, depression, 'blackout' spells, fatigue, headaches, dizziness, nausea, insomnia, irritability, lack of concentration, crying spells, phobias, forgetfulness, confusion, asocial and antisocial behavior, suicidal tendencies, trembling, numbness, blurred vision, muscular twitching, bloating, abdominal spasms, muscle and joint pains, backaches, muscle cramps, and colitis. Reactive hypoglycemia can mimic practically any neuro-psychiatric disorder and can complicate many other functional and pathological disease pictures.

Probably all cases with a neuro-psychiatric diagnosis should have a routine 6 hour glucose tolerance test to rule in or out reactive hypoglycemia. There have been many long term psychoanalytic cases or behavior therapy cases which have responded dramatically with relief of all symptoms by the simple use of a hypoglycemic diet. Any persons with alcohol abuse patterns should have a 6 hour glucose tolerance test, as experience has shown that over half of these patients have abnormal glucose tolerance curves.

c. Schizophrenia. Schizophrenia as originally described by Bleuler remains the most serious psychiatric disease to be coped with by physicians. Schizophrenia with deterioration of ability to adjust in society accounts for more totally disabled chronic patients than any other psychiatric syndrome. While electric shock therapy, insulin coma therapy, the phenothiazines, and appropriate hospitalization have helped remarkably with the acute symptoms of schizophrenic patients during the past thirty years, the overall course and outcome of the disease has not been modified.

An interesting "orthomolecular approach" to schizophrenia was initiated in 1952 by Dr. A. Hoffer and Dr. H. Osmond at the Saskatchewan Hospital, Weyburn, Saskatchewan. They noted a marked similarity between the mental and emotional symptoms of pellagra and schizophrenia. The pellagrins showed visual symptoms (illusions, visual hallucinations), auditory hallucinations, reduction of taste, changes in thought (blocking, paranoid ideation, delusions and ideas of persecution, confusion, and bizarre ideas), and changes in mood (anxiety, depression, emotional instability, euphoria, mania, etc.). A large proportion of pellagrins were later clinically diagnosed as having schizophrenia of schizo-affective or chronic-undifferentiated (demented) type.

The treatment of pellagra consists in giving the patient nicotinic acid or nicotinamide plus improving the patient's diet. Improvement was rapid and dramatic in acute pellagra. Chronic pellagra needed larger doses of the vitamin over longer periods of time.

Because of the similarity in symptomatology between pellagra and schizophrenia, Osmond and Hoffer hypothesized that niacin (nicotinic acid) or niacinamide being very helpful in pellagra, would also be helpful in schizophrenia. This was the start of 20 years of research into orthomolecular psychiatry which has yielded almost a hundred research publications by Osmond and Hoffer and probably an equal number of publications by researchers working in collaboration with them. This work was instrumental in the founding of the American Schizophrenia Foundation and the lay group of schizophrenics called Schizophrenics Anonymous.

Today the megavitamin treatment of schizophrenia includes, besides the traditional insulin treatment, electric shock treatment and phenothiazine treatment, large doses of either niacin or niacinamide (3-40 grams/day), ascorbic acid (3-30 grams/day), thiamine hydrochloride (100-3000 mg/day), pyridoxine (100-1000 mg/day) and Vitamin B₁₂, 1 mg/week for ten weeks are given. According to Osmond and Hoffer this program has resulted in

a marked increase in the number of recoveries from schizophrenia and a marked decrease in the number of relapses." (11, 12)

For the past fifteen years papers have been published in many countries showing that schizophrenic patients have high demands for ascorbic acid, and are in many cases in a state of subclinical scurvy. Vander Kamp (13) found that schizophrenic patients metabolize ascorbic acid at a rate ten times that of a control group. Because of these findings, Osmond and Hoffer have added ascorbic acid to their original niacin treatment. For other reasons, thiamine hydrochloride, pyridoxine and cobalamin (Vitamin B₁₂) have occasionally been added to the basic Vitamin B₃ (nicotinic acid) treatment regime.

In a 1967 report 80% of 1500 schizophrenics treated with Vitamin B₃ showed recovery or marked improvement in twelve independent psychiatric studies. It was estimated 1500 doctors in U.S.A. and Canada were using this treatment. (14)

In summary Hoffer and Osmond have held to their original hypothesis that schizophrenia, like pellagra, is a nicotinamide adenine dinucleotide (NAD) deficiency state, which can be successfully treated by massive doses of nicotinic acid, nicotinamide or NAD. (16,17,18)

Inconsistent, however, with this hypothesis is a controlled clinical study by Kline¹⁹ where NAD administration to chronic schizophrenic patients failed to demonstrate unequivocal beneficial effects.

Despite the lack of confirmation by Kline, the principle of the orthomolecular approach to the understanding of schizophrenia still seems to represent a most promising research direction where treatment of schizophrenia can be understood in terms of well established biochemical science. Previously most psychiatric treatments have been accidentally discovered, their physiological and biochemical mechanisms of action unknown and unrelated to established biochemical science.

d. *Alcoholism.* Chronic and acute alcoholism is very often complicated by problems of malnutrition, avitaminosis, and electrolyte imbalance. If the chronic alcoholic maintains an adequate diet in addition to his alcohol intake, most of the crippling complications of alcoholism (cirrhosis of the liver, delirium tremens, peripheral neuritis, Korsakoff's psychosis, and Wernicke's Syndrome) can be avoided. However, most chronic drinkers do not maintain an adequate diet. Deficiencies in protein, magnesium, potassium, and the Vitamin B complex are usual in most alcoholics drinking heavily for longer than one week.

Glucose tolerance curves done routinely on alcoholics indicate that well over one half suffer from abnormal glucose metabolism with consequent subjective symptoms of depression, anxiety, intermittent craving for food or drink, phobias, and confusion, etc. Many of these alcoholics eat sweets or take alcoholic drinks to relieve their hypoglycemic symptoms rather than follow a strict hypoglycemic diet. Bill W. of Alcoholics Anonymous fame was convinced that one third of A.A. alcoholics responded very dramatically to megavitamin B₃ therapy. He believed that another one third responded less dramatically and the last third did not respond to Vitamin B₃.

It is apparent that social and psychological therapy of chronic alcoholics must always be accompanied by good orthomolecular medicine (sound nutrition) for optimal results. The acute magnesium deficiency in cases of delirium tremens with acute fear, agitation, tremors, ataxia, muscular twitching, athetoid movements, confusion, hallucinations, and violent behavior may prove fatal unless immediately corrected. In these cases biochemical treatment is imperative.

e. *Mental Retardation.* It has been found that many inherited errors of metabolism lead to mental retardation. These include phenylketonuria, galactosemia, congenital hypothyroidism, Wilson's Disease, and Tay-Sach's Disease. There are now more than one hundred diseases ascribed to a deficiency or absence of an enzyme which causes an abnormal accumulation of intermediate products of metabolism. Many of these other diseases (besides the ones listed above) may cause minor aberrations of mental functioning.

The most direct orthomolecular manner of correcting such abnormal gene patterns would be to transplant normal genes from normal human beings into the chromosomes of the person with the genetic defect. Another orthomolecular manner of treating such a congenital disease characterized by an enzyme deficiency would be the injection of the active enzyme—resembling the use of insulin in diabetes. In phenyl-ketonuria, if we exclude phenylalanine from the diet, mental retardation does not develop. In galactosemia if we exclude lactose from the diet, the full blown disease does not manifest. If we supply the congenital hypothyroid infant with animal thyroxin, his brain develops normally without mental retardation. In Wilson's Disease, if the excess copper can be removed from the body by BAL or Versene, degenerative changes of the brain causing mental retardation can be averted.

All biological and nutritional factors must be carefully considered in all cases of mental retardation or potential mental retardation. Merely social or psychological treatment of mental retardation alone is insufficient.

f. *Stress.* Dr. Hans Selye of the University of Montreal made a large contribution to medicine through his researches on the body's reaction to stress. Such stress can be understood in human beings as caused by intensive psychological, toxic, or physical stresses beyond the normal course of a human being's daily activities. Severe physical illness is such an intense stress. With intense stress the body goes through an alarm reaction, a stage of resistance, and a stage of exhaustion at which point death results. Dr. Selye and other researchers of stress conclusively showed that nutritional needs are increased with stress. Nutrients needed for the production of pituitary and adrenal hormones are particularly needed. These are protein, Vitamin C, Vitamins B₂ and B₆ and pantothenic acid.

In conditions of acute stress various nutritionists have recommended all or some of the following supplements to the usual normal diet: extra amounts of eggs, milk products, soy flour, wheat germ, liver, green leafy vegetables, vitamins A, B₁, B₂, B₃, B₆, B₁₂, pantothenic acid, C, and E, calcium and magnesium.

It is to be remembered that many acute psychiatric syndromes such as acute anxiety reactions, acute schizophrenic reactions, adult and childhood situational reactions are syndromes associated with a great deal of bodily stress which require appropriate nutritional supplements as well as tranquilizing drugs and psychological support during the acute phases of the illness.

George Watson (20) an investigator into the biochemical factors in the mentally ill has hypothesized that mentally ill subjects particularly when under stress can be classified into two basic types:

- a. Type I "slow oxidizers" who oxidize carbohydrate and glucogenic aminoacids more slowly than Type II subjects resulting in a preferential utilization of fats and ketogenic aminoacids.
- b. Type II "fast oxidizers" who oxidize carbohydrate and glucogenic aminoacids more rapidly than Type I.

Watson found that Type I subjects benefit greatly by the addition of the following vitamins and minerals to the diet:

vitamins B₁, B₂, B₆, C, D, para-aminobenzoic acid, niacin, potassium citrate, magnesium chloride, copper gluconate, manganese oxide and ferrous sulfate.

Type II subjects benefited by the addition of:

vitamins A, E, B₁₂, C, niacinamide, calcium pantothenate, bioflavonoids, choline, inositol, calcium, phosphorus, iodine, and zinc sulfate.

Summary-Definition of Biopsychosynthesis

I hope that what I have said will reveal the fundamental necessity of paying careful regard to the body, its care and nutrition as a preliminary to and a concomitant of psychotherapy. Don't let us forget the "Bio" in Biopsychosynthesis, that man is a physical, psychological, and spiritual being.

What does all the above rather involved analysis mean to the average man leading his daily life with all its problems and vicissitudes? The average man hopes to experience during his brief lifetime a happy life, a feeling of contentment that he has lived well as a human being. The average man does not experience himself split into a body and a mind as described by Descartes, or as a group of the four elements of the ancients, or as the seven bodies of the esotericists. He wishes to experience himself now, today, as a full functioning human being to the limits of his capacity. He asks himself the question "How can I live more happily?"

This latter question is usually not asked by a human being unless he has experienced some dis-ease or disharmony in his day-to-day living. Painful unpleasant experiences such as severe body illness; extreme emotional attitudes or expressions of fear, anger, anxiety; strong insatiable desires that can only lead to unfulfillment; and confusion and disorganization of thought, can finally bring one to recognize within himself "there must be a better way!" The moment of this flash of awareness and insight is a crucial moment of the greatest value for the improvement of our average man's life. At this critical moment of self observation, such an individual experiences an instant of disidentification from the thousands of things that happen around him and happen to him. With this disidentification from happenings, there is an accompanying instant of self-remembering or identification with the inner central self.

With this self-remembering there comes the stark recognition that one is ignorant of "the better way." With this recognition one is willing to drop one's defensive pride, and to ask another human being for help. There is therefore a willingness to discontinue one's present way of living, and accept a way of life from those individuals who "know better how to live." The center of self-remembering or inner self here leads one to a physician, a teacher, a healer, or psychologist who attempts to offer and teach a new way of life sometimes termed psychological work, the spiritual path, new life in Christ, etc. Despite the ethereal connotations of the new way, it is important to *stress the substantial components* of living of the pledged student or convert. He still must continue to eat, sleep, exercise, study, meditate, observe himself, discriminate, and act. The pledged student *makes observations* and attempts to understand the workings of his body, his emotions, his mind and thought in all their substantial variations.

A hindrance to many persons seeking help is the variety of psychological groups and religious organizations who promise to help the seeker. These groups each stress a particular helping doctrine that is to be applied universally to everyone with no regard for individual needs. Many of these dogmatic claims are based on the imaginations, visions, and phenomenal experiences of the promulgator of the "cure," and as such are valueless to the student who is seeking his own experience. The great demand for good psychological counseling that has arisen in the twentieth century has come from the gradual recognition of the harmfulness of dogmatic group

teaching and the important internal need of each human being to "be true to himself" and to set out on a path of personal individuation.

Let us assume our average man finds his way to a well trained teacher of biopsychosynthesis. How would the teaching and healing process proceed? The model of the relationship would evolve very much like the models of Freud, Jung, and Assagioli as they see the analyst-patient relationship. The biopsychosynthesist would ally himself with the observing ego or the inner self of his client. This alliance would then work towards an activation and fuller utilization of what is immediately pertinent for healing.

The understanding and discrimination would lead gradually to the training and unfoldment of the will of the analysant; the will in its various stages as discussed by Assagioli (purpose, valuation, motivation, deliberation, decision, affirmation, planning, and execution). Using his unfolding will, the analysant gradually decides *what foods he will take in and what social actions* he will take in human society. He will feed and exercise his body, his emotions and desires, and his mind in a unique personal manner perhaps only appropriate to himself. In the feeding of the body, he will study the new nutritional knowledge and make efforts to see that he eats the *right foods* and takes the *right supplements* to guarantee that he receives a full complement of the 45 known essential nutrients.

He will be wary of dogmatic claim makers and spiritual fanatics who make extreme promises based on extremes of diet (i.e., fasting, vegetarian diets, water diets, etc.) He will study foods to discover which of them have a detrimental (allergic or disease producing) effect on his body and then delete these foods from his diet. He will avoid taking disease producing foodstuffs or chemicals into his body (i.e., tobacco, alcohol, unnecessary drugs, coal dust, pollution fumes, impure water or food, poisons of all kinds, and harmful microorganisms—bacteria, etc.).

He will feed the body via the lungs and skin with pure air and sunshine—at least some of the time. This involves communication with nature, outdoor walks, moderate breathing exercises, avoidance of smoke filled rooms with stale air with its positive ions, eating simple organic foods devoid of harmful nutrient destroying preservatives.

Mental and emotional food will consist of careful choices concerning individual human beings with whom to associate; literature, music, poetry and art on which to contemplate; and groups of people with which to associate. Above all, food for the mind consists in developing mental habits of meditation, concentration, discrimination, and observation. These carefully planned mental exercises are food par excellence for mental functioning.

Physical exercise for the heart, lungs, and body musculature can be planned to suit the individual physical equipment. For one person slow daily walking suffices; for the next person strenuous dancing, swimming, jogging, and gymnastics may be the correct exercise pattern to follow.

After a while he may find other human beings feeding and exercising themselves in a similar manner. He then sees that combined feeding and combined exercise may prove more fruitful for himself and humanity. He soon finds himself in a new type of group, where he is individually fulfilled as he sees his role as a function of a larger whole. In his new group identification, our average man experiences the validity of the great humanitarian virtues, love, cooperation, unselfishness and outgrows the widespread neurosis of personal, racial, and national competitiveness which have caused so much suffering on our planet.

Biopsychosynthesis is therefore the process of self realization whereby the average man halts in an instant of insight, asks for help, and by virtue of actualization of more full awareness and will decides to feed and exercise

himself in a unique personal manner. The process of biopsychosynthesis continues as our now unique individuated man gradually experiences larger identifications with groups of persons who have experienced life in a similar fashion as himself. Our man's gradual identification with larger and larger groups and systems allows for an infinity of growth and evolution. Biopsychosynthesis is always open ended and seeking to experience the next step involving a larger more encompassing identification.

In the words of Oliver Wendell Holmes' poem, "The Chambered Nautilus":

"Build thee more stately mansions, O my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last
Shut thee from Heaven with a dome more vast,
Till thou at length art free,
Leaving thy outgrown shell by life's unresting sea!"

DISCUSSION

Question: From what I have read it seems you could have a deficiency in calcium and yet the body just refuses to absorb it when you feed it calcium. On the question of Vitamin C, I have read that in spite of the research, there's no connection between Vitamin C and the common cold, so whom do you believe? I had a cold and took 2000 mg of Vitamin C and got the most violent stomach condition.

PARKS: That's it; maybe it wouldn't agree with you; and that's one of the points in biopsychosynthesis; what you might need is not Vitamin C, but something else. The problem with global remedies is that you grab one thing and hope that's it, but it might not be, because there are 45 nutrients; it might be any one of them, or something else.

The minimum daily requirement for adults as set by the F.D.A. is 30 mg a day. The United States Food and Nutrition Board says the recommended daily allowance is 70 mg. It may be that low for some people; for others the need is for a larger dose, but you may not be one of them.

Dr. C: You may need a large dose of Vitamin A for a cold rather than C. To many patients we give up to 100,000 units per day for cold prevention. So there are many other sorts of things that can be done, but it isn't necessary to go down and buy one or other of those highly advertised "brand" so-called remedies. You should certainly try the nutrients and find out.

Question: When you were naming all those characteristics of deficiency you were describing a person that I know; but taking calcium just doesn't do a thing for her. Will you comment?

PARKS: You have to make sure that the calcium is absorbed. There has to be an acid reaction in the upper GI tract in order to absorb the calcium. You may be putting it in there but it may not be getting absorbed. There are two things to think about; you've got to put it in and then you've got to absorb it.

Dr. C: Milk is highly alkaline. If you're already low in acid in the stomach and you try to get calcium and phosphates from milk it won't work because it's alkaline. You have to introduce some acid material, such as hydrochloric acid.

Question: Do all doctors know this?

PARKS: They're beginning to know, and a lot of them do know. When I was at a recent medical meeting on the West Coast I found many doctors who are interested in nutrition. Linus Pauling from Stanford University is encouraging all sorts of projects having to do with nutrition and orthomolecular medicine. Serum ascorbic acid determinations are now widely used by many physicians. A hair test is now available for proportions of trace metals in the body.

Question: Is there any difference for nutrition between the natural and synthetic Vitamin C? Are there other compounds in naturally occurring Vitamin C?

PARKS: There is a difference. Natural Vitamin C as found in rose hips has other things in it. It contains a Vitamin P factor, a bioflavonoid factor and rutin. There is also a protein factor present in very small amounts which has not been identified.

Question: How closely would you suggest following nutrition? For example, Adelle Davis has every meal figured out with 20 vitamins for this and so much for that. I think I'd go crazy if I did that! I heard of someone who carries a shoe box around with his vitamins in it, and has twenty vitamins to take for every meal that he eats! (*PARKS:* What is the proof of the pudding?) He's in poor shape.

Dr. C: Possibly he's not taking the macronutrients. I see a lot of people who are in this shape. He is taking all the micronutrients, but not enough of the macro. The lack that I find with many people like that is a fat deficiency. This person you mentioned appears to be deficient in fat in his diet.

PARKS: If you don't know, please go to someone who is in good health who does know something about it, who will teach you what you need to do. There are people in the hospitals whom I see who are taking all the supplements, but they're not taking the nutrients.

Question: Is Vitamin C sometimes used for those not naturally resistant to bacteria?

PARKS: Viruses? Yes, indeed, all kinds of infection. Ascorbic acid is essential to corticosteroid metabolism. Infection sets up the alarm reaction; there is stress on the whole system—the autonomic system and the endocrine system are activated, and particularly the adrenal gland and its corticosteroids. Ascorbic acid deficiency, relative or absolute, diminishes this corticosteroid response which lowers the body's resistance to infectious processes.

Question: I wonder, in regard to this whole thing about the food intake, if there is also a mind set to be considered that suggests the food one takes in. I know a person who tries to make sure that half an hour before he eats he is pretty calm. He also talked about one actually picturing the food and the vitamins going to the particular parts of the body as each meal is eaten, so that there is also an experiential sense. I know I may have a great meal but it doesn't seem as if the whole experiential sense of nutrition is taking place.

PARKS: That is an excellent exercise in imagination, which concerns itself with the atmosphere of eating. Eating in a relaxed atmosphere and slowly masticating the food assists the autonomic nervous system to ensure optimum gastrointestinal functioning. Correct mastication of food stimulates the flow of saliva—and ultimately all the other gastrointestinal digestive enzymes.

Dr. C: I'd like to add to that: most of the vegetable food that we eat has cellulose material and there's not any way you can get to the nutrients in it except through chewing, and it must be chewed carefully.

Question: You spoke about the psychological effects of a particular deficiency; in contrast, by cultivating certain types of thoughts and emotions what effect would this have on the chemical physiological levels?

PARKS: Certainly, work has been done on this in psychosomatic medical research. They have tried to identify certain types of emotions with certain types of functional illnesses and certain types of organ pathology. The School of Autogenic Training as developed by Johannes Schultz, M.D., (22) proposed that patients learn to develop passive concentration, by focussing on a variety of relaxing thoughts such as "my arms and legs are heavy and warm," "I am at peace," "Heartbeat is calm and regular," "It breathes me." Autogenic training has been found clinically to have a beneficial effect on disorders of the respiratory tract, the gastrointestinal tract, the cardiovascular system, the endocrine system, and the nervous system. Characteristic changes in body physiology occur in autogenic training, including changes in neuro-muscular activity, skin and body temperature, heart rate, blood pressure, respiration, and the electroencephalogram.

Most of the research has been in systems physiology not biochemistry. The therapeutic key factor seems to lie in control of the autonomic nervous system through passive concentration which produces a normalization and balancing of function of the autonomic nervous system, which allows the natural forces in the body (biochemical processes) to regain their heretofore restricted capacity for self-regulatory normalization. Dr. Elmer Green at the Menninger Foundation is basing his work with Bio-feedback devices on Dr. Schultz's work. (23) Recent research papers on the physiologic effects of Transcendental Meditation parallel Schultz's work.

Question: What's the difference between animal fat and vegetable fat? Do you see the human body as needing animal fat?

PARKS: The animal fat has more saturated fats. The body needs fat, but the essential fatty acid is the linoleic acid, an unsaturated fat.

Question: Can it be obtained from vegetables?

PARKS: It's probably less harmful for women to take excess animal fat than men; the men have a greater tendency towards arteriosclerotic problems. In animal fat, say butter and meat, you get a combination of both saturated and unsaturated fats. In vegetable fat, the fats are mostly unsaturated. You need about two tablespoonfuls of corn oil, soy bean oil, safflower oil or sunflower oil each day. You do not need saturated fats and should attempt to keep them as low as possible in the diet.

Dr. C: Hydrogenated fats act the same way as the animal fats do. People think they are doing well with margarine but they are compounding the error, because margarine has very little polyunsaturated fat. It's hydrolized and hardened. (*Question:* Is that true of all margarine?) Yes, it is.

Question: If I were a patient and I came to you and you were a psychosynthesis therapist, how would you go about assessing my needs?

PARKS: I would sit down and talk to you. I'd say, "What's your problem?" and I'd start you talking, and I'd just listen. I'd try to have you tell me in your own words.

I'd draw your problems out without superimposing myself. You may only tell me a certain aspect. Suppose you are a psychologist and you come in and only tell me about emotional things; I then let you tell it—you are angry at your mother and you have a severe problem with your girl friend. You tell it to me and I'll be interested. I will notice what the patient does not mention. When the patient has told his story, I ask questions as to sleep, exercise and diet, which are crucial key physical questions. I always ask about these matters.

In taking the history I try to assess the degree of vitality and resistance to illness of the patient. To do this I always inquire about past illnesses, response to infection, past hospitalizations, frequency of visiting doctors, etc. The history is 90% of the diagnosis. I supplement the careful history by a physical examination, and the following laboratory procedures: complete blood count, urinalysis, SMA 12, computerized nutritional analysis (available from Dietronics Data Processing, Box 35, Northridge, CA 91324), 6 hour glucose tolerance test, spectrophotographic hair analysis for metals (available from Bio-Medical Data, Inc., P.O. Box 397, West Chicago, Ill. 60185).

Good doctors can tell most from the history. For example, the homeopaths are very excellent diagnosticians, taking a careful detailed history, and not relying on a myriad of laboratory procedures.

Question: In a deep psychoanalytic case history things often come out. I know the case of a girl who had a problem with chewing; She just couldn't tolerate even the idea of chewing, and insisted she could only swallow things whole; she was horrified of chewing because her father was a terrible chewer, he would chew up everything; and he was a terrible father. This girl could not be induced to chew at all. If you were able to overcome it, would it be a temporary cure, or would it not be that you would rather eliminate the underlying condition? What do you do about the psychological rejection of certain functions?

PARKS: This can happen. However, there are some pretty good observations on phobic cases where symptomological treatment alone has been curative. As far as the underlying things, the meaning of these words needs to be spelled out. Normal functioning etc...

Normal functioning can be retaught, relearned, despite a conditioned abnormal functioning. The so-called underlying conditioning is merely a pattern of behavior which continues in the present. One can recondition the organism by mobilizing the will and consciously making an effort "to chew". One could facilitate the reconditioning by Joseph Wolpe's Reciprocal Inhibition Treatment by having the person concentrate on a pleasant image while chewing or using behavioral rehearsal in fantasy by the patient first visualizing himself pleasantly chewing his food in very happy eating circumstances with pleasant dining room companions. After a number of successful visualizations, actual chewing will become easy.

BIBLIOGRAPHY

1. Assagioli, Roberto: *Psychosomatic Medicine and Biopsychosynthesis*, Issue #21, 1967. Psychosynthesis Research Foundation, 40 East 49th St., New York, N.Y. 10017
2. Kiev, Ari: *Magic, Faith, and Healing*. The Free Press of Glencoe, London 1964
3. Castiglioni, Arturo: *Adventures of the Mind*, Alfred A. Knopf, N.Y. 1946
4. Adams, Francis: *The Genuine Works of Hippocrates*, N.Y.: William Wood & Co., 1929
5. Hahnemann, Samuel: *Organon of Medicine* — 6th Edition, Calcutta: Roy Pub. House, 1962
6. Kent, James Tyler: *Lectures on Homeopathic Philosophy*, Calcutta: Roy Pub. House, 1968
7. Leaf, Alexander: "The Harvard Medical Curriculum", *Harvard Medical Alumni Bulletin*, May-June 1970
8. Assagioli, Roberto: *Psychosynthesis: A Manual of Principles and Techniques*, N.Y.: Hobbs, Dorman & Co., 1965; N.Y.: Viking Press, Inc. 1971 (paperback edition)
9. Pauling, L.: "Orthomolecular Psychiatry" *Science* 1968, Vol. 160, pp. 265-271
10. Kunin, Richard A.: personal correspondence
11. Hoffer, A.: *Manual for Treating Schizophrenia and other Conditions Using Megavitamin Therapy*, published 1966. Available from: American Schizophrenia Foundation
12. Hawkins, D. & Pauling, L.: *Orthomolecular Psychiatry-Treatment of Schizophrenia*, San Francisco: W. H. Freeman & Co., 1973

13. Vander Kamp, H.: "A Biochemical Abnormality in Schizophrenia involving Ascorbic Acid," *Inter. Journal of Neuropsychiatry*, 1966, Vol. Z: pp. 204-206
14. Newsletter, American Schizophrenia Foundation, October 1967
15. Hoffer, A.: "The effect of nicotinic acid on the frequency and duration of rehospitalization of schizophrenic patients; a controlled comparison study." *Int. Journal Neuropsychiatry* 2:234-240, 1966
16. Hoffer, A. & Osmond, H.: "Nicotinic adenine dinucleotide (NAD) as a treatment for schizophrenia." *Journal Psychopharmacology* 1:79-95, 1966
17. Hoffer, A.: "Biochemistry of Nicotinic acid and Nicotinamide", *Psychosomatics* 8:95-100 1967
18. Hoffer, A. & Osmond, H.: "Treatment of Schizophrenia with Nicotinic acid," *Acta. psychiat. Scand* 40:171-190, 1964
19. Kline, N. S. et al: "Diphosphopyridine nucleotide in the treatment of schizophrenia", *Journal American Medical Association* 220:881-882, 1967
20. Watson, George: *Nutrition and Your Mind*, N.Y.: Harper & Row, 1972
21. Stone, Irwin: *The Healing Factor*, N.Y.: Grosset & Dunlap, 1972
22. Schultz, J. H., Luthe, W.: *Autogenic Training*, N.Y.: Crune & Stratton, 1959
23. Green, Elmer & Green, Alyce: "Self regulation of Internal states," *Proceedings of International Congress of Cybernetics*, London 1969, p. 1299