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# The Links of psychosomatic medicine

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# INTRODUCTION

Struggling since the days of its beginning, medical science is still trying to find an approach which will offer unity of method and coherence to our clinical studies. Instead of unity we are to a large measure divided into two schools of thought with only a portion of our medical scientists able to combine the thinking of both. On the one hand are partisans of extreme psychological orientation and those who are sometimes even closely aligned with philosophical and metaphysical premises originating with the earliest psychiatric views of many centuries ago. On the other hand are the partisans of extreme organic orientation and whose who follow the speculation that all illness is the result of organic physiologic disturbance, as originated in the age of Imhotep or Hippocrates. Philosophers have claimed solutions to organic illnesses and those educated only in organic anatomy and physiology have laid claim to the solution for psychic ills.

"Psychosomatic medicine" is a relatively new term which has resulted from a recognition that both groups of extremists may be seeing some truths, that psychic and somatic illnesses may occur simultaneously or reciprocally, and that there is a connection between them.

What are the links between psychic and somatic disturbances? It is the purpose of this thesis to outline these and show how they work. Some ideas may be well established or proven - some may be

fairly reasonable but not proven - some may be entirely theoretical and without concrete basis - and some may have been disproven and found ready for the trash barrel or, in spite of unsound scientific basis, to be carefully recorded on pages of medical history as interesting landmarks.

This thesis is the result of a review of the literature and some personal participation in studies on personality types as an etiological factor in some somatic illnesses. Personality types found in two "opposite" types of psychosomatic illnesses will be described and the various types of possible links between the mind and the organic bodily pathology discussed with the hope of delineating fact and theory - the known and the unknown - and finding some horizons of research.

## HISTORY OF STUDIES RELATED TO PERSONALITY AND PHYSIOLOGIC DISTURBANCES

Aristotle, in "De Anima", stated: "Probably all the affectations of the soul are associated with the body - anger, gentleness, fear, pity, courage and joy as well as loving and hating for when they appear the body is also affected."

Prior to the late 16th century, when the individual concept of personality was discovered, emotions had been considered passions with the connotation of philosophical and ethical condemnation. The term, emotion, was first proposed by Descartes (1596-1690) but required 150 years before becoming acceptable in scientific psychological literature. Heinroth (1773-1843) and a number of mid 18th century psychiatrists still sought the cause of mental disease in badness and sinfulness of man.

George Ernst Stahl (1660-1734) may rightly be called the originator of many a modern psychobiological idea in medicine. He left no scientific issues but only a line of followers from Langermann (1768-1832) to Idelea (1795-1860) whose influence wouldn't show until the 20th century.

World turmoil during the days of the French Revolution and Napoleonic era resulted in Germany becoming the center in which new psychiatric ideas were formulated and also the first battle ground for the somatologist and psychologist.

For the medico-psychological stand patters, we had Johannes

Baptista Friedreich (1796-1862) and Griesinger in 1845 who asserted that "mental disease is a brain disease" and that "every mentally ill person is also physically ill". The term "nervous disease" was first used by Relgen (1787-1867).

Carrying the banner of the psychologist we find Ernst von Feuchtersleben (1806-1849) who was a publisher of a book resembling today's Mental Hygiene, and who first spoke of the psychophysical totality of man and that psychological factors are more of value than pharmacological. Nasse and Jacobi, in 1818, introduced the concept that any physical disease produces a disturbance in the relationship between the psyche and soma.

It is interesting to note that the conceptions of Nasse and Jacobi were born at a time when medicine, under the influence of the rapidly developing sciences of chemistry, anatomy and physiology, had fallen into the extremes of organic orientation and the development of medical psychology was being paralyzed by attempted introduction of mystical philosophy by psychology steeped in metaphysics.

Over-popularization of certain psychological discoveries, in particular those of sexuality by Freud made at the turn of the 19th century, has created a reaction against psychology and psychiatry while there was a tendency for medicine to become extremely somatic in orientation.

A new era was begun in 1935 with the publication of Dunbar's "Emotions and Bodily Changes" in which the world's available

literature reporting on relationship between somatic functions and feelings was collected, abstracted and synthesized, marking a new attempt to produce synthesis of the total reactions of the human personalities.

Her work and that of others - Alexander, Jeliff, Whitehorn, Selge, Wolff, Sullivan, Benedik, French, Canon, and others - have focused attention on the need for evaluation of the emotional aspect of disease.

Gregory Zilboorg (1) Grinker (2).

## RELATIONSHIP BETWEEN PERSONALITY, BODY PHYSIOLOGY AND ORGANIC PATHOLOGY

### PERSONALITY

Realizing that personality is a manifestation of the emotional component of disease, how does it result and how does it affect body homeostasis? Is it a manifestation of emotional development blocked at a certain stage with the resulting inability to effectively cope with an unbearable stress situation and concomitant upset of homeostatic balance, or the results of regression from a higher level of emotional development, in response to an unbearable stress situation to a lower level enabling the human organism to meet the situation without mental disorganization?

The authors listed below lend support to the theory of halted or blocked emotional development.

Perverted or frustrated primary instinctual biological drives, those of self-preservation (survival), self-perpetuation (procreation), and self-extension (domination), give rise to psychosomatic disorders. Sullivan, A. J., et.al. (3).

Alexander assumed a circular psychosomatic relationship when he stated that psychological processes are physiological phenomena that are communicated verbally and that all bodily functions are affected by psychological states. This may be expressed as follows: (1) All human functions are psychosomatic. (2) Emotions are always associated with a concomitant action pattern expressed through a portion of the autonomic nervous system and for specific emotions

there are specific vegetative patterns. (3) Repressed emotions lead to chronic tensions and prolonged innervation of autonomic nervous system resulting in excessive organ stimulation and disturbances in function which may eventually result in morphological changes in tissue. In 1950, Alexander bought out his current circular, "Schematization of the Human Personality," which he graphically portrayed as a circle beginning with the universal dependency need which, when interfered with, leads to narcissistic protest and over compensation, resulting in competitive aggressiveness which leads to anxiety or guilt with regression to dependency. Dependency needs, corresponding to anabolic processes, when blocked, are expressed through the parasympathetic nervous system, with resulting disfunction and development of ulcer, constipation, diarrhea, colitis, or asthma. If effort and aggressiveness are blocked the resulting excessive stimulation through the sympathetic nervous system, with concomitant disfunction, may contribute to the production of arthritis, hypertension, migraine, hyperthyroidism, diabetes, etc.

Alexander earlier postulated conflict situations which led to "emotional syllogism"--gastric dyspepsia and peptic ulcer related to conflict over the wish to receive or take, diarrhea over the wish to give or eliminate, and constipation over the wish to retain. (2)

Jurgen Reneshin (1948) bases his model of human nature on the theory of communication which considers that events linking parts, whole individuals, groups and society are explicable by one conceptual

model which describes the individual with psychosomatic disturbances as suffering a failure in communications based upon early defects in interactions with his first human environment. Psychosomatic processes occur in immature individuals who had to remain socially isolated because they didn't master the prevailing system of communication of adulthood. (2)

Some authors hold with the regressive theory.

L. J. Saul (1939) compared the nervous system to a hydrostatic system concluding that when the emotional level of energy is blocked by voluntary inhibition an overflow occurs through the autonomic nervous system. (4)

Szasz (1952) agrees with Alexander on the role played by the autonomic nervous system but speaks more of regressive innervation due to a failure in the ability of an individual to meet a stressful situation with integrated adaptive behavior with resulting energies turning inward upon self. (5)

H. G. Wolff (1950) points out that stresses which affect man may arise from threats and symbols of past dangers from failure and frustrations of various needs and aspirations and from cultural pressures or rapid social change in addition to those arising from his own biological and physical environment. Bodily reactions to stress may be localized or generalized in varying degrees of success. Specific dysfunction are fragmentation of protective reactions which represent adjustments which are not too costly and permit a relatively secure and tranquil existence. (6)

Stanton and Schwartz (1949) found the influence of culture well integrated in every aspect of psychosomatic organization as it determines and sanctions characterological defenses, the unbearable precipitating crisis, the type of illness and the selective acceptance of social interactions in the therapeutic settings. (7)

Holliday, noting the rapid social disintegration in the last 50 years, blames the resulting deterioration of child-parent relationship as most significant in the development of chronic recurring illnesses. Changes in society and increases in social insecurity have resulted in severe disturbances in children of our day. He also found as the birth rate goes down the frequency of psychosomatic illnesses goes up. (2)

Kahn, E., Freyhan, F. A. Knoman, (1951) states that our civilization presents nothing any more specific in the production of anxiety as shown by his survey that there is no increase incidence of peptic ulcer. (8)

In her work on psychosexual functions in women, Therese Benedik (1952) found that there was a correlation between each hormonal variation of the sexual cycle and its psychodynamic manifestation. Parallel to the hormonal cycle was the emotional cycle and both together constituted the sexual cycle. (9)

## PHYSIOLOGY AND PATHOLOGY

In 1911, Bechterer was able to demonstrate in the cerebral cortex nervous centers which controlled peripheral vegetative

functions.

Cushing, H. (1932) reporting on several of his patients who had undergone operations for cerebellar tumors and died of rapidly developing hemorrhaging and perforating ulcers postulated operative disturbances in the balance of the components of autonomic nervous system and that emotions might have a like effect. (10)

Also in 1932, Beattie, J., demonstrated that stimulation of the hypothalamus increases peristalsis of the intestine and of the stomach and causes an increase of gastric secretion. (11) Working with cats, Kabat, H., et al, in 1935 showed direct inhibition of tone and peristalsis following hypothalamic stimulation, thus showing the relationship of the midbrain and sympathetic nervous system. (12) Watt, J.W., et al in 1935 working with monkeys, demonstrated that lesions in the hypothalamic area especially the supra-optic and tuber nuclei are far more prone to cause profound gastro-intestinal disturbances with gastric and duodenal lesions that lesions elsewhere in the nervous system. (13) E. C. Hoff, et al (1935) also working with monkeys, confirmed the work of Watt, but found their lesions more confined to the tuber nuclei. (14)

Drury, A. N., Florey, H., and Florey, M.E., (1929) working with colon in dogs found a response of uniform pallor to fright even in the absence of the adrenal gland. (15)

Nicolson, N. C., (1920) and William, G. W., (1929), studying the effects of hypnosis on muscular fatigue found their subjects able to do more work, show less fatigue and able to recover during

shorter periods of recuperation. (16)(17)

Investigating the peripheral surface temperature in rheumatoid arthritics, Wright, L. M., et al (1930) found the skin temperature to be lower than normal and when subjected to cold it didn't drop as much and recovery was slower. (18)

Using neostigmine in the treatment of muscle spasm, Trommer, R. R. et al (1944), postulated that even in a quiescent disease process of the joints there remains a spastic state of the muscles emphasized by the fact that increased comfort could be obtained for the patients through the use of neostigmine. (19)

Selye (1946) emphasized the role of the pituitary and adrenocortical endocrine system in reaction to physical and emotional stress producing acute shock like responses and long standing adaptions. (20)

Wolff, H. G. (1943), found that sustained emotional tension produces overactivity of stomach and can eventually lead to ulceration. (21)

Wolff, H. G., Wolff, S. (1947), doing an experimental study of changes in gastric function in response to varying life experiences found that gastric hyperactivity, frequently with heart burn and epigastric pain, appeared in individuals who became angry and aggressive in response to a threatening situation. These symptoms were more intense on an empty stomach and were relieved by food and alkali. Gastric hypo-activity, with feelings of nausea and fullness occurred in those individuals reacting to adverse situations with attitude of

defeat and hopelessness. (22)

Stevenson, I. and Ripley, H. S. (1952), have shown with anxiety, anger, or guilt resulting from symbolic stimuli, changes in respiration which includes alteration in rate, depth and expiratory ratio. Among the various disturbances which are audible or visible during states of anxiety are sighing, gasping, sudden inspiration, etc. (24)

Emotional stress has been found to provoke a shortening of the clotting time and an increase in blood viscosity of persons with long standing hypertension. The intensity of hay fever is enhanced if the nose is exposed to pollen when the subject is experiencing conflict and anxiety and the amount of swelling of the mucous membrane is influenced by psychological threats and fears. Lewis(1935) (25)

The hypothalamus is the highest vegetative center in the brain and part of the diencephalon. Within the hypothalamus, a number of nuclei can be distinguished and experiments by Hess, W. R. and others show that stimulation of the posterior part of the hypothalamus leads to phenomena corresponding roughly to sympathetic responses while those of the anterior part lead to responses roughly resembling parasympathetic responses. The blood supply to the anterior pituitary and to the hypothalamic nuclei is extraordinarily rich and in many cells, especially those of paraventricular and supra-optic nuclei, are structures which have been interpreted by the microscope as signs of neurosecretion. Afferent fibers have been demonstrated from the hippocampus, olfactory bulb, and median forebrain bundle. The

relations appear specific as a given locus of the cortex supplies only one hypothalamic nucleus and most of these cortical areas are within the prefrontal field with some in the premotor area. Efferent fibers are the mamillothalamic tract to anterior nucleus of the thalamus from where impulses can reach the limbic gyrus and flow from there by intracortical fibers to the hippocampus or the pathway may be from the paraventricular nuclei to the median nucleus of the thalamus, to the prefrontal field and back to the hypothalamus. The outflow to lower centers can be followed through the dorsal longitudinal fasciculus into cranial nerves and cord. The posterior lobe of pituitary receives direct tracts from the supra-optic nucleus and nucleus tuberis. Ciba(1935) (26)

Easily seen from a review of the foregoing articles, the attempted integration of psyche and the soma has been one of manifest difficulties resulting in the varied methods of approach and courses of investigation it is necessary to consider some of the causes for such difficulties.

On the one hand, we are dealing with an area in the brain about which there is little definite information as to integration with the brain as a whole and the actual mechanism in which this area functions as the master switchboard if it be such for the regulation of the homostatic mechanisms and much more investigation remains to be done in this field. As a concrete example of an unknown mechanism in a psychosomatic phenomenon - how does one with conversion hysteria realize tactile stimulation of the part involved and yet deny it and

remain totally insensitive to any form of painful stimulus.

The source of the information received by the investigator of the emotions depends upon verbal confirmation of the patient, the experience of the investigator in making such an investigation, influence of the investigator upon the patient, and the personal interpretation of the results gained. All this without a uniform base line or starting point from which future investigators can confirm or deny the validity of such findings result in a maze of conflicting information.

Much must be done to increase our knowledge of the physiology of the hypothalamus and correlate and standardize methods of research.

## METHOD OF STUDY

Demonstrated clearly in the preceeding chapter is the variance of opinion manifested by the variety of methods, mechanisms and theories used to correlate and understand the relationship between the psyche and the soma. This is in part due to the mediation of personality patterns through a maze of interrelated, interlocking pathways - the autonomic nervous system, endocrine system and voluntary nervous system; the inability of the investigator to respond to more than one source of stimuli at a time; coloring of information obtained by the investigator's knowledge of the patient's disease; and the attempted comparison to so called normals which, in themselves, may have a nonapparent predisposition to one of the many psychosomatic conditions.

Resulting data therefore, with the exception of the basic concept of emotional immaturity and dependancy needs, has been highly controversial.

The method used by Dr. Floyd O. Ring and the author of (1) the organization of the personality patterns most frequently observed in literature into two large groups, (a) expressive and (b) suppressive, as consistent with the basic personality pattern in the particular disease process in question, (2) interview covering material in following outline, based on blocked emotional development of a patient with a confirmed definitive diagnosis at which time the diagnosis is unknown to the investigator, (3) diagnosis based on material gleaned

during the interview with the following results: out of 16 rheumatoid arthritic patients interviewed, 100 % were correctly diagnosed, out of 10 peptic ulcer patients interviewed, 90% were correctly diagnosed, and there was some question of the validity of the diagnosis of peptic ulcer in the patient in which the error was made, (4) the use of patients with dissimilar psychosomatic conditions as controls for the process being studied, as the patient has one set of patterns which is working for him and is less likely to develop the process being studied and compared.

OUTLINE FOR EXAMINATION RECORD OF PSYCHOSOMATIC PATIENT

I. Identification: Name, age, marital status, race, occupation, religion, education, social and financial class.

II. Birth: Date, place, family constellation and circumstances.

III. Childhood: Personality of each parent or substitute, how parents got along with each other and with the patient and siblings, relation between patient and siblings and other people. Chief likes and dislikes, satisfactions and dissatisfactions, love, fears, and hates as a child.

IV. School history: Scholastic and social.

V. Work history at home and away. Military history.

VI. Marital history and attitudes toward sex, children and responsibility.

VII. Habits: Eat, sleep, smoke, drink, drugs, social, suxual, economic.

VIII. Patient's opinion of most important accomplishments and failures. Chief ambitions - past, present, and future. Greatest satisfaction in life (happiest time), greatest dissatisfaction (unhappiest time).

IX. General appearance and manner at the start of the interview and as the interview progresses.

A. Attitudes toward:
   1. Self (self description).
   2. Other people.
      a. Most liked and disliked kind of person.
      b. The individual most favored and disfavored.
   3. Work, play, and recreation.
   4. Life and death.
   5. Emotions and expression of love, hate or fear.
   6. The past, present, and future.
   7. Special situations or miscellaneous things which the patient may bring forth.

B. Relations with other people:
   1. How he relates to them.
   2. How he affects them.
   3. How they affect him.

C. Reactions to stress:
   1. Frustration of desires. Hate, fear, love.
   2. How does he show his emotions.

## PERSONALITY PATTERNS

The personality patterns presented here are a composite of items most frequently referred to in the literature, and the personal experiences of Dr. F. Ring, based on the results gleaned from interviews following the outline as presented in the chapter "Method of Study".

These personality patterns were then divided into large groups, (A) expressive and (B) suppressive, as was consistent with the basic personality pattern in the particular disease processes in question.

One disease process, which is most representative and definative of each group, was chosen for purposes of this paper in spite of the inability to accurately verbalize important expressions and attitudes as seen in the patients during the interview.

The suppressive group is represented by the rheumatoid arthritic and its direct opposite, the expressive group is represented by the peptic ulcer patient.

### PERSONALITY PATTERN OF THE PEPTIC ULCER PATIENT

"Business leader, actor, party boy"
"Dependent leaner"

This individual is most often characterized by an active means of gratifying his personal needs. He meets other people well and seems to like and enjoy them. He is gregarious and outgoing, hard driving toward his goals which consist of security for himself and others, although often hypochondriacal. He believes in the security

of wealth and power. He over-extends himself in work and play activities and in responsibilities of various kinds. He takes on more than his share of work and responsibility, gives himself little time for rest and relaxation, is fairly competitive, has fear and resentment toward failure and an overall need to gain and maintain security and to "prove himself". Onset is often related to a crisis in which he has to perform unusually heavy duty. He is very likable, makes friends easily and keeps them, outwardly shows and expresses reactions to stress, is a competent worker and successful in undertakings. He actively engages in "all" activities such as eating, smoking, drinking, chewing and talking. He invests freely, travels freely, gets away from home and denies home ties, does not try to hold on to what he has as does the ulcerative colitis patient for instance, and as a group are more apt to gamble in various ways.

Some peptic ulcer patients, on the other hand (possibly more from the duodenal ulcer), are passively submissive, rigid, overwhelmed by emotional stimulation and need for dependence upon someone else, and will not try to perform without the support of someone else such as a parent or substitute. In the face of failure, he blames the other person. Depressions are more common in these people

The peptic ulcer patient's conflict lies between accepting help from others and going out and getting everything for himself and establishing a total lack of need for assistance from anyone.

He has a longing need for friendships and to be with people for a feeling of support and security. He usually establishes both friendships and security but physiological side effects in the struggle seem to be productive factors in the ulcer. (2, 3, 5, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, and 48)

Review of 20 cases with Rorschack test showed no predominance of any single personality type (49). Data collected did not support the idea that ulcer patients are pushers and shovers (50). Many variations in character structure led Klein to believe that gastrointestinal diseases cannot be correlated with any one personality type (51). There is no convication that personality patterns can be correlated with gastric disease (52).

## PERSONALITY PATTERN OF RHEUMATOID ARTHRITIS PATIENT

"Teacher's pet"

These patients are usually women and are characterized by an obliging, helpful, obedient, noncomplaining, masochistic, self-sacrificing, orderly, perfectionistic, compulsive, storic attitude with complete control and suppression of anger, and fear emotions with outwardly hostile and aggressive behavior completely inhibited and suppressed. They tend to marry young, have several children, are devoted to their children; prone to tolerate abuse and misconduct by other people with a tendency to suffer in silence. They will stick with a marriage to the bitter end and if an unsuccessful marriage is terminated in one way or other, they tend to marry again

and will most frequently marry the same kind of person in spite of a previously intolerable situation. They work hard, devote little time to play or recreation, have a fatalistic attitude toward life and death and feel no resentment for past happenings unless it be something they feel they themselves did wrong. Patients are hard to dislike, yet most people find it hard to become enthusiastic about their friendships since they are passive, aggreeable, and nonstimulating. This individual has a way of controlling people by extreme passivity and cooperativeness and refusal to be actively aggressive or provocative. They show no outward response to frustrations and even internal responses seem to be inhibited. They generally appear compulsively neat, well dressed, orderly, and maintain a smiling face and expressions of desires to be benevolent; work hard and are self-sacrificing for others; they keep things in order until totally crippled and incapacitated by the illness.

A conflict exists between a desire to be active, aggressive, and demonstrative in expressions of need and resentments versus a desire to completely hide such feelings, even from the self, as a result of fear of alienation from the people whose love she needs. Evidences of both sides of the conflict are seen in the patient's passively dominating other people, permitting them to go ahead with self-destructive tendencies on the one hand and trying to help them and be kind to them on the other. Freezing of the joints eventually takes over a control of aggressive impulses and also puts an end to self-sacrificing work and makes other people servient to them (2, 28,

53, 54, 55, 56, 57, 58, 59, and 60).

## CLINICAL RESULTS

Diagnostic impressions, based on the material gleaned during the interview which was compared with the "Personality Pattern" presented, resulted in the following: Out of sixteen rheumatoid arthritic patients interviewed, 100% were correctly diagnosed. Out of ten peptic ulcer patients interviewed, 90% were correctly diagnosed and there was some question of the validity of the somatic diagnosis of peptic ulcer in the patient in whom our error was made.

It is noted that there has been a high degree of accuracy in the diagnostic impressions in these cases, which runs higher than in other types of illnesses. Therefore, there must be a more definite personality pattern, or perhaps more definiative information is known about these diseases.

Although the number of cases is small, we believe that it represents a definite trend and an additional item to be utilized in the formulation of diagnostic impressions, in psychosomatic disorders.

## SUMMARY

A relatively new term, psychosomatic medicine, has resulted from the recognization that psychic and somatic illnesses may occur simultaneously or reciprocally and that there is a connection between them. This is an attempt to resolve the centuries-old medical science struggle, between those of extreme psychological orientation and those of extreme organic orientation, both claiming a solution to man's ills, both seeing some truths.

As early as 1911, Bechterer was able to demonstrate cerebral cortex nervous centers which controlled peripheral function.

The hypothalamus is centrally located with afferent fibers from the hippocampus, olfactory bulb, and median forebrain bundle; efferent fibers in the mamillothalamic tract, dorsal longitudinal fasciculus, and to the posterior lobe of the pituitary. The portal type of blood supply, connected with the anterior lobe of the pituitary, passes through a cellular area in the hypothalamus manifest microscopic evidence of neurosecretion.

All this is evidence to support the consensus that it is a vegetative control center in the central nervous system.

Bechterer's work was confirmed by Cushing with his observation that several of his patients who had undergone operations for cerebellar tumors died of rapidly developing hemorrhaging and perforating ulcers. Working independently, Beattie and Kabat, et.al., found that stimulation of various areas of the hypothalamus resulted in changes in gastric motility and secretions. Increases in gastrointestinal peristalsis, thus a relationship with the parasympathetic nervous system, was shown by Beattie; while Kabat elicited direct inhibition of tone and peristalsis, and a relationship between the midbrain and the sympathetic nervous system. Lesions in the hypothalamic area were far more prone to cause profound gastrointestinal disturbandes with gastric or duodenal lesions than lesions elsewhere in the central nervous system was demonstrated by Watt and confirmed by Hoff, et.al.

Emphasizing further the sympathetic nervous component in some diseases, Wright, et.al., in their investigation of the peripheral surface temperature in rheumatoid arthritics, found the skin temperature to be lower than normal and when subjected to cold it didn't drop as much and recovery was slower.

What about the emotional aspect in organic disease? This is in some part answered by the experimental work by Wolff, H. G. and Wolff, S., who investigated the changes in gastric function in response to varying life's experiences, in which study they found that gastric hyperactivity, eventually leading to ulceration, appeared in individuals reacting to a threatening situation, possibly

entirely symbolic with anger and aggression. On the other hand, gastric hypoactivity with concommitant feelings of nausea and fullness occurred in those individuals who reacted to adverse situations with attitudes of defeat and hopelessness.

Are the above results manifestations of the endocrine system? They might well be as shown by workers considering the relationship of the endocrine system to disease and to the emotional component. Therese Benedik, in collaboration with a group of endocrinologists, in her work on the psychosexual functions in women, found that there was a definite correlation between each hormonal variation of the sexual cycle and its psychodynamic manifestation, the two together constituting the sexual cycle. In addition, Selye's theories which are increasing in popularity, emphasize the role of the pituitary and adrenocortical endocrine systems in producing acute shock-like responses and long standing adaptions in reaction to physical and emotional stress. Though not considering the emotional aspect, Trommer, et.al., postulated that a spastic state of muscle exists even in a quiescent phase of joint pathology as elicitated by the fact that increased comfort could be obtained for the patient through the use of mostigmine.

Changes in the gastro-intestinal tract, however, may be a result of neurotransmission alone as was brought out by Drury, et.al., when he demonstrated a response of uniform pallor in the colon of dogs, to fright, even in the absence of the adrenal gland.

In consideration of the effects of emotions on the voluntary

or semivoluntary aspects of the body mechanism, Nicolson, N. C. and William, G. W., study the effects of hypnosis on muscular fatigue, finding their subjects able to do more work, show less fatigue and recover during shorter periods of recuperation. Anxiety, anger or guilt, resulting from symbolic stimuli, has been demonstrated by Stevenson, et.al., to result in changes in respiration including alterations in rate, depth, and expiratory ratio.

Thus it may be postualted that body homeostasis and function is regualted directly or indirectly through the inter-action of the nervous system, the endocrine system, and the emotional stability. This in turn is regulated or interrelated by the hypothalamus by virtue of position, connection and demonstrable effect of lesions therein.

The role of the emotional component of disease as manifested through the personality must be considered next. But first, how does the emotional component affect body homeostasis? Is it by a halt in emotional development at a certain stage with resulting inability to effectively cope with an unbearable stress situation and concomitant upset of homeostatic balance, or the results of a regression from a higher level of emotional development in response to an unbearable stress situation to a lower level, enabling the human organism to meet the situation without mental disorganization?

The following individuals lend support to the theory of halted emotional development. Alexander brought out his circular,

"Schematization of Human Personality" which he graphically portrayed as a circle beginning with the universal dependency need, which, when interfered with leads to narcissistic protest and over compensation resulting in competitive aggressiveness which leads to anxiety or guilt with regression to dependency. Sullivan, A. J., et.al., believes that perverted or frustrated primary instinctual biological drives, those of self-preservation, self-perpetuation and self-extension give rise to psychosomatic disorders. Jurgen Reneshin theorizes that psychosomatic processes occur in immature individuals who remain socially isolated because they didn't master the prevailing system of communication of adulthood.

Some authors hold with the regressive theory. Spasz believes that psychosomatic illnesses are due to a failure in the ability of an individual to meet a stressful situation with intergrated adaptive behavior, with resulting energies turned inward upon self. Wolff, H. G., points out that specific dysfunctions are fragmentation of protective reactions, which represent adjustments that are not too costly and permit a relatively secure and tranquil existance. Stanton and Schwartz believe that a psychosomatic disease process is determined and sanctioned by the influence of culture following the unbearable precipitating crisis.

The author, in conjunction with Dr. F. Ring agree with the conception of a blocked emotional development. With the above in view, the outline used as a basis for interviewing patients and for help in determining personality patterns, was formulated. These

patients had a substantiated somatic diagnosis which at the time of interview was unknown to the investigator but which was revealed after a diagnosis was made on material gleaned from the interview. Personality patterns which are a composite of items most frequently referred to in the literature and the personal experiences of Dr. Ring were divided into two large groups, (A) expressive and (B) suppressive, as was consistent with the basic personality pattern in the particular disease process in question and used in the formulation of a diagnosis.

One disease process, which is most representative and definative of each group, was chosen for purposes of this paper, in spite of the inability to accurately verbalize important expressions and attitudes as seen in the patient during the interview.

The suppressive group is represented by the rheumatoid arthritic who basicly is a type of individual whose active, aggressive expression of needs and resentments are subjugated for fear of alienating affections from the people whose love is most needed and whose joints eventually freeze, thus taking over control of aggressive impulses ending in hard self-sacrificing and making others subservient to them.

Contrasted to this in the expressive group is the peptic ulcer patient who is a type of individual who actively expresses his needs and resentment and who usually meets these needs, represented by wealth and security, but at the expense of body homeostasis with resulting pathology.

Results of diagnostic accuity though based on a limited number of patients has had a high degree of accuracy. Out of sixteen rheumatoid arthritic patients interviewed, 100% were correctly diagnosed. Out of ten peptic ulcer patients interviewed, 90% were correctly diagnosed and there was some question of the validity of the somatic diagnosis in the patient in whom our error in diagnosis was made.

Whether psychosomatic illness is a result of blocked emotional development as maintained by others and the trend established by our preliminary investigation, or is a result of a regressive trend, remains open for further investigational research. The truth may well lie midway between, or with predominance either way.

As seen in the review of the literature, the attempted intergration of the psyche and the soma has been one of manifest difficulties resulting in the varied methods of approach and courses of investigation. Therefore it is necessary to consider some of the causes for such difficulties. In one instance we are dealing with an area of the central nervous system about which there is little definite information as to the intergration with the brain as a whole or the actual mechanism by which this area functions in regulating body homeostasis. Much more investigation remains to be done in this field.

The source of information received by the investigator of the emotional aspect depends upon verbal confirmation by the patient, the experience of the investigator in making such an investigation,

the influence of the investigator upon the patient and the personal interpretation of the results gained. All this without a uniform base line or starting point from which future investigators can confirm or deny the validity of such findings results in a maze of conflicting information.

In conclusion, this paper helps support the trend toward the consideration of the psyche and soma as a whole rather than isolated individually functioning components.

## CONCLUSIONS

This thesis is a result of a review of the literature and some personal participation in studies on personality types, as etiological factors in some somatic illnesses.

The following links of psychosomatic illnesses have been fairly well substantiated:

1. There exists a connection between thought and emotional patterns, and somatic outlets with resulting somatic pathology.
2. Various neuronal connections between the cerebral cortex, hippocampus, hypothalamus, mid brain; and the nuclei of the parasympathetic nerves and the posterior pituitary have been demonstrated.
3. Stimulation of various portions of the hypothalamus leads to phenomena corresponding to sympathetic and parasympathetic responses.
4. There may be an interrelationship between the anterior pituitary and posterior pituitary or a neurosecretory relationship between the hypothalamus and the anterior pituitary.
5. The endocrine system responds to stress by hypo or hyper secretion, depending on the individual's emotional reaction to stress--as one tends to block it out or actively respond to it--with resulting somatic effects accordingly.

6. The peptic ulcer patient belongs to the expressive personality group, which reacts to a security threatening situation by anger and aggression. This expressiveness is also mediated through the cranial nerves with resulting gastro-intestinal hyperactivity and pathology.

7. Rheumatoid arthritics belong to the suppressive group manifest by a blocked thought and emotional outlet with resulting suppression of endocrine functions, principally manifest by a block of adrenal cortical secretion resulting in joint and muscular disability. This in no way interfers with the conception that rheumatoid arthritis may be of infectious origin.

The following conclusions are less well established.

1. Relative endocrine levels can be determined by psychoanalytic methods.

2. Studies of personality patterns can be used as an aid in the diagnosis of certain psychosomatic illnesses.

We have presented some conclusions here but there is need for further investigation in the field of the exact connections between thoughts, emotional patterns and somatic reactions.

This has been an extremely complicated field of study since it involves much that is controversial and so much that is unknown from both the psychiatric standpoint and the somatic or physiological standpoint. Likewise it is almost impossible to describe subjective impressions of personalities as they are understood to

exist in somatic conditions or any other personality for that matter.

Combining the two together as this paper has attempted to do has therefore been most difficult. However, this paper points out a new horizon in research, in the field of formulating a more definitive method of investigating personality patterns and showing their application as an aid to diagnostic proceedures.

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