The Hepatic Personality: Integrating the Mores of Western Medicine, Eastern Medicine, and Psychoneuroimmunology

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The work reported in this thesis is original and carried out by me solely, except for the acknowledged direction and assistance gratefully received from colleagues and mentors.

Carol L. Spence

Many times a day I realize how much my own outer and inner life is built upon the labors of my fellow men, both living and dead, and how earnestly I must exert myself in order to give in return as much as I have received.

✧Albert Einstein

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Some people come into our lives and quietly go…
Others stay awhile, and leave footprints
On our hearts…
And we are never the same…
✧ Unknown

As with *people*, some *events* come into our lives and quietly go, and others leave us forever changed. In that vein, it is with deep sincerity and humility that I acknowledge, first and foremost, the Divine presence in my life for creating an event that began with a gentle nudge for me to begin living my life's true purpose; a life in line with the integrity of my spirit. That nudge, unheeded, became a full-fledged shove into the most difficult, yet the most rewarding, journey of my life. This research is a by-product of that journey.

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I hope you never lose your sense of wonder ...
I hope you still feel small
When you stand by the ocean…
I hope you never fear those mountains in the distance,
Never settle for the path of least resistance ...
And when you get the choice to sit it out or dance

I hope you dance

✧ Tia Sillers

ABSTRACT

Put it before them briefly so they will read it, clearly so they will appreciate it, picturesquely so they will remember it, and above all, accurately so they will be guided by its light.

- Joseph Pulitzer

The purpose of this study was to examine the attitudes, emotions, and behaviors of individuals with chronic hepatitis C virus (HCV) to determine whether a configuration of personality traits – particularly anger, anxiety, and low self-esteem – exists common to individuals with HCV and to analyze the potential association of these traits relative to the existence and/or exacerbation of the disease. It was also the aim of this study to lend quantitative foundation to qualitative inference as relates to psychological contributors to disease by integrating the mores of Western medicine, Eastern medicine (with emphasis on Chinese medicine) and psychoneuroimmunology.

A total of 204 subjects were enrolled, including 104 subjects with documented chronic HCV and 100 subjects without HCV or other forms of liver disease. Each participant completed *The State-Trait Anger Expression Inventory*-2 ™ (STAXI-2™), *The State Trait Anxiety Inventory*, Form Y (STAI), and the *Multidimensional Self-Esteem Inventory* (MSEI). The ability to discriminate between individuals with HCV and those without liver disease was assessed by forced entry and stepwise methods of discriminant analysis. The forced entry analysis model demonstrated significance ($p<.001$) and 79.4% accuracy in classifying cases into HCV and non-HCV groups. (For the purpose of this study, the non-HCV group is called the control group throughout this dissertation.) Stepwise analysis was conducted to identify the smallest number of variables and to provide maximum discrimination between groups. A four variable model emerged that demonstrated significance ($p<.001$) and 77% accuracy in classifying cases into HCV and control groups.

The high level of classification accuracy demonstrated in this study is particularly remarkable because liver disease is generally recognized merely from a scientific perspective on the basis of medical tests and opinion rather than being considered even remotely associated with psychological characteristics.

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CHAPTER 1:
INTRODUCTION

Each variable in any system interacts with the other variables so thoroughly that cause and effect cannot be separated. A simple variable can be both cause and effect. Relationship is everything.

- Marilyn Ferguson

The myriad contributing factors to disease are perhaps as numerous as the types of diseases themselves. Western medicine places emphasis on causal factors such as genetics and agents *external* to the individual: bacteria, viruses, environmental pollutants and self-inflicted toxins from addictive habits as drugs, tobacco and alcohol. Eastern medicine places emphasis on the behaviors, attitudes and emotions *internal* to the individual as the root cause of health or illness. Illness represents a cycle of compromised soma, psyche, and personality. Integral to Eastern and Western medicine is the science of psychoneuroimmunology (PNI) that reinforces the mind/body connection and espouses the belief that the body's health is affected by one's attitudes and emotions; that the way one thinks, feels, and behaves affects the body – positively or negatively.

By integrating the mores of Western medicine, Eastern medicine (with emphasis on Chinese medicine), and psychoneuroimmunology, this study lends quantitative foundation to qualitative inference relative to the theory of psychological contributors to disease and demonstrates that personality characteristics – behaviors, attitudes, beliefs, and emotions – not only contribute to illness but are associated with disease of a *specific* organ of the body.

Current research in the areas of behavioral medicine and psychoneuroimmunology reveals that there is a direct correlation between personality and illness.[1] It is widely known and accepted that particular behaviors and emotions translate to heart disease. For

example Meyer Friedman's "Type A" behavioral research indicated that the negative emotions and behavior associated with stress, especially hostility, time urgency, and insecurity, contributed to the onset of atherosclerosis and myocardial infarctions.[2] In fact, it is said that the cornerstone of evidence to support the role of personality in the initiation and progression of physical disease is a body of work initiated by Meyer Friedman and Ray Rosenman (1959).[3] "This work continues to make the most convincing case for a causal role of personality in the development of physical disease."[4]

It is the aim of this study to show that there are predictable personality characteristics – namely anger, anxiety, and low self-esteem – associated with disease of the liver in the same vein as Friedman's research that showed that Type A behavior is associated with heart disease. Moreover, by quantifying the mind/body relationship, the import of the whole-person ("whole-istic") approach to illness and healing is framed in language that the scientist, as well as the practitioner of complementary alternative medicine (CAM), can embrace.

Statement of the Problem

Though lessening to some degree, Western medicine, in general, disavows qualitative inference relative to the body/mind connection, particularly as it relates to psychological contributors to disease. There are practitioners of Western medicine who do accept that one's attitudes and emotions play a role in physical illness – and wellness – and that the mind has the power to affect the course and outcome of one's health. Practitioners of Eastern medicine place emphasis on the behaviors, attitudes and emotions of the individual as the root *cause* of health or illness. This research assists in bridging

the gap between Eastern and Western medicine by showing quantitatively that there is an association between personality characteristics and chronic liver disease, namely HCV.

Purpose of the Study

It is important to examine the significance and impact of our personalities on our health, particularly if there are predictable personality characteristics conducive to disease, or the exacerbation of disease – in this case chronic hepatitis C. This study examined the personality traits of anger, anxiety, and low self-esteem, arguably innate to the human condition, to determine if they are associated with and/or are contributory to HCV.

With the determination that specific personality traits are associated with HCV, a behavioral modification component to health care can be proposed to optimize the well-being of individuals inflicted with this insidious disease of epidemic proportions.

Chapter 1 Endnotes

[1] Carol Ritberger, *What Color is Your Personality?: Red, Orange, Yellow, Green* (Carlsbad, CA: Hay House, 2000), 9.

[2] http://circ.ahajournals.org/cgi/content/full/104/23/2758 (accessed on November 5, 2005).

[3] Stephen Sutton, Andrew Baum, and Marie Johnston, eds. *The Sage Handbook of Health Psychology* (Thousand Oaks, CA: Sage Publications, 2005), 145.

[4] Ibid., 146.

CHAPTER 2:
REVIEW OF LITERATURE

Health is very much a product of beliefs and values, of emotional experiences and patterns of behaviour.[1]
✧ Daverick Leggett

The blend of physiological and psychological components with disease and wellness, or the mind-body connection, has not been openly discussed in the scientific community until fairly recent times; however the origins of this important concept began with such notables as Hippocrates (460–370 B.C.), often referred to as "the father of medicine." Hippocrates theorized that health was related to the balance of four bodily humors.[2] The four humors were fluids that were thought to permeate the body and influence its health, and the imbalance of humors, or *dyscrasia*, was thought to be the direct cause of all diseases.[3] It is said that Aristotle (384-322 B.C.) pointed to the connection between mood and health: "Soul and body, I suggest react sympathetically upon each other."[4] Galen (A.D. 131-201) proposed that a balance of the "passions" was essential for physical health. In the days of ancient Greece, people recognized that illness came from physical and emotional challenges, unhealthy habits and toxic attitudes.

Scientific research strongly suggests that what we think, believe, and how we behave can improve or exacerbate a variety of illnesses, including asthma, heart disease, gastrointestinal disorders, musculoskeletal diseases, endocrine disorders, and obesity.[5] James Gordon (1996) writes of the same diseases owing responsibility in part to one's attitudes and behaviors, adding such notables as cancer, arthritis, depression, migraine headaches, eating disorders, fibromyalgia, and immune deficiency syndrome. He states,

“The majority of American adults, and a significant minority of our children, suffer from one or more chronic, often debilitating, sometimes life-threatening illnesses."[6] Indeed, it is possible that various illnesses have genetic predispositions at their root, but Gordon claims, “*All*…are shaped by the ways we think and feel, eat and exercise, work and play…by the stresses we experience and the way we respond to them.”[7]

Caroline Myss (1996) states, "Unquestionably, a strong link exists between physical and emotional stresses and specific illnesses…emotional and spiritual stresses or diseases are the root causes of *all* physical illnesses. Moreover, certain emotional and spiritual crises correspond quite specifically to problems in *certain parts of the body*" (italics added for emphasis). [8] Further, according to Myss, "The links between our emotional and spiritual stresses and specific illnesses are best understood in the context of the anatomy of the human energy system"[9]…and by identifying and understanding the interconnection of body, mind and spirit.

Candace Pert (1999) writes of the significance of psychosomatic causes of illness. She breaks the word *psychosomatic* into its parts, and it becomes *psyche*, meaning mind or soul, and *soma*, meaning body.[10] She believes that "virtually all illness; if not psychosomatic in foundation, has a definite psychosomatic component."[11] One's physiology changes when the body is under considerable stress. Under stress, the autonomic nervous system, neuroendocrine axis, and limbic system of the brain are aroused. Increased pulse, breathing rates, dizziness, tingling and numbness in hands and feet, headaches, abdominal discomfort, and tightness in the chest are among the resulting conditions.[12]

Most health professionals will agree that one's attitudes and emotions contribute to physical illness – and wellness; that the mind has the power to affect the course and outcome of one's health, however because the field of Western medicine has become so specialized, it is easy to lose sight of the body/mind connection in the treatment of the patient. It is important for health professionals to understand the need to treat the *whole* person rather than mere fragmented parts of the body.

Arthur Kleinman (1988), in his *Illness Narratives*, states "For members of Western societies the body is a discrete entity, a thing, an 'it,' machinelike and objective, separate from thought and emotion. For members of many non-Western societies, the body is an open system linking social relations to the self, a vital balance between interrelated elements in a holistic cosmos. Emotion and cognition are integrated into bodily processes. The body-self is not a secularized private domain of the individual person but an organic part of a sacred, sociocentric world, a communication system involving exchanges with others (including the divine)."[13]

To honor the whole-person philosophy of treatment is to understand such findings as revealed in a study undertaken in 1973 by the Department of Health, Education and Welfare in Massachusetts that showed that "the best predictor for a heart attack was not high blood pressure…cholesterol…or smoking -- but job satisfaction."[14] Another example of this phenomenon exists in a study by Levy, Herberman, Lippman, & D'Angelo (1987) in which it was observed that emotional stress was associated with reduced natural killer cell activity among patients with breast cancer, which, in turn, was shown to be associated with poorer prognosis. "That is, node positive patients had lower levels of natural killer cell activity than node negative patients."[15]

According to Caroline Thomas of Johns Hopkins, “Thirty years of intensive research…have so far failed to discover the single ‘cause’ of cancer, heart attack, or mental illness. The time has now come to consider another concept of disease etiology…”[16] Kleinman (1988), in line with the adage, “People are not sick because they have an illness, but have an illness because they are sick,” cites numerous cases in which illness is a representation of inner turmoil. He introduces the importance of personality type to the exacerbation of the health challenge: "When our personality type is such that we exaggerate the significance of stress or anxiously ruminate about our bodily processes, then amplification of physical symptoms is enhanced."[17]

Yet another aspect of this philosophy lies in the revelation of research that whether or not a disease manifests for genetic reasons or is virus or bacteria based, not everyone at risk or exposed will present with the disease. Further, a puzzle exists as to how the same virus or microbe may “cause” different diseases in different people – or perhaps will not manifest at all in others. “*Treponema palidum*, as an example, may result in inflammation of the aorta in one person, syphilis of the brain in a second and no disease at all in a third.”[18] Specific to this research is the fact that HCV, once believed to affect only the liver, can affect almost any organ in the body.[19] Findings have shown that the key lies with the condition of our individual immune systems and that our susceptibility to disease is linked to the vitality of our life force and our ability to cope with – and the way in which we view – our life and environment. Indeed, it has been argued that "…distress-related immune dysregulation may be one core mechanism behind a large and diverse set of health risks associated with negative emotions."[20]

Disease According to the Traditions of Western Medicine, Eastern Medicine, and Psychoneuroimmunology

Western Medicine

Disease, under the construct of Western medicine is defined as a pathological condition of a part, organ, or system of an organism resulting from various causes, such as infection, genetic defect, or environmental stress, and characterized by an identifiable group of signs or symptoms.[21] As relates to liver disease, threats to the liver from the view of Western medicine include genetic transference, environmental and viral toxins, obesity, and such behavioral factors as alcohol consumption and drug usage. Liver diseases are known as viral hepatitis (A, B, C and D), autoimmune liver disease, fatty liver, alcohol-induced liver disease, cirrhosis, cancer, and Wilson's disease.

Eastern Medicine

The Eastern view of disease is far more complex. The general premise of Eastern tradition is that body, mind, and spirit are interwoven and that when all three are balanced the individual is healthy; when one or more of the triad is out of balance, illness results. "When the flow of *Qi* is unimpeded there is harmony, balance, and good health. When there are *Qi* blockages, too much or too little *Qi*, there is an imbalance which can lead to disharmony and disease."[22]

Chinese Medicine, specifically teaches that certain types of people emerge from the configurations of physique and character that correspond with the organ networks and that through their predispositions and tendencies, these types make, or certainly contribute to, their diseases.

In India and China, health is considered a balance among the body's humors and the constituents of the outer world mediated by diet and a hierarchy of social relations tightly organized around a systematic categorization of the world in terms of purity and pollution.[23] Bodily complaints are a reflection of moral problems and a result of disharmonies in social relationships and in the cultural ethos.[24] The Tantric philosophy of ancient India and that of Chinese medicine are based on an energetic system of Five Elements. The Elements correspond to the way in which an individual perceives his connection to his or her world, and the individual's most dominant personality traits link him with a specific element. For example, "In Chinese medicine, it is said that the *Element of Wood* involves the structuring of potential into experience – what has been called 'the Plan,' your program for your life. Wood also relates to the liver…the liver bears the brunt of our 'worry' – obsessing over the Plan and the countless ways it might miscarry."[25] Since the "Plan points the direction for your life, disturbances of the Wood Element involve confusion about where you're going and why. Anger about being out of synch with your Plan leads to liver problems."[26]

Psychoneuroimmunology

The term, psychoneuroimmunology, coined by Robert Ader in 1981, describes the interactions among behavior, neural and endocrine function, and immune processes relative to health and disease. Breaking the word into its parts, psychoneuroimmunology combines the mind (psychology), the brain (neurology), and the body's natural healing system (the immune system).

Research in the neurosciences has revealed that there are chemical messengers from the brain that influence the body and communicate on a cellular level. Among these chemicals are stress hormones and neurotransmitters that vary according to attitudes, moods, and emotions. Candace Pert, a research professor in the Department of Biophysics and Physiology at Georgetown University School of Medicine and one of the pioneers of psychoneuroimmunolgy, was instrumental in finding that chemicals inside the physical body form a dynamic information network. Through this network, according to Pert (1997), mental attitudes and emotional responses can affect physical functioning and produce illness. "The three classically separated areas of neuroscience, endocrinology, and immunology, with their various organs – the brain; the glands; and the spleen, bone marrow, and lymph nodes – are actually joined to each other in a multidirectional network of communication, linked by information carriers known as neuropeptides."[27] Pert has shown that emotions govern every system of the body. "These neuropeptides run your physiology, your health, or your tendency toward disease."[28]

Simplistically stated, when negative emotions reign supreme, and the individual is not equipped to cope with them productively, "molecules of emotion" diffuse through the fluids surrounding each cell of the body and bind themselves via ligand (neurotransmitter, steroid, and/or peptide) to its own specific receptor on the surface of a cell. The receptor then transmits the ligand from the surface of the cell, deep into the cell's interior, where the message can change the state of the cell dramatically.[29] Pert describes this ligand-receptor system as a "second nervous system" (second to the brain and its extension, the central nervous system) – a chemically-based system, "one

indisputably more ancient and far more basic to the organism. There were peptides such as endorphins…being made inside cells long before there were dendrites, axons, or even neurons – in fact, before there were brains."[30] "In the wake of discoveries in the 1980s, these receptors and their ligands have come to be seen as "information molecules" – the basic units of a language used by cells throughout the organism to communicate across systems such as the endocrine, neurological, gastrointestinal, and…the immune system."[31]

In an article entitled, "Emotions, Morbidity, and Mortality: New Perspectives from Psychoneuroimmunology,"[32] Kiecolt-Glaser, McGuire, Robles and Glaser frame Pert's "molecules of emotion" theory in the context of the production of proinflammatory and anti-inflammatory cytokines (protein substances released by cells that serve as intercellular signals to regulate immune response) that influence a host of medical conditions that can be directly stimulated by negative emotions and stressful experiences.[33] When anti-inflammatory cytokines take over, they "dampen the immune response, causing…decreased cell function and synthesis of other cytokines."[34] It would follow that negative emotions give rise to inflammation that could indeed promote, worsen – or at the very least be associated with – liver inflammation, i.e.: HCV.

An Integrative Approach to Health

As its title reveals, this study is an attempt to bridge the gap between Western and Eastern medicine. It is no easy task to bring East and West together since a major issue between the two is incompatibility due to the fundamental difference between their dominant world-views and philosophies.[35] In today's world, because there is increased

consciousness and awareness of environmental issues, health issues, and the responsibility of mankind, it would seem that the integration of East and West would be mutually beneficial. Stanislav Grof (1983) states, "Western scientific disciplines have described the universe as an infinitely complex mechanical system of interacting discrete particles and separate objects…matter appears to be solid, inert, passive and unconscious."[36] In this framework, Western science recognizes as real only those phenomena, including bodily ailments, which can be objectively observed and measured. Eastern philosophy defines humans in far greater perspective – commensurate with the entire universe that includes a *greater power*.

Margaret Caudill, research fellow in Medicine at Harvard Medical School assesses one of the difficulties that arises when attempting to bring Western and Eastern medicine (specifically Chinese medicine) together, stating, "Almost none of the traditional Chinese medical texts are available in English, and those that are available make little or no attempt to present the cultural medical tradition *in toto*. Even translated works pose the problem of a completely unfamiliar approach to disease and a foreign terminology. Only someone familiar with the Chinese language, naturalist and Taoist philosophy, and with Chinese culture as it has been influenced by these philosophies, would be able to comprehend the Chinese medical tradition."[37] The Chinese have observed life processes and relationships between individuals and their environments for thousands of years, and "the art of Chinese medicine has developed vocabulary to describe myriad subtle body patterns, a method of description not available to Western medicine because of its emphasis on disease states. The Chinese approach is a more holistic consideration of health and disease and of the delicate interplay between these opposing forces."[38]

Ted Kaptchuk (2000) contrasts the Western and Eastern medical structures by describing Western medicine as primarily concerned with isolable disease categories, or agents of disease, which it targets, isolates and tries to change, control, or destroy.[39] According to Kaptchuk (and admittedly very simplistically stated), the Western physician starts with a symptom and then searches for the underlying mechanism – a precise *cause* for a specific *disease*.[40] Although the disease may affect various parts of the body, it is a relatively well-defined, self-contained phenomenon. Precise diagnosis frames a rather narrow quantifiable description, and the physicians' logic is analytic.[41] Chinese physicians, on the other hand direct their attention to the *whole* individual - both physiological and psychological components. "All relevant information, including the symptom as well as the patient's other general characteristics, is gathered and woven together until it forms what Chinese medicine calls a 'pattern of disharmony.'"[42] This pattern of disharmony describes a situation of imbalance,[43] or what Westerners would term disease.

The Liver - East and West

Scientifically speaking, the liver, the largest internal organ in the body, is essential in keeping the body functioning properly. It removes or neutralizes poisons from the blood, produces immune agents to control infection, and removes germs and bacteria from the blood. It makes proteins that regulate blood clotting and produces bile to help absorb fats and fat-soluble vitamins. The liver performs many important functions that keep a person healthy. It removes harmful material from the blood. It makes enzymes and bile that help digest food. It also converts food into substances needed for life and growth.[44]

In line with Chinese tradition, "Liver" (organs are capitalized) refers to a wide and interrelated set of functions rather than a fixed object. "This set of functions can be observed at work in and around the Liver as well as at all other levels of the body-mind: these include physical as well as emotional, mental, and spiritual levels."[45] That is to say that the Chinese concept of Organ is a description of a wide range of functions and processes which take place in many different aspects and sites of the bodymind.[46] (Bodymind in this context, and according to Chinese tradition, refers to the "inseparable nature of body and mind.)[47]

Theory of Chinese medicine likens the Liver to a military commander "who formulates strategy and tactics…and…exercises authority in collecting and directing the *Blood*."[48] The liver stores and distributes blood, and this regulation process determines the quantity and pressure of the blood in the physical body and the evenness of emotion and consistency of behavior in the feeling body. When this process is jeopardized, "erratic activity in the body and a volatile temperament" ensues.[49] A "healthy" liver balances emotions and protects against frustration and sudden anger.[50]

While the Chinese focus is on how the organs relate to the individual's relationship to *worldly* matters, other Eastern traditions focus on the relationship between the organs and the energy centers of the body, known as chakras – and their connection with the spiritual realm. In other words, the chakras are the areas of interconnection between body and spirit.[51] From ancient times, belief has been that there is a specific relationship between each chakra and a location and an organ within the physical body. There are seven major chakras in the body – the third of which is found in the solar plexus and is the area in which the liver resides. According to tradition, psychological threats to this chakra

include issues of self-esteem, self-confidence, self-respect, sensitivity to criticism, responsibility for making decisions, care of oneself and others, trust, fear and intimidation.[52] "This energy center relates most strongly to the belief patterns we hold about ourselves, including our physical appearance, intelligence, physical abilities, and skills…In short, this chakra is the center of our self-esteem…"[53]

Hepatitis C

According to Western medicine, the Hepatitis C virus (HCV) is generally transmitted through blood-to-blood contact. HCV is an RNA (Ribonucleic acid) virus that is capable of mutating rapidly within the human body and uses this mutational process to invade the immune system which in turn results in a frequent chronic disease and rare spontaneous "cure" or clearance of disease. HCV is one of the most important forms of chronic disease discovered in the last twenty years[54] and is the most prevalent liver disease in the world.[55] The World Health Organization considers Hepatitis C an epidemic. It is often called the "silent" epidemic because it can infect a patient for decades before being discovered. According to the Center for Disease Control (CDC), 20 to 30% of people with chronic Hepatitis C will eventually face life-threatening diseases such as cirrhosis or liver cancer.[56] Currently, it is estimated there are about 170 million people worldwide who are infected with HCV, and 54 million of those individuals are in the United States. In industrialized countries, HCV accounts for 20% of cases of acute Hepatitis, 70% of cases of chronic hepatitis, 40% of cases of end-stage cirrhosis, 60% of cases of hepatocellular carcinoma and 30-54% of liver transplants. Chronic hepatitis C virus infection is the leading cause of cirrhosis in this country.[57]

In the United States, the incidence of new symptomatic infections of HCV has been estimated to be 13 cases/100,000 persons annually. For every person who is infected with the AIDS virus, there are more than four infected with HCV.[58] The CDC estimates that there are up to 60,000 new HCV infections in the U.S. every year, with 8,000 to 10,000 deaths each year resulting from chronic HCV. The HCV virus is difficult to treat due to resistance to medication, and once HCV is chronic, spontaneous clearance is rarely seen.

The following discussion will link the philosophies of Eastern medicine and psychoneuroimmunology to the Western definition of HCV by more specifically defining the personality and demonstrating how it contributes to the creation of disease.

The Personality's Role In Disease

Carol Ritberger (2000) writes that the key to both the way and degree in which stress and emotions contribute to the formation of disease presents in the human body lies in the personality. "Your personality is the organizing principle that affects all aspects of your life: your lifestyle, your work habits, your relationships, your stress responses, and your health."[59] Personality is comprised of attitudes, beliefs, emotions, and behaviors. There are two aspects of the personality – traits and characteristics. Traits are genetic, unique to the individual, and do not change over the course of one's lifetime.[60] Characteristics are learned and can be changed as we adapt to our ever-changing environment.[61] What determines our level of flexibility and adaptability, however, is driven by the boundaries predetermined by our personality traits.[62]

Our flexibility and adaptability govern the way in which we are able to cope with the stressors of life. It is said that it is not the stress in our lives that is dangerous to our

health but the way in which our personalities dictate how we will deal with it. In the 1920's Hans Selye, a European physician trained at the German University in Prague, developed the concept of *stress* and the body's adaptive reactions to any demand or "the rate of wear-and-tear caused by life."[63]

> A number of agents can cause stress, including intoxification, trauma, nervous strain…polluted air and radiation. According to Selye, the body reacts to stress in the same way it reacts to danger - by going through a series of biochemical changes, which he called the General Adaptation Syndrome (GAS). In the first phase, the body mobilizes its defenses against the stressor agent in a "fight or flight" response: the heartbeat is accelerated, blood pressure levels are elevated, an increased amount of blood flows to the muscles, and the lungs dilate to increase respiratory effort. The second phase of GAS is the "resistance phase" during which the body continues to fight the stress long after the effects of the "fight or flight" response have worn off. *If infectious agents induce the stress, the body's immune system activity increases; if the stress is physical, the neuroendocrine system converts protein to energy; if the stress is psychological, a combination of responses may occur* (italics added for emphasis).[64]

Stress, according to Selye, could be anything from prolonged food deprivation to the injection of a foreign substance into the body, to a good muscular workout. By "stress," he did not mean only "nervous stress," but "the nonspecific response of the body to any demand."[65] It is important to remember that Hepatitis C is a virus (stressor) that enters the body through the blood, generally affecting the liver at varying degrees depending on the condition of the individual's immune system. "There are people whose immune systems are capable of getting rid of HCV…however…others' immune systems allow the virus to persist, leading to potentially serious consequences."[66]

Research on personality and health related to explanatory mechanisms has seen considerable progress over the past few decades.[67] One category involves

pathophysiological processes in which one's personality may influence biological activity that initiates or influences the progression of physical disease, and the second involves mechanisms that link personality to disease through overt behaviors.[68] This study links *both* processes to HCV due to the fact that one's personality may influence biological activity that initiates or influences the progression of physical disease and the manifestation and progression of the disease can also be a result of overt behaviors.

Chinese medicine teaches that the tendencies of personality that correspond to liver disease can be described as domination of power (control), addiction, competitive drive, independence, resistance to change, and preoccupation with work.[69] Characteristics of psyche include such adjectives as arrogant, aggressive, reckless, driven, antagonistic, compulsive, impulsive, and confrontational. This individual has difficulty with intensity, restraint, cooperation, and anger.[70]

As relates to the personality characteristic of *control*, it is significant to note that research conducted at the CNR Institute of Clinical Physiology and University of Pisa, Italy, to evaluate the personality and behavioral responses of a group of liver transplant candidates affirms this characteristic. Cattell's 16 Personality Factor Questionnaire and the PSY Inventory for Behavioral Assessment were administered to 95 men with liver disease and a group of 18 men without liver disease. Transplant patients had a significantly higher mean on *control* than did the individuals in the control group.[71]

A suitable synonym for control is the word, power. According to Chinese medicine, the Liver is "the Organ of the Wood element symbolized by the willow tree: pliant, resilient and powerful…The tough, springy and determined nature of the willow is a good metaphorical image for the nature of the liver. At both the physical and emotional level

the Liver gives us the will-like power and flexibility…The Liver is not the peacemaker; it is rather a power for effective action for which a tough kind of pliancy is vital,"[72] and yet if the liver is compromised, pliancy is not possible.

Beinfield and Korngold (1991) suitably describe a "Wood" personality, prime for liver disease. They write:

> At her best, Sally expresses her true nature: she is bold, decisive, clear, relishing work and performing well under pressure. On the other hand, because she is driven by a tendency to overdo, overperform, and overdirect, what was once a gratifying challenge can turn the corner into an aggravating distress. It is then difficult for her to retreat and recover a hedonic state. Boldness can become aggressive and hostile, decisiveness can become impulsive and unyielding, and clarity can escalate into fanatical adherence. Sally can become a tyrant. When *Wood* is unbridled, it can run wild, inflicting emotional and physical trauma. When Sally's desire to remain even-tempered is confounded, her muscles swell and tighten, and her focus of attention narrows. This restricts her capacity for sustained arousal and appropriate release, making her feel shackled and compressed.
>
> *Exaggerated,* inflated or "bound" *Liver Qi* expresses itself by a propensity toward …emotional outbursts; nervous, erratic behavior like eating on the run and inconsistent exercise; intolerance, indulgence, obstinance…a compulsion to work, and the need for sedatives to slow down.
>
> *Collapsed,* deflated, or "exhausted" *Liver Qi* is characterized by irritability, indecisiveness, a sensitivity to noise, a loss of judgment and perspective, a need for stimulants, and feeling overwrought, overwhelmed, uptight, and tired. These reactions are linked to the deficiency and stagnation of *Liver Qi* and *Blood*.[73]

It is stated in the *Huang-di Nei-jing* (the source of all Chinese medical theory; the Chinese equivalent of the Hippocratic corpus), "The Liver is the foundation of curtailing extremes…The Liver fosters a relaxed, easygoing internal environment – an even disposition."[74] When the liver is unable to "curtail extremes," an imbalance occurs (and

vice versa). It is insufficient to say that one's behavior has threatened the liver, because the compromised liver exacerbates the behavior, demonstrating that illness represents a cycle of compromised soma, psyche, and personality. Both "extremes" – *exaggerated* behavior and *collapsed* behavior of the individual are categorized by emotional chaos. The extreme individuals are out of control, yet controlling; inordinately composed, yet tempestuous. They are independent, yet enslaved. They are prone to addictive behavior for both stimulants and sedatives. "In periods of deficiency or excess, the Liver is unable to maintain the equanimity of the mind and emotions."[75] They often turn to addictive behavior for escape from the stress of their present reality, as a result of the lack of self-esteem that created it, and/or their lack of ability to cope with it. Many erroneously believe that HCV is a disease specific to substance abusers. It is true, however, that HCV is a disease that can be both created and exacerbated by the at-risk behavior of drug and/or alcohol usage. HCV can enter the bloodstream by injection of an HCV-infected (unsterile) needle, as an example, and research has shown that there is a strong and well-known relationship between alcohol misuse and hepatic cirrhosis.[76]

In Chinese theory, the liver is assigned to distribute the spirit, or Qi. "Through the task of holding and releasing the *Blood*, the *Liver* spreads the Qi."[77] Therefore, not only has the virus compromised the liver, it has compromised the Qi, or spirit, manifesting in the psyche as "agitation, nervous tension, suppressed emotion, and frustration."[78] Again, the cycle: these traits are not only contributory to liver disease but are also a by-product of the disease. According to PNI, "Emotions are at the nexus between matter and mind, going back and forth between the two and influencing both."[79]

Personality Testing

The personality inventories used in this study measure personality traits commensurate with three specific emotions, attitudes and behaviors, that when "out of control" could be precursors to – and the result of – liver disease according to the precepts of Chinese medicine. They are anger (test selected: *State Trait Anger Expression Inventory – 2*™), anxiety (test selected: *State-Trait Anxiety Inventory*, Form Y), and low self-esteem (test selected: *The Multidimensional Self-Esteem Inventory* - MSEI).

The tests were selected on the basis of their merit, respect, and extensive usage in the field of behavioral psychology; and the fact that they have been used in research specific to medical conditions. All three personality tests are reliable and valid instruments and have significant longevity. The construction of the STAI began in 1964, the MSEI in the early 1970's, and the STAXI-2™ has evolved from the early 1980's. Over the course of time, application, and research, all three have been revised numerous times for the sake of improvement in conceptual construct, procedure and outcome. Of significance as well, thousands of individuals were tested in the development, standardization, and validation of each of the tests selected, and each has normative samples.

State Trait Anger Expression Inventory-2™

The STAXI-2™ provides concise measures of the experience and expression of anger. It was developed with two goals in mind. The first was to assess components of anger that could be used for evaluation of normal or abnormal personality, and the second goal is more specific to a particular research orientation, in this case to have a means of measuring contributions of various components of anger toward the development or

exacerbation of medical conditions such as hypertension, coronary problems, and cancer.[80]

The State Trait Anxiety Inventory, Form Y (STAI)

The STAI was selected for this study as it is acclaimed as the leading measure of personal anxiety worldwide.[81] Over the past decade, the STAI has been used more extensively in psychological research than any other anxiety measure.[82] The STAI has been used increasingly in research of stress-related psychiatric and medical disorders – hypertension and coronary heart disease, asthma, headaches, and "forms of psychosomatic illnesses such as colitis…duodenal ulcers, and infectious mononucleosis."[83] It evaluates feelings of apprehension, tension, nervousness, and worry, which increase in response to physical danger and psychological stress. More than 2,000 studies have appeared in the research literature since the STAI test manual was published.

Multidimensional Self-Esteem Inventory (MSEI)

The MSEI is a comprehensive, multidimensional measure of self-esteem. It is a reliable and valid instrument and overcomes the methodological and conceptual difficulties (lack of convergence between theoretical models and measurement instruments) associated with many other measures of self-esteem. The test measures *Global Self-Esteem* (conceptualized as a summary of one's feelings of worthiness), *Components of Self-Esteem* that include measures of Competence (CMP), Lovability (LVE), Likability (LKE), Personal Power (PWR), Self-Control (SFC), Moral Self-approval (MOR), Body Appearance (BAP), and Body Functioning (BFN). Each of these

is examined in a rather broad sense to insure “that each of the components has important implications for the overall self-esteem of most individuals.”[84] Definitions of the components are found in Appendix A.

These personality measures are discussed in greater detail in Chapter 3, Research Methods.

Summary

The foregoing has shown that psychoneuroimmunology, a science that champions the mind/body connection, creates a bridge between Western and Eastern medicine. Questions to be resolved are *if*, and, if so, to what degree do individuals contribute to their illnesses; specifically what is unique to the individual with HCV? The precise question to be asked would be: What is the correlate between attitudes, behaviors, and emotions and a virus that presents in the liver? Perhaps the key to the mystery lies with the condition of the immune system as the direct object of individual coping skills the ability or inability to handle the stressors – including negative emotions – of life.

Richard Contrada and Tanya Goyal (2005) in an article entitled "Individual Difference, Health and Illness: The Role of Emotional Traits and Generalized Expectancies," cite research of Cohen and Herbert (1996) in which it is stated, "Immunologic processes are implicated in the development and progression of various infectious disorders from the common cold to HIV/AIDS, and may play a role in the etiology of cancers."[85] Immunologic processes are also involved in autoimmune diseases in which components of a person's immune system attack his or her own body. Thus, there have been significant advances in the identification of neuroendocrine,

cardiovascular, and immunological factors that are plausibly involved in stress-related processes linking personality to physical disease.[86]

Pert's (1997) findings take this explanation one step further: "The immune system was potentially capable of both sending information to the brain via immunopeptides and of receiving information from the brain via neuropeptides (which hooked up with receptors on the immune cell surfaces)."[87] Her work confirmed the existence of a chemical mechanism through which the immune system could communicate not only with the endocrine system but also with the nervous system and the brain.[88] Perhaps, then, one's attitudes, behaviors, emotions – or personality – are capable of seriously impacting the immune system. If so, the immune system, through its messages to specific parts of the body in turn would be responsible for weakening, or threatening, that particular area of the body, akin to the teachings of Chinese medicine that *very specific personality traits are associated with blockages of Qi to the various parts of the body*, compromising the particular area or organ. "Every one of the zones, or systems, of the network – the neural, the hormonal, the gastrointestinal, and the immune – is set up to communicate with one another, via peptides and messenger-specific peptide receptors."[89]

The immune system connection is particularly important and applicable to the study of HCV. "Viruses use the same receptors as neuropeptides to enter into a cell, and depending on how much of the natural peptide for a particular receptor is around and available to bind, the virus that fits that receptor will have an easier or harder time getting into the cell. Because the molecules of emotion are involved in the process of a virus entering the cell, it seems logical to assume that the state of our emotions will affect whether or not we succumb to viral infection."[90] Precepts of Western medicine relative to

HCV indicate that the virus does mutate within the body and uses this mutational process to invade the immune system.

Based on the foregoing data, personality testing of individuals with HCV compared against a control group of individuals without liver disease would theoretically be expected to show that there are predictable personality characteristics associated with a disease of the liver. Consideration has been given to such dynamics as psychological stressors of HCV, itself, and the effects of related treatment protocols, and those factors are addressed in the Discussion section of this study.

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CHAPTER 3:
RESEARCH METHODS

You have to let the process make the painting.
➢ Duncan de Kergommeaux

General Study Design

Overview

Two groups of individuals, aged 30-70, were given three personality inventories, the *State-Trait Anger Expression Inventory*-2™ (STAXI-2™), the *State-Trait Anxiety Inventory* (STAI), and the *Multidimensional Self-Esteem Inventory* (MSEI) to determine if personality measures for anger, anxiety, and self-esteem would reliably discriminate between patients with chronic hepatitis C and those never diagnosed with liver disease. One group of individuals had documented HCV, and the second group, the control group, was comprised of participants who had never been diagnosed with any form of liver disease.

Subjects

A total of 204 subjects were enrolled in this study, including 104 subjects with chronic HCV and 100 subjects without HCV or other known forms of liver disease. HCV participants came from the medical practices of Robert Gish, M.D. and Director of Liver Transplant, at California Pacific Medical Center (CPMC), Ed Wakil, M.D., Natalie Bzowej, M.D., Maurizio Bonacini, M.D., Todd Frederick, M.D., and Tami Daugherty, M.D. Patients also came from the clinic of Misha Cohen, O.M.D.: Chicken Soup Chinese Medicine (CSCM), and from a convenience sample of individuals with HCV who learned about the study through networking in the medical community. Participants

for the control group came from the CSCM, from relatives of the patients at the liver clinics of CPMC, and from a convenience sample of individuals who learned about the study through networking.

Gender, ethnicity, and socio-economic status were not controlled.

Sample Demographics

The sample of the HCV group included 55 females and 49 males. The mean age was 52.3365, with a standard deviation of 7.36116. The sample of the control group included 68 females and 32 males. The mean age was 49.9000, with a standard deviation of 11.54044.

Procedure

HCV participants were recruited by direct interviews with the researcher at the time of their clinic appointment at California Pacific Medical Center in San Francisco, the outreach clinics of CPMC (Modesto, Chico, and Redding, California), and Chicken Soup Chinese Medicine (CSCM) in San Francisco. Physicians and clinic staff members identified potential participants and introduced them to the researcher. The researcher met with the potential subjects before or after their appointment in a private setting (in an exam room or physician's office). Once the study was explained in detail to the patients, they were given a copy of the informed consent to read (See Appendix B for the CPMC Consent Form, Appendix C for CSCM Consent Form, and Appendix D for the General Consent Form for use with individuals with no medical clinic affiliation). If the potential participant had any questions, the researcher answered them in detail. The researcher "consented" each participant, and this process took from ten minutes to one hour per

participant. Personal interviews between participants and the researcher were deemed extremely important in an effort to gain the participants' trust, particularly given the personal nature of questions asked on the personality inventories. A number of inventory questions inquire about characteristics that could be perceived to translate to signs of weakness or character "flaws" (i.e.: anger, fear, low self-esteem), and to admit to these characteristics could be difficult.

When it was determined that potential participants were willing to take part in this research and met the necessary criteria, they were asked to complete the consent form and a patient questionnaire (See Appendix E). The questionnaire asked for confirmation that the patient has been diagnosed with HCV, asked how they believe they contracted the disease, when they were diagnosed, if they are undergoing medical treatment for HCV, and if so, the treatment being administered. Their responses were confirmed by their hepatologist and/or by chart review. (At the CPMC facilities, only the researcher, the physicians, and the research assistant had access to these documents, and they were kept separate from the surveys.) The researcher retained one copy of the consent form and questionnaire, and a copy of each was put in the medical file of the participant/patient. At CSCM, the originals of these two forms were maintained by the research assistant in a safely locked file in a private office. The researcher was given a copy of the forms at the conclusion of the study.

Participants were then given the testing instruments (See Appendix F, Appendix G, and Appendix H), score sheets to complete, and a self-addressed, stamped envelope in which to return the completed test materials. They were also given a brief write-up of the research so that they could read more on the topic of HCV and the purpose of the study

(See Appendix I). The participants were given a unique I.D. number and were instructed to refrain from putting their name on the answer/score sheets. The score sheets for the personality inventories had the preprinted, unique identifying number in place of a name; and had a space for age, gender, marital status, and educational level. Personality inventories could either be completed while at the respective clinic, or the participant could take them home to complete and return in the self-addressed, postage paid envelope provided. Participants were told that they were free to stop taking the test in the event that any of the questions made them uncomfortable.

Confidentiality was stressed due to the nature of the questions on the inventories, i.e.: measures of self-esteem and anger/anxiety-related queries, which if answered defensively, could confound the results. In view of the perceived and potential sensitivity of subjects, the researcher assured participants that their responses were not being judged. Confidentiality was also important due to privacy regulations of California Pacific Medical Center (See Appendix J).

The sample of convenience was handled in the same way, but rather than at clinic appointments, participants were recruited by persons who had heard about the study. These individuals contacted the researcher directly and were given details of the study, consent forms and test materials.

Fliers describing the research study were hung on the walls in the reception areas of the various clinics (See Appendix K).

Control group participants were also recruited at the time of medical appointments at the clinics of California Pacific Medical Center and at Chicken Soup Chinese Medicine in San Francisco. Potential subjects were identified by clinic staff members and were

introduced to the researcher. The researcher met with the potential subjects before or after their appointment in a private setting (in an exam room or physician's office). Once the study was explained in detail, they were given a copy of the informed consent to read (See Appendix B for the CPMC Consent Form, Appendix C for the CSCM Consent Form, and Appendix D for the General Consent Form designed for individuals with no medical clinic affiliation). If the potential participant had questions, the researcher answered them in detail. The researcher "consented" each participant, and this process took from ten minutes to one hour per participant. Personal interviews between participants and the researcher were deemed extremely important in an effort to gain the participants' trust, particularly given the personal nature of questions asked on the personality inventories. A number of inventory questions inquire about characteristics that could be perceived to translate to signs of weakness or character "flaws" (i.e.: anger, fear, low self-esteem), and to admit to these characteristics could be difficult.

When it was determined that potential participants were willing to take part in this research and met the necessary criteria, they were asked to complete the consent form and a patient questionnaire (See Appendix L). By completing the questionnaire they confirmed that they did not have HCV or any other form of liver disease. (At the CPMC facilities, only the researcher, the physicians, and the research assistant had access to these documents, and they were kept separate from the surveys.) The researcher retained one copy of the consent form and questionnaire, and a copy of each was put in the medical file of the participant/patient. At CSCM the originals of these two forms were maintained by the research assistant in a safely locked file in a private office. The researcher was given a copy of the forms at the conclusion of the study.

Participants were then given the testing instruments (See Appendix F, Appendix G, and Appendix H), score sheets to complete and a self-addressed, stamped envelope in which to return the completed test materials. They were also given a brief write-up of the research so that they could read more on the topic of HCV and the purpose of the study (See Appendix I). The participants were given a unique I.D. number and were instructed to refrain from putting their name on the answer/score sheets. The score sheets for the personality inventories had a preprinted, unique identifying number in place of a name; and had a space for age, gender, marital status, and educational level. Personality inventories could either be completed while at the respective clinic, or the participants could take them home to complete and return in the self-addressed, postage paid envelope provided. Participants were told that they were free to stop taking the test in the event that any of the questions made them uncomfortable.

Confidentiality was stressed due to the nature of the questions on the inventories, i.e.: measures of self-esteem and anger/anxiety-related queries, which if answered defensively, could confound the results. In view of the perceived and potential sensitivity of subjects, the researcher assured participants that their responses were not being judged. Confidentiality was also important due to patient privacy regulations of the medical clinics involved (See Appendix J).

The sample of convenience was handled in the same way, but rather than at clinic appointments, individuals were recruited by persons who had heard about the study. These individuals contacted the researcher directly and were given details of the study, consent forms and test materials.

Fliers describing the research study were hung on the walls in the reception areas of the various clinics (See Appendix K).

Materials

To reiterate statements made in the previous chapter relative to testing instruments chosen for this study, the personality inventories – the *State-Trait Anger Expression Inventory*™ (STAXI-2™), the *State-Trait Anxiety Inventory* (STAI), and the *Multidimensional Self-Esteem Inventory* (MSEI) – were selected on the basis of their merit, respect, and wide usage in the field of behavioral psychology; and the fact that they have been used in research specific to medical conditions. All three personality tests are reliable and valid instruments and have significant longevity, and over the course of time, application, and research, all three have been revised numerous times for the sake of improvement in conceptual construct, procedure and outcome. Thousands of individuals were tested in the development, standardization and validation of each of the tests selected, and each of the tests has normative samples.

- *State Trait Anger Expression Inventory-2*™

The STAXI-2™ consists of 57 items, and completion time is generally 10 to 15 minutes. As described in Chapter 2, Literature Review, The STAXI-2™ has been used extensively in research in behavioral medicine and health psychology.[1] It was the test of choice with which to measure anger and its effects on one's health, for it was developed expressly for those two reasons: to assess components of anger for detailed evaluations of normal and abnormal personality and to provide a means with which to measure the contributions of various components of anger to the development of medical conditions, particularly hypertension, coronary heart disease, and cancer.[2]

Charles Spielberger, the author of the STAXI-2™ distinguishes between "state anger" and "trait anger." "State anger is defined as a psychobiological emotional state or condition marked by subjective feelings that vary in intensity from mild irritation or annoyance to intense fury and rage...Trait anger is defined in terms of individual differences in the disposition to perceive a wide range of situations as annoying or frustrating and by the tendency to respond to such situations with elevations in state anger."[3] In order to determine the role that anger plays in medical conditions, the expression of anger must be distinguished from the experience of anger as an emotion, as well as from individual differences in anger-proneness as a personality trait.[4]

The STAXI-2™ measures the expression and the control of anger in four ways: Anger Expression-Out, Anger Expression-In, Anger Control-Out, and Anger Control-In. Anger Expression-Out and Anger Control-Out are based on the expression of anger, or control of anger, toward other persons and situations/objects in the environment, and Anger Expression-In and Anger Control-In are related to anger directed inward and the suppression of anger by cooling off or calming down. "In research on the etiology of medical disorders, the expression and control of anger emerged as important variables to be distinguished from the experience of angry feelings."[5] This will be discussed in further detail in Chapter 5.

The STAXI-2™ consists of six scales, five subscales and an Anger Expression Index (an overall measure of the expression and control of anger). It is divided into three parts: "How I Feel Right Now," How I Generally Feel," and "How I Generally React When Angry or Furious." In the development of the STAXI-2™ scales, Spielberger was cognizant of the issue of distinguishing between the absence of anger and the suppression

of anger. This was resolved by measuring the intensity of the experience of anger as an emotional state at a particular time and by measuring individual differences in anger proneness as a personality trait.

Alpha coefficient measures of internal consistency were uniformly high on all scales and subscales (median r = .88) with the exception of one subscale for "normal adults:" T-Ang/R, which was .76 for normal females and .73 for normal males.[6] T-Ang/R is a subscale of Trait Anger and is termed "Angry Reaction." The internal consistency reliabilities of the scales and subscales are satisfactory and are not influenced by gender or psychopathology.[7]

- *The State Trait Anxiety Inventory*, Form Y (STAI)

The STAI consists of 20 items that measure situational, or state anxiety, and 20 items that measure underlying, or trait anxiety. The inventory can be completed in approximately 10 minutes.

This test was selected for this study because of its extensive use in research over the last 40+ years and is acclaimed as the leading measure of personal anxiety worldwide.[8] The STAI has been labeled by some, "the definitive instrument for measuring anxiety in adults." Again to reiterate information from the previous chapter, over the past decade, the STAI has been used more extensively in psychological research than any other anxiety measure.[9] The STAI has been used increasingly in research of stress-related psychiatric and medical disorders – hypertension and coronary heart disease, asthma, headaches, and "forms of psychosomatic illnesses such as colitis…duodenal ulcers, and infectious mononucleosis."[10]

The STAI utilizes the same state and trait concepts as the STAXI-2™. "An emotional state exists at a given moment in time and at a particular level of intensity. Anxiety *states* are characterized by subjective *feelings* of tension, apprehension, nervousness, and worry, and by activation or arousal of the autonomic nervous system."[11] "*Trait* anxiety refers to relatively stable individual differences in anxiety proneness, that is, to differences between people in the tendency to perceive stressful situations as dangerous or threatening and to *respond* to such situations with elevations in the intensity of their state anxiety (S-Anxiety) *reactions*" (italics added for emphasis).[12]

Alpha coefficient measures of internal consistency for S-Anxiety scales were high, with a median coefficient of .93. The alpha coefficients for the T-Anxiety scale were also high, with a median coefficient of .90. With respect to the correlations between the S-Anxiety and the T-Anxiety scales for the normative samples, it was seen that, in general, "Trait-State Anxiety Theory predicts higher correlations between S-Anxiety and T-Anxiety in social evaluative situations and lower correlations in physical-danger situations."[13] That is to say, "Correlations between the S-Anxiety and T-Anxiety scales are typically higher under conditions that pose some threat to self-esteem, or under circumstances in which personal adequacy is evaluated; and correlations are lower in situations characterized by physical danger."[14]

- *Multidimensional Self-Esteem Inventory (MSEI)*

The MSEI consists of 116 items and can generally be completed in 20-30 minutes. This inventory was developed to provide a multidimensional measure of self-esteem. The test measures *Global Self-Esteem* (conceptualized as a summary of one's feelings of worthiness), *Components of Self-Esteem* that include measures of Competence, Lovability, Likeability, Personal Power, Self-Control, Moral Self-approval, Body Appearance, and Body Functioning. Each of these is examined in a rather broad sense to insure "that each of the components has important implications for the overall self-esteem of most individuals."[15] It is worthy of note that the selection and incorporation of these eight components into the MSEI were the result of extensive research, and the "data suggest that the 8 components of self-esteem measured by the MSEI are representative of the types of experiences that influence self-esteem in everyday life."[16]

Also measured by the MSEI is *Identity Integration*, one of the basic functions of self-evaluation. "This function concerns the organization of self-experience and the efficiency with which these experiences can be integrated into the self-concept."[17] The last measure of the MSEI is *Defensive Self-Enhancement*, and according to its authors, O'Brien and Epstein, all measures of self-esteem must deal with the issue of defensiveness since some individuals tend to bolster their worth, inflating their scores above their true level of self-esteem. Defensiveness can be manifested in such forms as compensation, projection, and denial.

With respect to internal consistency and reliability of the MSEI, alpha coefficients for all scales except *Defensive Self-Enhancement* were at least .80, and several scales

yielded reliabilities that were – or approached – .90. The reliability coefficient for *Defensive Self-Enhancement* was .78.

Methods of Data Analysis:

Upon completion, all score sheets were delivered to the researcher, either by mail or in person. The three questionnaires for each study subject were scored as prescribed in their respective manuals. Raw scores and T-scores were calculated, checked for accuracy, and entered onto an SPSS spreadsheet by the researcher. Lastly, the spreadsheets were sent to Paul Thomlinson, Ph.D. and statistician, who carried out statistical analyses of the results.

Forced entry and stepwise methods of discriminant function analysis were conducted on the scores from the three questionnaires to test whether the combined scores could reliably discriminate between HCV patients and controls. Analyses were carried out using SPSS software.

Chapter 3 Endnotes

[1] Charles Spielberger. *STAXI-2™ State-Trait Anger Expression Inventory-2™ Professional Manual* (Lutz, Florida:PAR Psychological Assessment Resources, Inc., 1999), 35.

[2] Ibid., 1.

[3] Ibid.

[4] Ibid., 20.

[5] Ibid., 19.

[6] Ibid., 9.

[7] Ibid.

[8] https://www3.parinc.com (accessed 12/15/05).

[9] Buros (1978) cited by Charles Spielberger, *State -Trait Anxiety Inventory, Form Y Manual.* (Redwood City, CA: MindGarden Publishing, 1983), 28.

[10] Charles Spielberger, *State -Trait Anxiety Inventory, Form Y Manual.* (Redwood City, CA: MindGarden Publishing, 1983), 47.

[11] Ibid., 4.

[12] Ibid., 5.

[13] Ibid., 33.

[14] Ibid., 34.

[15] Edward O'Brien and Seymour Epstein, *MSEI, The Multidimensional Self-Esteem Inventory – Professional Manual* (Lutz, Florida: PAR Psychological Assessment Resources, Inc., 1988), 7.

[16] Ibid.

[17] Ibid.

CHAPTER 4:
RESULTS

However beautiful the strategy, you should occasionally look at the results.
➢ Winston Churchill

This chapter presents the statistical findings of the study, including descriptive and inferential analyses. The latter includes two methods of discriminant analyses – forced entry and stepwise procedures.

In reading the following tables and figures it will be helpful to have the following guide to abbreviations. Definitions of each variable will be discussed in detail.

Abbreviation	Meaning
S Ang	State Anger
T Ang	Trait Anger
AX Ind	Anger Expression Index
S Anx	State Anxiety
T Anx	Trait Anxiety
GSE	Global Self-Esteem
SFC	Self-Control
IDN	Identity Integration
DEF	Defensive Self Enhancement
CMP	Competence
LVE	Lovability
PWR	Personal Power
MOR	Moral Self-Approval
BAP	Body Appearance
BFN	Body Functioning

Table 1 details descriptive statistics for all predictor variables, collapsing across both HCV and control groups:

Table 1. Descriptive Statistics for HCV and Control Groups.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	204	30.00	70.00	51.1422	9.69203
State Anger	204	44.00	80.00	48.1765	8.94913
Trait Anger	204	34.00	80.00	47.0882	9.89860
Anger Expression Index	204	26.00	80.00	48.6961	10.38594
State Anxiety	204	34.00	101.00	50.8824	13.59498
Trait Anxiety	204	34.00	91.00	53.6225	13.34830
Global Self Esteem	204	20.00	80.00	54.4216	11.69896
Self Control	204	20.00	80.00	54.6569	12.18171
Identity Integration	204	28.00	80.00	56.2500	11.06769
Defensive Self-Enhancement	204	30.00	80.00	57.5931	10.78843
Competence	204	20.00	80.00	54.6520	11.49347
Lovability	204	26.00	80.00	51.9951	11.56328
Personal Power	204	23.00	80.00	54.8922	10.62797
Moral Self-approval	204	28.00	80.00	59.2500	11.99841
Body Appearance	204	20.00	73.00	51.7010	10.03854
Body Functioning	204	20.00	79.00	47.0196	12.23254
Valid N (listwise)	204				

Figures 1 and 2, next page, illustrate the mix of study participants with respect to gender and level of education.

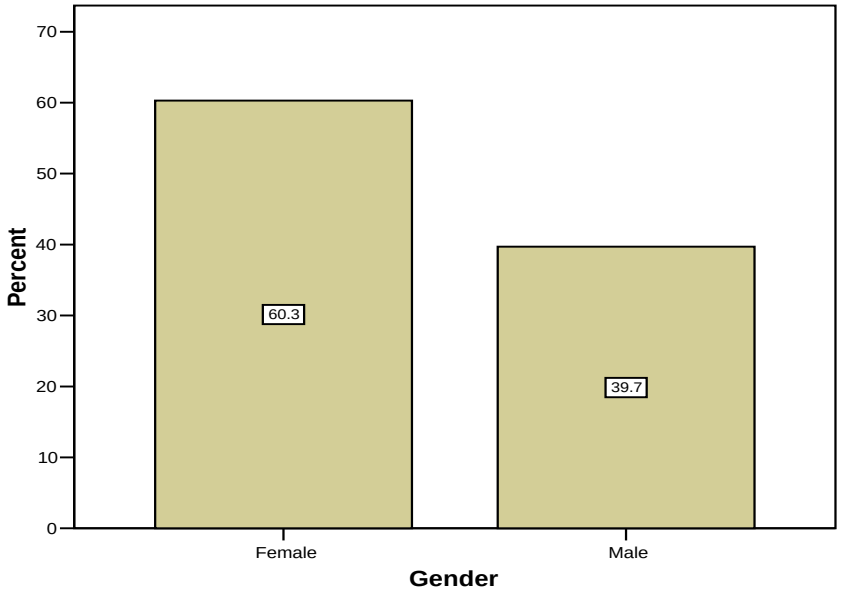

Figure 1. Percentage of Study Participants by Gender.

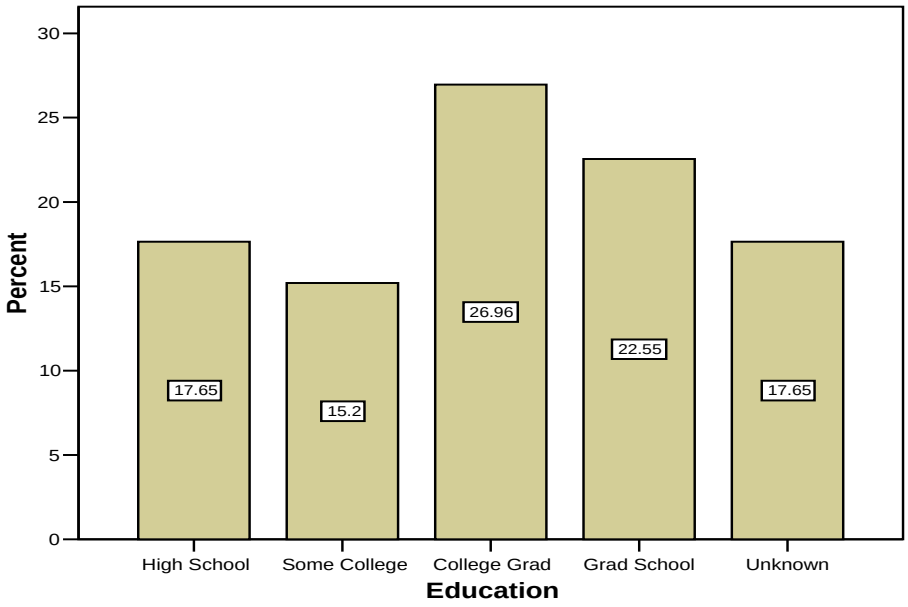

Figure 2. Educational Mix of Study Participants.

Tables 2 and 3 provide descriptive statistics (means and standard deviations) for the HCV and control groups individually:

Table 2. HCV Group Descriptive Statistics.

Descriptive Statistics by Group

Group: HCV

	N	Mean	Std. Deviation
Age	104	52.3365	7.36116
State Anger	104	50.8654	11.02077
Trait Anger	104	49.2885	10.52383
Anger Expression Index	104	52.1346	10.25600
State Anxiety	104	57.0865	14.93618
Trait Anxiety	104	59.8173	13.98596
Global Self Esteem	104	49.7212	11.33725
Self Control	104	51.4038	12.51292
Identity Integration	104	51.6731	9.76863
Defensive Self-Enhancement	104	56.9327	10.81016
Competence	104	50.7596	11.06775
Lovability	104	49.4808	11.74154
Personal Power	104	51.6250	9.90556
Moral Self-approval	104	55.9808	13.34747
Body Appearance	104	48.1827	10.49712
Body Functioning	104	40.9423	11.04521

Table 3. Control Group Descriptive Statistics.

Descriptive Statistics by Group

Group: Control

	N	Mean	Std. Deviation
Age	100	49.9000	11.54044
State Anger	100	45.3800	4.72855
Trait Anger	100	44.8000	8.67831
Anger Expression Index	100	45.1200	9.29568
State Anxiety	100	44.4300	8.02428
Trait Anxiety	100	47.1800	8.92209
Global Self Esteem	100	59.3100	9.97846
Self Control	100	58.0400	10.89520
Identity Integration	100	61.0100	10.34408
Defensive Self-Enhancement	100	58.2800	10.77697
Competence	100	58.7000	10.53374
Lovability	100	54.6100	10.82542
Personal Power	100	58.2900	10.32727
Moral Self-approval	100	62.6500	9.32399
Body Appearance	100	55.3600	8.09105
Body Functioning	100	53.3400	10.03753

Forced Entry Discriminant Analysis Results

This method of variable selection allows the researcher to enter all predictor variables of interest at a single time, and then determine whether the linear combination of these variables allows for accurate classification into groups. As such, all personality variables measured in this study were entered at once using this method. The results indicate that the combination of all variables does allow classification into HCV and control groups at well beyond chance levels (Wilks' lambda = .608, Chi-square = 96.81, $p<.001$). All variables, in linear combination, allowed for nearly 80% accuracy in classifying cases, as shown in the following classification table:

Table 4. Forced Entry Classification Results.

Classification Results[a]

			Predicted Group Membership		
		Group	HCV	Control	Total
Original	Count	HCV	81	23	104
		Control	19	81	100
	%	HCV	77.9	22.1	100.0
		Control	19.0	81.0	100.0

a. 79.4% of original grouped cases correctly classified.

As can be seen, using all variables, 79.4% of originally grouped cases are correctly classified. A comparison can be seen using the variables named in the hypothesis of this research – anger, anxiety, and self-esteem. That comparison between the HCV group and the control group is shown in Figure 3.

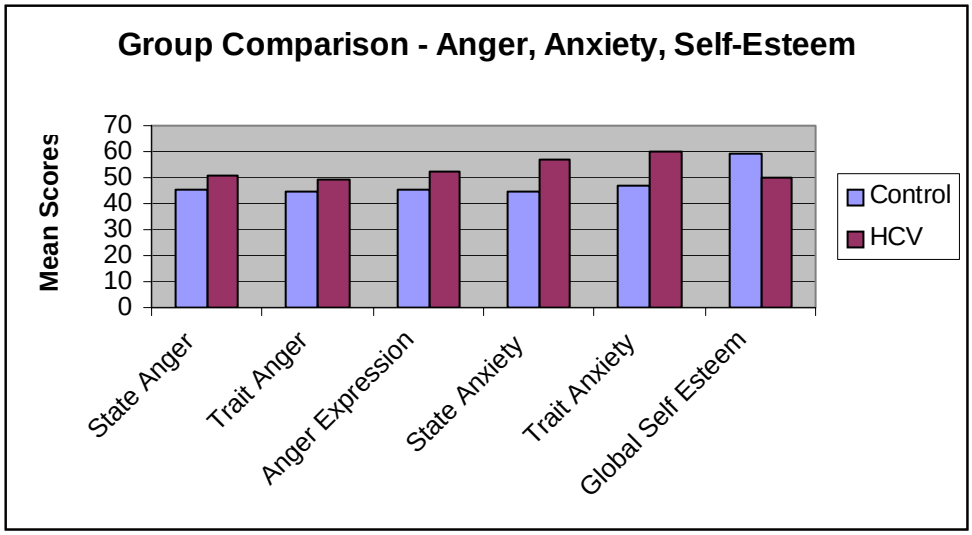

Figure 3. Group Comparison - Anger, Anxiety, and Self-Esteem.

Stepwise Discriminant Analysis Results

While the forced entry method of discriminant analysis described above allows for a good overall test of the discriminative power of the set of personality variables, it does

not provide an optimal way of identifying the variables that are most predictive of group membership (i.e., HCV or control). Therefore, the stepwise method of variable entry was employed in order to identify the smallest number of variables allowing for maximal discrimination between groups. Table 5, next page, demonstrates group statistics for HCV, Control, and Total.

Table 5. Group Statistics - HCV, Control, and Total.

Group Statistics

Group		Mean	Std. Deviation	Valid N (listwise) Unweighted	Valid N (listwise) Weighted
HCV	State Anger	50.8654	11.02077	104	104.000
	Trait Anger	49.2885	10.52383	104	104.000
	Anger Expression Index	52.1346	10.25600	104	104.000
	State Anxiety	57.0865	14.93618	104	104.000
	Trait Anxiety	59.8173	13.98596	104	104.000
	Global Self Esteem	49.7212	11.33725	104	104.000
	Self Control	51.4038	12.51292	104	104.000
	Identity Integration	51.6731	9.76863	104	104.000
	Defensive Self-Enhancement	56.9327	10.81016	104	104.000
	Competence	50.7596	11.06775	104	104.000
	Lovability	49.4808	11.74154	104	104.000
	Personal Power	51.6250	9.90556	104	104.000
	Moral Self-approval	55.9808	13.34747	104	104.000
	Body Appearance	48.1827	10.49712	104	104.000
	Body Functioning	40.9423	11.04521	104	104.000
Control	State Anger	45.3800	4.72855	100	100.000
	Trait Anger	44.8000	8.67831	100	100.000
	Anger Expression Index	45.1200	9.29568	100	100.000
	State Anxiety	44.4300	8.02428	100	100.000
	Trait Anxiety	47.1800	8.92209	100	100.000
	Global Self Esteem	59.3100	9.97846	100	100.000
	Self Control	58.0400	10.89520	100	100.000
	Identity Integration	61.0100	10.34408	100	100.000
	Defensive Self-Enhancement	58.2800	10.77697	100	100.000
	Competence	58.7000	10.53374	100	100.000
	Lovability	54.6100	10.82542	100	100.000
	Personal Power	58.2900	10.32727	100	100.000
	Moral Self-approval	62.6500	9.32399	100	100.000
	Body Appearance	55.3600	8.09105	100	100.000
	Body Functioning	53.3400	10.03753	100	100.000
Total	State Anger	48.1765	8.94913	204	204.000
	Trait Anger	47.0882	9.89860	204	204.000
	Anger Expression Index	48.6961	10.38594	204	204.000
	State Anxiety	50.8824	13.59498	204	204.000
	Trait Anxiety	53.6225	13.34830	204	204.000
	Global Self Esteem	54.4216	11.69896	204	204.000
	Self Control	54.6569	12.18171	204	204.000
	Identity Integration	56.2500	11.06769	204	204.000
	Defensive Self-Enhancement	57.5931	10.78843	204	204.000
	Competence	54.6520	11.49347	204	204.000
	Lovability	51.9951	11.56328	204	204.000
	Personal Power	54.8922	10.62797	204	204.000
	Moral Self-approval	59.2500	11.99841	204	204.000
	Body Appearance	51.7010	10.03854	204	204.000
	Body Functioning	47.0196	12.23254	204	204.000

The stepwise procedure revealed the following (See Table 6) with respect to equality of group means:

Table 6. Tests of Equality of Group Means as Revealed by Stepwise Procedure.

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
State Anger	.906	21.045	1	202	.000
Trait Anger	.948	10.998	1	202	.001
Anger Expression Index	.885	26.134	1	202	.000
State Anxiety	.782	56.200	1	202	.000
Trait Anxiety	.775	58.677	1	202	.000
Global Self Esteem	.831	40.996	1	202	.000
Self Control	.925	16.267	1	202	.000
Identity Integration	.821	43.961	1	202	.000
Defensive Self-Enhancement	.996	.794	1	202	.374
Competence	.880	27.510	1	202	.000
Lovability	.951	10.500	1	202	.001
Personal Power	.901	22.137	1	202	.000
Moral Self-approval	.922	16.992	1	202	.000
Body Appearance	.872	29.752	1	202	.000
Body Functioning	.742	70.223	1	202	.000

These results reveal that all personality variables measured were non-equivalent (or significantly different at $p<.001$) for the HCV and control groups, except for Defensive Self-Enhancement ($p=.374$). However, the purpose of stepwise analysis is to identify the smallest number of variables that provide maximum discrimination between groups, controlling for the variance explained in previous steps. These results produced a four variable model that classified cases nearly as accurately as the forced entry method above (with all variables in the model). See Table 7.

Table 7. Four Variable Model with Variables Entered/Removed.

Variables Entered/Removed[a,b,c,d]

Step	Entered	Wilks' Lambda							
						Exact F			
		Statistic	df1	df2	df3	Statistic	df1	df2	Sig.
1	Body Functioning	.742	1	1	202.000	70.223	1	202.000	.000
2	State Anxiety	.684	2	1	202.000	46.399	2	201.000	.000
3	Defensive Self-Enhancement	.670	3	1	202.000	32.836	3	200.000	.000
4	Anger Expression Index	.649	4	1	202.000	26.883	4	199.000	.000

At each step, the variable that minimizes the overall Wilks' Lambda is entered.

a. Maximum number of steps is 30.

b. Minimum partial F to enter is 3.84.

c. Maximum partial F to remove is 2.71.

d. F level, tolerance, or VIN insufficient for further computation.

Table 8. Variables in the Analysis - Four Variable Model.

Variables in the Analysis

Step		Tolerance	F to Remove	Wilks' Lambda
1	Body Functioning	1.000	70.223	
2	Body Functioning	.870	28.850	.782
	State Anxiety	.870	17.009	.742
3	Body Functioning	.842	31.890	.777
	State Anxiety	.829	19.935	.737
	Defensive Self-Enhancement	.885	4.223	.684
4	Body Functioning	.837	28.084	.741
	State Anxiety	.786	13.114	.692
	Defensive Self-Enhancement	.723	8.577	.677
	Anger Expression Index	.697	6.377	.670

The Wilks' lambda results for this four variable model shows that it is statistically significant, as depicted by Table 9:

Table 9. Wilks Lambda Results - Four Variable Model.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.649	86.404	4	.000

Finally, this model demonstrated 77% accuracy in classifying cases into HCV and control groups, as shown in Table 10.

Table 10. Classification Results - HCV and Control Groups.

Classification Results[a]

			Predicted Group Membership		
		Group	HCV	Control	Total
Original	Count	HCV	77	27	104
		Control	20	80	100
	%	HCV	74.0	26.0	100.0
		Control	20.0	80.0	100.0

a. 77.0% of original grouped cases correctly classified.

Figure 4 shows the Four Variable Model by mean scores of participants by groups.

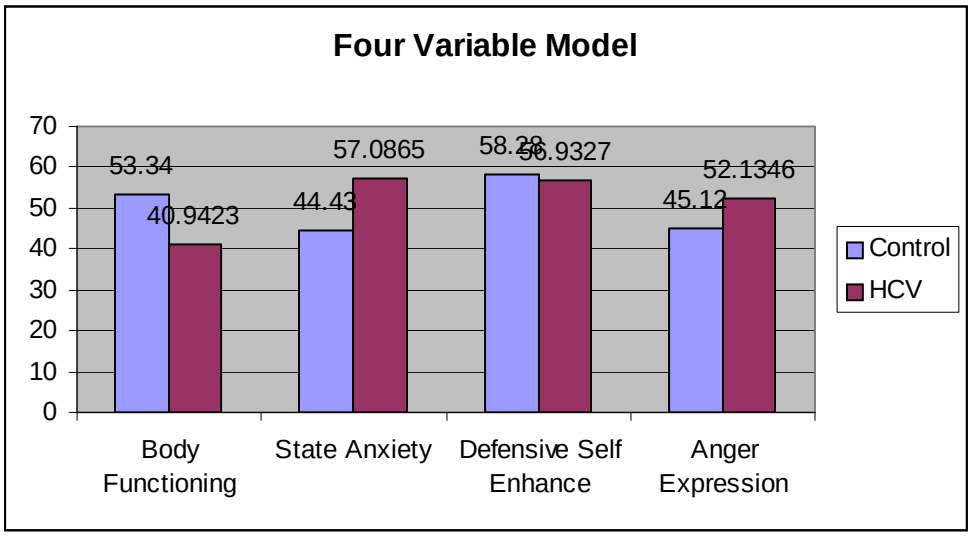

Figure 4. Four Variable Model - A Comparison by Groups.

The control group had significantly higher mean scores for Body Functioning than did the HCV group; and the HCV group had significantly higher mean scores for State Anxiety and Anger Expression. Mean scores for Defensive Self Enhancement were 58.29 and 56.9327 for the control and HCV groups respectively. (Although in a univariate analysis there is no significant difference between the groups on this variable, Defensive Self Enhancement does add to the predictive ability of the model after extracting or accounting for the variance associated with the other variables in the model as an incremental explanation of variance.)

Ancillary Results

Participants were recruited from Western medical sites as well as from a Chinese medicine clinic. Out of mere curiosity, the researcher broke down the results by variable by treatment *site* to determine if there was a difference in personality results between

those patients in the HCV group who were being treated at a Chinese medicine clinic compared to those HCV patients who were being treated at a Western medical clinic. This is a site analysis only; consideration should be given to the fact that some participants treated at each of the locations utilize both Western and Eastern treatment modalities. Table 11 shows those results.

Table 11. Variables by Clinic - HCV Group.

Group Statistics

	Site	N	Mean	Std. Deviation	Std. Error Mean
State Anger	Western Med Clinic	71	51.7465	11.47882	1.36229
	Chinese Med Clinic	33	48.9697	9.86308	1.71694
Trait Anger	Western Med Clinic	71	49.9437	10.67960	1.26744
	Chinese Med Clinic	33	47.8788	10.19730	1.77512
Anger Expression Index	Western Med Clinic	71	52.1972	9.93783	1.17940
	Chinese Med Clinic	33	52.0000	11.06797	1.92669
State Anxiety	Western Med Clinic	71	58.0563	15.58835	1.85000
	Chinese Med Clinic	33	55.0000	13.41408	2.33509
Trait Anxiety	Western Med Clinic	71	60.5493	14.58060	1.73040
	Chinese Med Clinic	33	58.2424	12.68126	2.20752
Global Self Esteem	Western Med Clinic	71	49.6056	11.53563	1.36903
	Chinese Med Clinic	33	49.9697	11.06934	1.92692
Self Control	Western Med Clinic	71	52.8873	12.99950	1.54276
	Chinese Med Clinic	33	48.2121	10.90515	1.89834
Identity Integration	Western Med Clinic	71	51.1268	9.69968	1.15114
	Chinese Med Clinic	33	52.8485	9.96281	1.73430
Defensive Self-Enhancement	Western Med Clinic	71	58.9155	10.09066	1.19754
	Chinese Med Clinic	33	52.6667	11.22126	1.95337
Competence	Western Med Clinic	71	49.5634	10.77130	1.27832
	Chinese Med Clinic	33	53.3333	11.42275	1.98845
Lovability	Western Med Clinic	71	50.6761	12.36790	1.46780
	Chinese Med Clinic	33	46.9091	9.95730	1.73334
Personal Power	Western Med Clinic	71	50.6338	9.81724	1.16509
	Chinese Med Clinic	33	53.7576	9.90590	1.72440
Moral Self-approval	Western Med Clinic	71	55.1268	13.95803	1.65651
	Chinese Med Clinic	33	57.8182	11.92281	2.07549
Body Appearance	Western Med Clinic	71	47.7887	10.36328	1.22990
	Chinese Med Clinic	33	49.0303	10.89290	1.89621
Body Functioning	Western Med Clinic	71	40.2958	10.77881	1.27921
	Chinese Med Clinic	33	42.3333	11.64492	2.02712

The Independent Samples Test by Variable - Western medicine vs. Chinese medicine is shown in Table 12.

Table 12. Independent Samples Test by Variable.

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
State Anger	Equal variances assumed	1.198	102	.234	2.77678
Trait Anger	Equal variances assumed	.931	102	.354	2.06487
Anger Expression Index	Equal variances assumed	.091	102	.928	.19718
State Anxiety	Equal variances assumed	.971	102	.334	3.05634
Trait Anxiety	Equal variances assumed	.781	102	.436	2.30687
Global Self Esteem	Equal variances assumed	-.152	102	.880	-.36406
Self Control	Equal variances assumed	1.792	102	.076	4.67520
Identity Integration	Equal variances assumed	-.835	102	.405	-1.72172
Defensive Self-Enhancement	Equal variances assumed	2.836	102	.006	6.24883
Competence	Equal variances assumed	-1.630	102	.106	-3.76995
Lovability	Equal variances assumed	1.533	102	.128	3.76697
Personal Power	Equal variances assumed	-1.506	102	.135	-3.12377
Moral Self-approval	Equal variances assumed	-.957	102	.341	-2.69142
Body Appearance	Equal variances assumed	-.560	102	.577	-1.24157
Body Functioning	Equal variances assumed	-.875	102	.384	-2.03756

As can be seen, those participants who were recruited from Western medical clinics scored higher than their counterparts from the Chinese medical clinic in State Anger, Trait Anger, State Anxiety, Trait Anxiety, Self Control, Defensive Self-Enhancement, Lovability, and Personal Power. Participants recruited from the Chinese medical clinic scored higher than their counterparts from the Western medical clinics in Identity Integration, Competence, Personal Power, Moral Self-Approval, Body Appearance, and Body Functioning. Mean scores for Anger Expression Index and Global Self-Esteem were about the same for both groups.

In terms of significant differences between groups, Defensive Self-Enhancement was significantly higher for the HCV patients recruited from Western medical clinics (p=.006), Self-Control was "marginally" significantly higher among the patients recruited from Western medical clinics (p=.07); and Competence was marginally significantly higher among the patients from the Chinese medicine clinic (p=.10). It could be said that if this had been a one-tail test, clear significance would be seen in these two variables.

In the data-gathering phase of this research study, HCV participants were asked what treatment protocol(s) they were following for their health care. Options were: (a) Western conventional drug therapy (i.e.: Interferon/Ribavirin), (b) Eastern medicine (acupuncture, herbs, meditation, etc.), (c) a combination of Western and Eastern treatment modalities, and (d) no treatment at all. Tables 14, 16, and 18 show that individuals who used a combination of Western and Eastern medicine, i.e.: *integrative medicine*, scored better than did their counterparts on virtually every scale on all three personality inventories – i.e.: lower on the scales of Trait Anger, Anger Expression Index, State Anxiety, Trait Anxiety, and higher on the scales of Global Self-Esteem, Identity Integration,

Competence, Moral Self-Approval, Personal Power, Body Appearance, and Body Functioning.

Table 13. Case Processing Summary - Anger/Anxiety - HCV Group.

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
SAng * TX	104	100.0%	0	.0%	104	100.0%
TAng * TX	104	100.0%	0	.0%	104	100.0%
AXInd * TX	104	100.0%	0	.0%	104	100.0%
SAnx * TX	104	100.0%	0	.0%	104	100.0%
TAnx * TX	104	100.0%	0	.0%	104	100.0%

Table 14. Comparison of Anger and Anxiety Variables by Treatment Type.

Report

TX		SAng	TAng	AXInd	SAnx	TAnx
Western	Mean	51.4706	46.4706	50.6471	54.1176	57.4118
	N	34	34	34	34	34
	Std. Deviation	11.04601	8.39998	9.92970	13.66651	14.77737
None	Mean	51.8333	53.0556	53.3333	61.4722	63.3056
	N	36	36	36	36	36
	Std. Deviation	12.13613	11.62742	9.84451	16.89884	13.88487
TCM	Mean	49.0476	50.1905	54.7619	56.8095	61.6190
	N	21	21	21	21	21
	Std. Deviation	9.89180	10.71270	10.26599	13.30270	10.76790
W/E	Mean	49.5385	44.7692	48.4615	53.1538	53.5385
	N	13	13	13	13	13
	Std. Deviation	10.13752	9.07518	11.66630	13.18361	14.88632
Total	Mean	50.8654	49.2885	52.1346	57.0865	59.8173
	N	104	104	104	104	104
	Std. Deviation	11.02077	10.52383	10.25600	14.93618	13.98596

Table 15. Case Processing Summary GSE, SFC, IDN, DEF, CMP.

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
GSE * TX	104	100.0%	0	.0%	104	100.0%
SFC * TX	104	100.0%	0	.0%	104	100.0%
IDN * TX	104	100.0%	0	.0%	104	100.0%
DEF * TX	104	100.0%	0	.0%	104	100.0%
CMP * TX	104	100.0%	0	.0%	104	100.0%

Table 16. Comparison of Self-Esteem Scales by Treatment Type - Part 1.

Report

TX		GSE	SFC	IDN	DEF	CMP
Western	Mean	49.9118	53.5882	52.4706	61.0588	50.4706
	N	34	34	34	34	34
	Std. Deviation	11.96806	12.40752	10.10621	10.04216	10.93572
None	Mean	48.6944	52.0278	49.7500	56.4167	48.7222
	N	36	36	36	36	36
	Std. Deviation	10.76189	13.88007	9.36673	10.92409	10.74007
TCM	Mean	47.0000	47.7619	52.2381	52.0000	52.5238
	N	21	21	21	21	21
	Std. Deviation	8.63713	10.20247	8.52000	10.25183	11.68169
W/E	Mean	56.4615	49.8462	54.0000	55.5385	54.3077
	N	13	13	13	13	13
	Std. Deviation	13.48218	12.02668	11.91638	10.42925	11.26488
Total	Mean	49.7212	51.4038	51.6731	56.9327	50.7596
	N	104	104	104	104	104
	Std. Deviation	11.33725	12.51292	9.76863	10.81016	11.06775

Table 17. Case Processing Summary LVE, PWR, MOR, BAP, BFN.

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
LVE * TX	104	100.0%	0	.0%	104	100.0%
PWR * TX	104	100.0%	0	.0%	104	100.0%
MOR * TX	104	100.0%	0	.0%	104	100.0%
BAP * TX	104	100.0%	0	.0%	104	100.0%
BFN * TX	104	100.0%	0	.0%	104	100.0%

Table 18. Comparison of Self-Esteem Variables by Treatment Type - Part 2.

Report

TX		LVE	PWR	MOR	BAP	BFN
Western	Mean	51.5882	49.4412	58.5000	46.7059	39.2059
	N	34	34	34	34	34
	Std. Deviation	12.03308	10.96328	13.58531	10.89490	11.19193
None	Mean	49.3611	52.3889	51.8889	48.6111	41.1389
	N	36	36	36	36	36
	Std. Deviation	12.95741	9.03731	13.88479	10.20442	10.58882
TCM	Mean	45.6667	52.0476	56.9524	47.9524	40.7619
	N	21	21	21	21	21
	Std. Deviation	9.64538	9.16229	13.86894	11.06109	11.36180
W/E	Mean	50.4615	54.5385	59.1538	51.2308	45.2308
	N	13	13	13	13	13
	Std. Deviation	10.06326	10.42925	7.61409	9.73956	11.48299
Total	Mean	49.4808	51.6250	55.9808	48.1827	40.9423
	N	104	104	104	104	104
	Std. Deviation	11.74154	9.90556	13.34747	10.49712	11.04521

These findings are discussed in further detail in Chapter 5.

CHAPTER 5:
CONCLUSIONS, DISCUSSION, AND SUGGESTIONS

The concept of total wellness recognizes that our every thought, word, and behavior affects our greater health and well-being. And we, in turn, are affected not only emotionally but also physically and spiritually.

- Greg Anderson

The initial impetus of this research study came from the researcher's attraction to psychoneuroimmunology and Eastern theory relative to disease states as an adjunct to Western medicine; as providing logical, often metaphoric, association with various diseases. The results of this study did show that personality traits, characteristics, and emotions are associated with a specific disease as documented by Western medicine, namely HCV, highlighting that the concepts of Eastern medicine, Western medicine, and psychoneuroimmunology, engaged together, are powerful partners in describing the whole-person approach to illness. Used in concert, this triad could easily make a significant contribution to wellness and understanding disease.

The following discussion will show how the outcome of personality inventories taken by individuals with a medical diagnosis of HCV played into the principles of Eastern tradition and the precepts of psychoneuroimmunology, with specific emphasis on the personality traits named in the hypothesis of this study: anger, anxiety and self-esteem. Ancillary findings are also discussed.

Discussion

As was discussed in Chapter 4 - Results, personality variables as measured by *The State-Trait Anger Expression Inventory*-2™ (STAXI-2™), *The State Trait Anxiety Inventory*, Form Y (STAI), and the *Multidimensional Self-Esteem Inventory* (MSEI),

when assessed by the forced entry method of discriminant analysis, allowed for accurate classification into HCV and Control groups at 79.4%, well beyond chance levels. For a basic comparison of groups, refer to Figure 3, page 49, which shows that with regard to all variables of anger and anxiety, the mean T scores of the HCV group are higher than those of the control group, and as relates to Global Self-Esteem, the mean T scores of the HCV group are lower than those of the control group.

As has been stated, the second, and more optimal way of identifying the variables most predictive of group membership, the stepwise method of variable entry, yielded a four variable model comprised of: Body Functioning, State Anxiety, Defensive Self Enhancement, and Anger Expression Index ($p<.001$). The four variable model matches precisely that which was hypothesized (Refer to Figure 4, page 55). Each variable in this model - Body Functioning, State Anxiety, Defensive Self-Enhancement, and Anger Expression Index – will be discussed in terms of its relevance within the precepts of Western medicine, Eastern medicine, and psychoneuroimmunology.

Four Variable Model - East and West

Body Functioning

It is reasonable to infer that one with a chronic illness would manifest compromised "body functioning"– with or without drug therapy compounding the challenge. O'Brien and Epstein, authors of the MSEI, describe the scale, Body Functioning, as "Well-coordinated, agile, in good physical condition, comfortable with body, enjoys physical activities such as dancing or sports, feels healthy and feels a sense of vitality and vigor in body functioning" on one end of the spectrum (high scores), to "Awkward clumsy, uncoordinated, in poor physical condition, uncomfortable with body, dislikes engaging in

physical activities, feels unhealthy and that body is dull, lifeless and sluggish," on the other end of the spectrum (low scores).[1]

The fact that a scientific measure such as the MSEI showed HCV patients low in body functioning plays into the definition of a compromised liver according to Chinese medicine. Liver function, whether healthy or threatened, manifests at various levels through the body. Leggett (1999) states, "Free flow of movement and all physiological processes are seen as an expression of Liver energy: this includes the supple workings of the joints and musculature as well as the opening and closing of valves or the smoothness of peristaltic movement. Psychologically this is reflected in the free flow of emotions. Mentally this is reflected in an ability to think creatively, transform difficulty, and keep in sight the whole picture."[2]

> Structurally the Liver manifests in those parts of the body which give power, flexibility and grace in movement: the muscles and joints, and their supporting structures: the tendons and ligaments. Strong and flexible joints are essential for coordination and ease of movement. The Liver supplies Blood and, through the action of its …partner, the Gall Bladder, supplies Qi to the joints and helps to lubricate all movement.
>
> The Liver's coordinating action is also expressed through the nervous system: the smooth, efficient action of neurons and chemical messengers may be seen as the Liver smoothing the flow of Qi. Awkward physical movement and disrupted internal movement may be seen in part as disharmony in the Liver's realm.
>
> The Liver has a close relationship with the Spleen, and constrained Liver energy easily influences the digestion. The Liver also governs the diaphragm whose action largely determines the smoothness of the digestive process as well as the efficiency of the lungs...[3]

Anxiety

Very much related to the compromised liver according to the theory of Chinese medicine is the state of anxiety. According to Beinfield and Korngold (1991), one of the contradictions of the "liver personality" (Wood) is the feeling of invincibility, yet the fear of vulnerability and loss of control.[4] With fear and vulnerability of loss of control comes anxiety. Moreover, it is important to remember that according to Chinese theory the organs of the body represent a series of bodily functions – at, in, and around them – rather than a single organ. In that vein, Leggett (1999) states, "Psychologically, the Liver organizes us towards the realization of our potential helping us to manifest the potential for growth stored in the Kidney."[5] The emotions thought to correlate with the Kidneys are fear, fright, and anxiety.[6]

Anxiety, as an emotion, is difficult to define, though simply stated by Philip Lichtenberg (1957), anxiety is fear without "specific conscious stimulus."[7] Spielberger (1983) describes anxiety states as being "characterized by subjective feelings of tension, apprehension, nervousness, and worry, and by activation or arousal of the autonomic nervous system."[8] Further, he likens State Anxiety to "kinetic energy" that "refers to a palpable reaction or process taking place at a given time and level of intensity."[9]

Repeating earlier statements, the S-Anxiety scale of the *State-Trait Anxiety Inventory* evaluates how respondents feel "right now, at this moment, and the T-Anxiety scale assesses how respondents "generally" feel and "implies differences between people in the disposition to respond to stressful situations with varying amounts of S-Anxiety."[10] Therefore, State-Anxiety, as "situational" anxiety, occurs when an individual is not in control of a situation, causing nervousness, worry and agitation. Recall the description of

the individual with liver disease (Chapter 2) as needing to be in control, particularly as relates to the structuring of potential into experience – what has been called the "plan" of one's life. "The liver bears the brunt of our 'worry' – obsessing over the Plan and the countless ways it might miscarry."[11]

It could be said that chronic illness renders individuals somewhat powerless over their own health, so it is reasonable that they would attempt to control other facets of their lives that they perceive can be controlled. When a situation arises that is out of their control, is not routine, or is somewhat threatening, anxiety can occur. This measure of anxiety is *State Anxiety* as dubbed by the STAI. While scores on this scale can be influenced by emotions related to the current situations like divorce, illness, or drug-related therapy, the scores most likely adversely affected would be those of Trait Anxiety – how one feels "in general," rather than state-specific anxiety.

With reference to the intricacy of the body and organs under theory of Chinese medicine, the blood, too, plays a role in liver disease by distributing the spirit, or Qi. As stated in Chapter 2, "Through the task of holding and releasing the *Blood*, the *Liver* spreads the Qi."[12] Therefore, not only has the virus compromised the liver, it has compromised the Qi, or spirit, manifesting in the psyche as "agitation, nervous tension, suppressed emotion, and frustration."[13] That is particularly fitting to the study of HCV, because according to Western medicine, HCV is introduced to the body by way of the blood. The HCV virus enters the blood, and "Renewal of the Blood is dependent on the power of the Liver which is said to store the Blood. In Western medicine, blood is known to be the carrier of neuropeptides…In Chinese medicine, Blood is seen as housing the Mind as the home of consciousness…and weakness of the Blood can also mean that

consciousness loses its mooring, that the Mind floats restlessly out of the body giving rise to…feelings of anxiety."[14]

Self-Esteem

While the variable of Global Self-Esteem of the MSEI did not fit into the four-variable model, per se, one of the other major elements of its self-esteem model did. This scale is termed Defensive Self-Enhancement and is one of the three major scales, along with Global Self-Esteem and Identity Integration. These scales are fully defined in Appendix A.

O'Brien and Epstein define Defensive Self-Enhancement as a "validity measure to provide important information on the degree to which a person is defensively inflating his or her self-presentation."[15] The two ends of the spectrum show an individual who is "Defensive, overly inflated view of self-worth, claims to possess highly unlikely positive qualities, denies ubiquitous human weakness" on the one hand, and one who is "Open, nondefensive evaluation of self-worth, makes no claims of rare virtues, and acknowledges common human weakness" on the other.[16]

One of the functions of the liver according to theory of Chinese medicine is to store the "'Non-Corporeal Soul (Hun).'[17]Because the Non-Corporeal Soul is responsible for human kindness or benevolence, it is sensitive to the boundaries that make for the recognition of self and others…When the Hun is insufficiently assertive, it can lead to a lack of self-worth or self-esteem,"[18] in this case defensiveness and denial of weakness. This individual portrays a self-image out of alignment with reality. "Defensiveness can be manifested in a bewildering number of ways - e.g., compensation, projection, denial, reaction formation, selective attention."[19]

As mentioned in Chapter 2, according to Eastern tradition, the liver resides in the third chakra of the body, and psychological threats to this chakra include issues of self-esteem, self-confidence, self-respect, sensitivity to criticism, and fear of intimidation.[20] "This energy center relates most strongly to the belief patterns we hold about ourselves, including our physical appearance, intelligence, physical abilities, and skills…In short, this chakra is the center of our self-esteem…"[21] (See also, Appendix A for definitions of Body Appearance, Competence, and Bodily Functioning.)

As discussed in Chapter 3, the researcher interviewed all HCV participants personally. At the time of these interviews, the researcher was convinced that the HCV participants seemed quite "healthy" in terms of anger, anxiety, and self-esteem, and preliminarily predicted that there would be no difference between the HCV group and the control group in these areas. After the personality inventories were scored, it was seen that, in fact, that was not the case. This was perhaps blocked self-awareness, denial or "defensive self-enhancement" at its best: the HCV participants may have been attempting to cover all traces of anger, anxiety, and low self-esteem.

Anger Expression

The liver "gives us the desire to assert who we are and express our creative energy in the world. The liver drives us along the path to self-realisation, determined that we grow. When this force is obstructed, anger is the natural result."[22] Further elaboration according to Chinese theory is that the liver stores and distributes blood, and this regulation process determines the quantity and pressure of the blood in the physical body and the evenness of emotion and consistency of behavior in the feeling body. When this

process is jeopardized, "erratic activity in the body and *a volatile temperament*" ensues (italics added for emphasis).[23]

Anger Expression (AX-Index), as a scale of the STAXI-2, is an abridgment of anger in its various forms – the feeling of anger (State Anger), the temperament or reaction to anger (Trait Anger), and the expression and control of anger, both inwardly and outwardly. For that reason, it is perhaps the best over-all measure of anger as relates to this particular inventory. As has been noted, *Anger Expression Index* is a part of the HCV four-variable HCV model, and with respect to its definition, Spielberger (1999) states:

> Persons with high AX Index scores experience intense angry feelings, which may be suppressed or expressed in aggressive behavior, or both. An individual's most frequent mode of anger expression can be inferred from the relative elevations in that person's AX-I and AX-O scores. Persons with high AX Index scores whose AX-O and AX-I scores also are elevated are likely to experience difficulty in interpersonal relationships and are at *greater risk for developing medical disorders* (italics added for emphasis).[24]

The scale, *Anger Expression Index* (AX-Index), is based on a formula of the following components:

AX Index = AX-O + AX-I - (AC-O + AC-I) + 48. (48 is included in the formula to eliminate negative numbers), and the definition of each component is as follows:

> **Anger Expression-Out** (AX-O): Measures how often angry feelings are expressed in verbally or physically aggressive behavior.
>
> **Anger Expression-In** (AX-I): Measures how often angry feelings are experienced but not expressed (suppressed).
>
> **Anger Control-Out** (AC-O): Measures how often a person controls the outward expression of angry feelings
>
> **Anger Control-In** (AC-I): Measures how often a person attempts to control angry feelings by calming down or cooling off.

Anger Expression Index: Provides a general index of anger expression based on responses to the **AX-O**, **AX-I**, **AC-O**, and **AC-I** items.[25]

To summarize, *Anger Expression Index* provides an overall measure of anger – the emotion, feel (*State Anger*), the temperament, reaction (*Trait Anger*), and the expression and control of anger [*Anger Expression* and *Anger Control*, differentiating between the suppression of angry feelings (anger-in) and the expression of anger toward other persons or objects (anger-out)].[26] As can be seen in Figure 5, the scores of the participants in the HCV group were considerably higher than those participants in the control group relative to the Anger Expression Index.

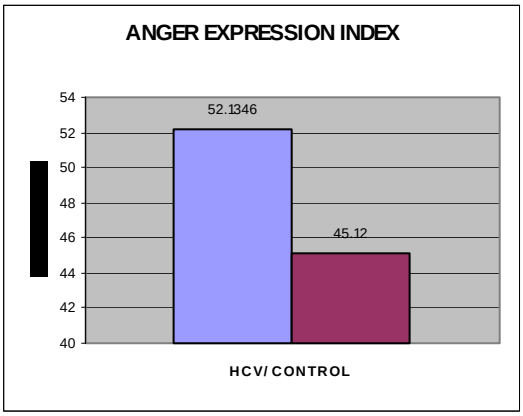

Figure 5. Anger Expression Index, A Comparison.

It should be noted that 26% of the HCV group participants showed results with high AX Index scores coupled with high AX-O and AX-I scores, putting them at "greater risk for developing medical disorders."[27] Only 4% of the Control group had such scores.

Four Variable Model as Seen Through the Eyes of Psychoneuroimmunology

As discussed in Chapter 2, the key to unlocking the mystery of how personality traits affect the liver – and vice versa – may lie with the condition of the immune system as the direct object of individual coping skills and the ability or inability to handle the stressors – including negative emotions – of life. Such stressors to the immune system can be the emotions of anger, anxiety, and low self-esteem, themselves, and they can render the immune system the weak link of the body allowing potential invaders, i.e. a virus of the liver, to take over. HCV and drug therapy taken in an effort to treat it, add to the cycle allowing the possible exacerbation of anger, anxiety and low self-esteem – that in turn add to the severity of the liver disease. This cyclical pattern will be discussed in further detail under **Conclusions**, this chapter.

Recall the discussion in Chapter 2 relative to the production of proinflammatory and anti-inflammatory cytokines that influence a host of medical conditions that can be directly stimulated by negative emotions and stressful experiences. With specific reference to *body functioning*, Kiecolt-Glaser, etal. (2002) cite research by Hamerman (1999) and Taaffe etal. (2000) showing that "chronic inflammation has been suggested as one key biological mechanism that may fuel declines in physical function leading to frailty, disability, and ultimately death.[28] They also refer to research of Ferrucci, etal. (1999) linking the release of cytokines with disability and muscle atrophy, so it is reasonable to suggest that there is more to loss of body function than disease and drug therapy; that emotions play a role as well.

Skeptics could easily argue that the anger and anxiety components of the "HCV personality," as with body functioning, are merely inherent to the disease and/or its drug

treatment protocol, giving no credence to the power of anger and anxiety as contributing to, or exacerbating the disease. As has been shown immunological factors are involved in stress-related processes that link personality to physical disease, so the notion that emotions such as *anger* and *anxiety* provoke the release of pituitary and adrenal hormones that have multiples effects on the body, including alterations in immune function is logical. *Anxiety*, for example, "can activate the sympathetic-pituitary-adrenocortical (HPA) axis."[29] "Numerous studies have suggested that a variety of emotion-responsive hormones including the catecholamines (norepinephrine and epinephrine), adrenocorticotropin hormone, cortisol, growth hormone, and prolactin can impel quantitative and qualitative changes in immune function…"[30]

Why HCV? A Closer Look

HCV, specifically, was chosen for this study rather than "general" liver disease (including such notables as autoimmune liver disease, fatty liver, alcohol-induced liver disease, cirrhosis, Wilson's disease, and liver cancer) because of its behavioral aspect (generally construed as "at risk behavior") versus a liver disease with a genetic component. Note: At-risk behavior in this context incorporates all behaviors and emotions injurious to the individual. HCV is considered a disease that is introduced to the body from "external sources."

The hepatitis A virus generally enters the body by the ingestion of contaminated food or drink. From the standpoint of Western medicine the manifestation of the hepatitis viruses B (HBV), C (HCV), and D (HDV), is based on a virus entering the body, in some cases as a result of behavior. In humans, hepatitis D virus infection only occurs in the presence of hepatitis B infection. The hepatitis viruses, for the sake of this discussion,

then, are behaviorally based, notwithstanding a potential genetic influence on the immune system. The hepatitis D virus is replication-defective and therefore cannot propagate in the absence of another virus, [31]so hepatitis A and hepatitis D, along with the other forms of liver disease were ruled out for the purposes of this study.

Both HBV and HCV are transmitted blood-to-blood, but HBV is the virus of the two shown to be more commonly transmitted through sexual activity. While HCV and HBV appear to be similar, they have significant differences. HCV is an RNA virus; HBV is a DNA virus. Some RNA viruses (also known as retroviruses) including HIV, and DNA viruses have very different ways of reproducing themselves, but they frequently integrate their own genome into that of the "host" cell. When the immune system is compromised, the HCV virus is able to enter and take over, analogous to a large corporation with a weak infrastructure being taken over by corporate raiders. These invaders enter and totally change the "corporate culture."

This process, too, is reminiscent of the concept of psychoneuroimmunology as stated in Chapter 2. Metaphoric of the virus making its way into the host cell, "molecules of emotion," diffuse through the fluids surrounding each cell of the body and bind themselves via ligand (neurotransmitter, steroid, and/or peptide) to its own specific receptor on the surface of a cell. The receptor then transmits the ligand from the surface of the cell, deep into the cell's interior, where the message can change the state of the cell dramatically.[32]

The HCV virus is a fragile virus that is single stranded, unstable, does not integrate, and relishes taking up residency in the liver. The HBV virus is not fragile, is partially double stranded, stable, and may integrate or sequester in various areas of the body.

HCV is a fragile virus and therefore easily destroyed; able to live only a few hours outside of the body, and it is classified as unstable. A stable virus, like HBV, has a relatively small number of genetic mutations among its strains and does not mutate at a high rate. (Of note, it is easier to develop a vaccine against a stable virus than one that mutates frequently. Testament to that is the fact that there is an effective vaccine available for the prevention of HBV infection while there has been no vaccine yet developed for HCV.)

Paring down liver disease from general terms to specific, then, HCV is well-suited to stand up to analysis by the precepts of both Eastern medicine and psychoneuro-immunology. It has a life of its own (it is not genetic, does not integrate, is unstable and mutates) and is elusive; difficult to "trap." Again from a metaphoric standpoint, the hepatitis C virus is *unstable and out of control* – similar to a descriptive used in Chinese medicine to describe the compromised Wood personality: the individual wants to be in charge but misses the companionship of equals, yearns to act but subject to uncontrollable impulse, makes rules but likes to break them, demands freedom but needs to struggle, feels invincible but fears vulnerability and loss of control.[33]

Additional Findings

As discussed in Chapter 4, Results, HCV participants were asked during the data-gathering phase of this research study about the treatment protocol(s) they were following for their health care. Options were: (a) Western conventional drug therapy (i.e.: Interferon/Ribavirin), (b) Eastern medicine (acupuncture, herbs, meditation, etc.), (c) a combination of Western and Eastern treatment modalities, and (d) no treatment at all.

Figures 6 through 16 show that individuals who used a combination of Western and Eastern medicine, i.e.: *integrative medicine*, scored better – i.e.: higher or lower depending on the scale – than did their counterparts on virtually every scale on all three personality inventories: lower on Trait Anger, Anger Expression Index, State Anxiety, Trait Anxiety; and higher on Global Self-Esteem, Identity Integration, Competence, Moral Self-Approval, Personal Power, Body Appearance, and Body Functioning. Perhaps the fact that these participants were receptive to different healing modalities reflects openness to possibility; a willingness to do whatever is needed to be well. Perhaps it translates to individuals who are less angry, anxious, and more comfortable with themselves; or perhaps the reverse is true: that because they are less angry and anxious, they are more receptive to different healing modalities – or again, perhaps due to cause and effect, both statements are true.

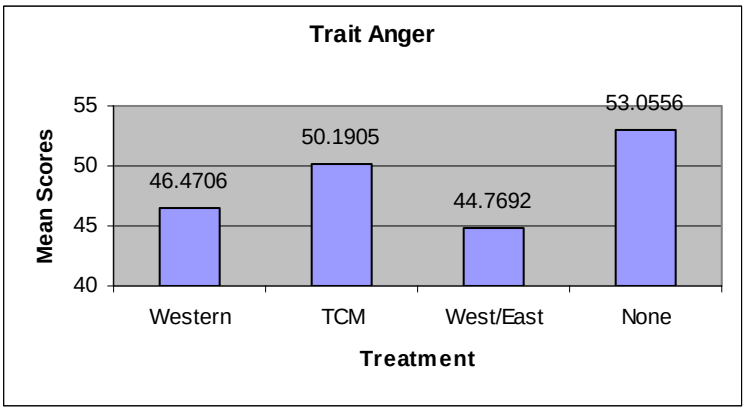

Figure 6. Trait Anger by Treatment Modality.

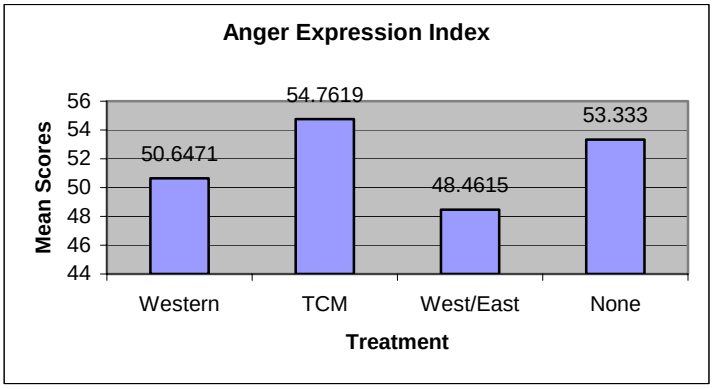

Figure 7. Anger Expression Index by Treatment Modality.

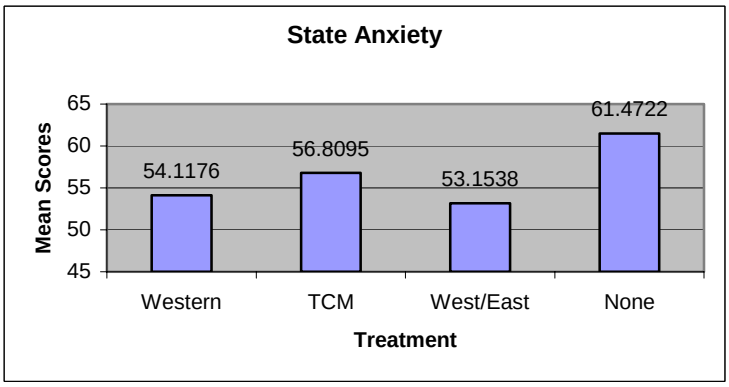

Figure 8. State Anxiety by Treatment Modality.

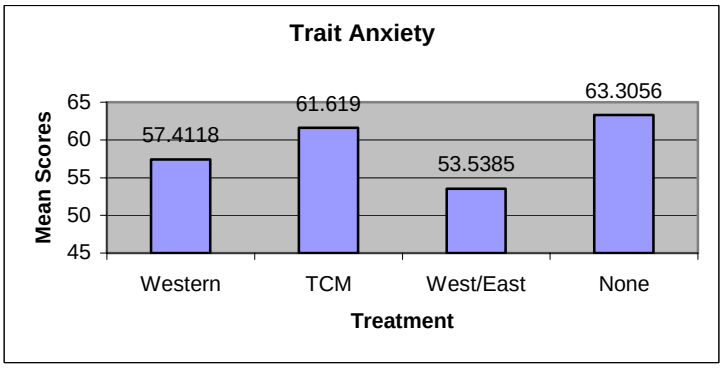

Figure 9. Trait Anxiety by Treatment Modality.

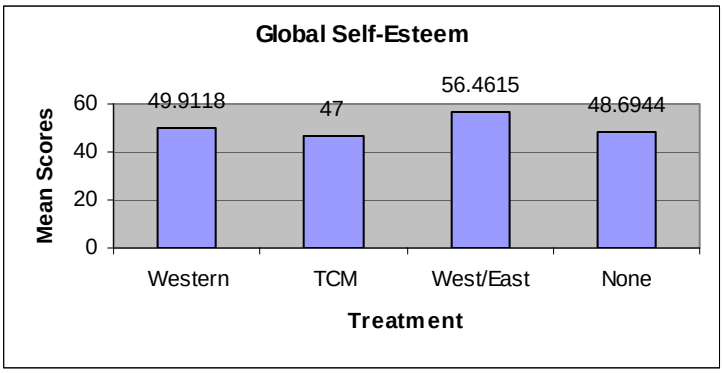

Figure 10. Global Self-Esteem by Treatment Modality

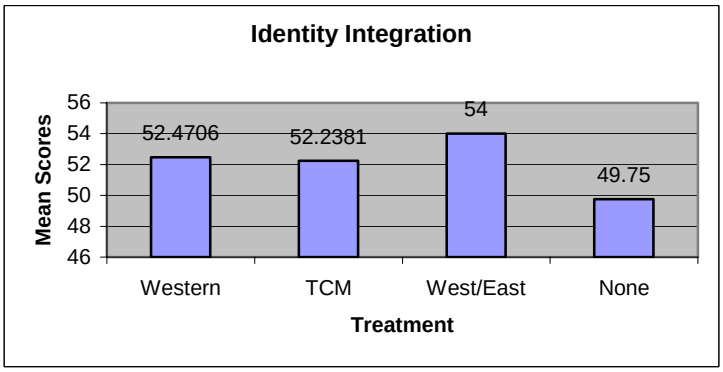

Figure 11. Identity Integration by Treatment Modality.

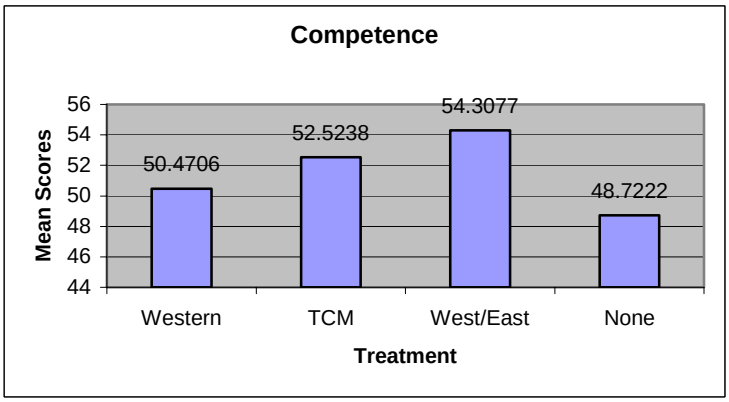

Figure 12. Competence by Treatment Modality.

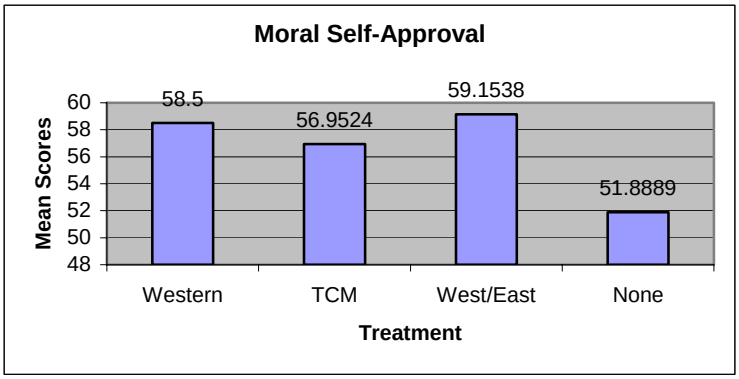

Figure 13. Moral Self-Approval by Treatment Modality

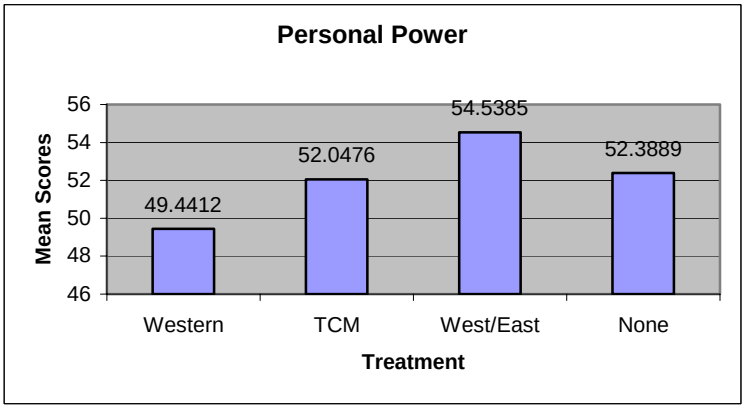

Figure 14. Personal Power by Treatment Modality

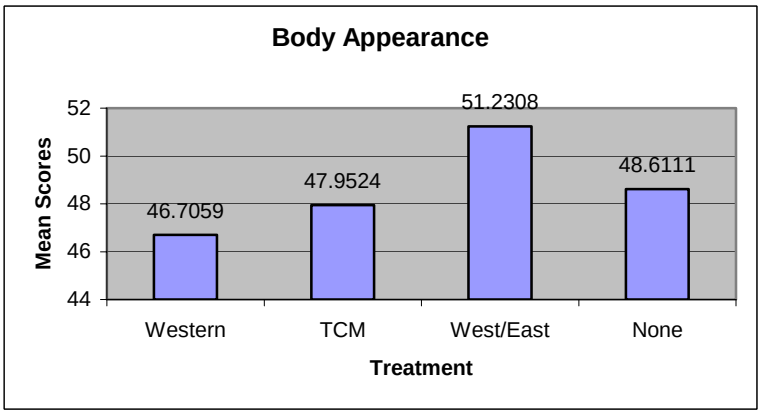

Figure 15. Body Appearance by Treatment Modality.

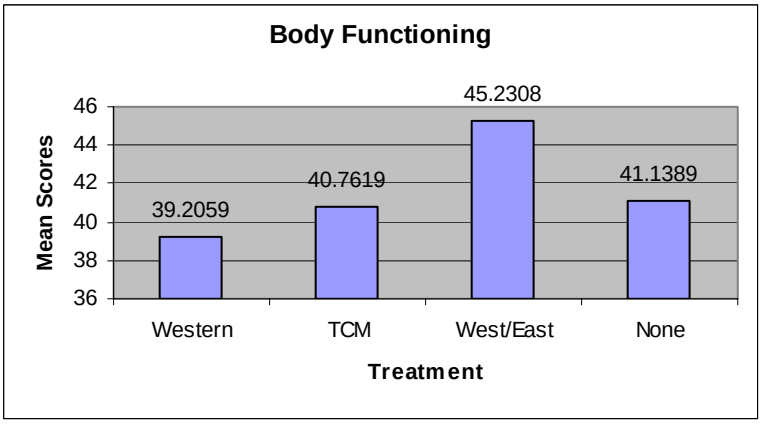

Figure 16. Body Functioning by Treatment Modality.

According to Figure 16, those being treated with Western drug therapy, alone, scored the lowest on the scale of Body Functioning, as would be expected.

Those individuals whose choice of treatment was Chinese medicine, alone, scored lowest in State Anger and Self-Control, and highest in Lovability as seen in Figures 17-19.

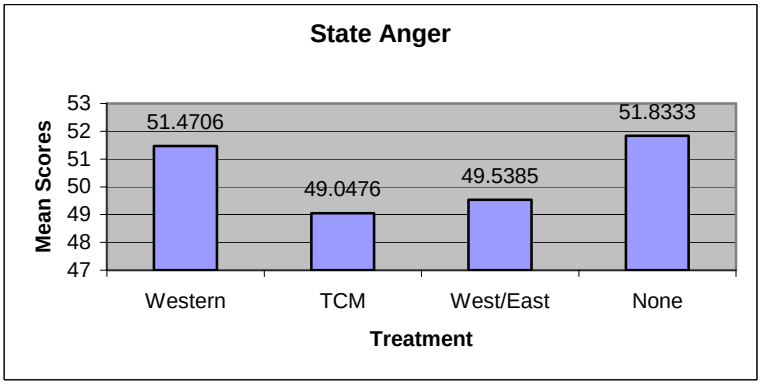

Figure 17. State Anger by Treatment Modality.

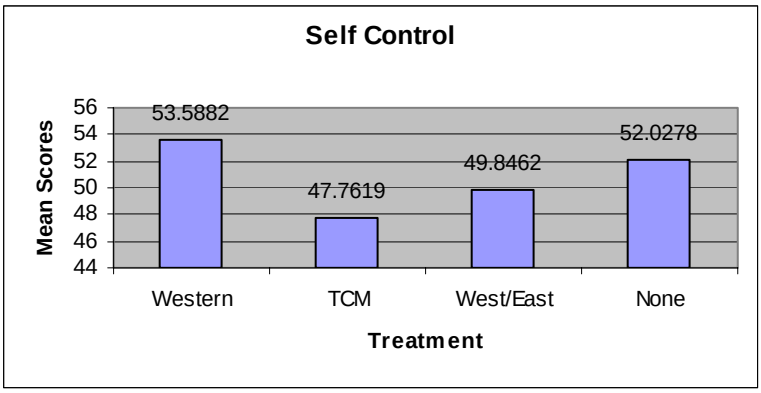

Figure 18. Self-Control by Treatment Modality.

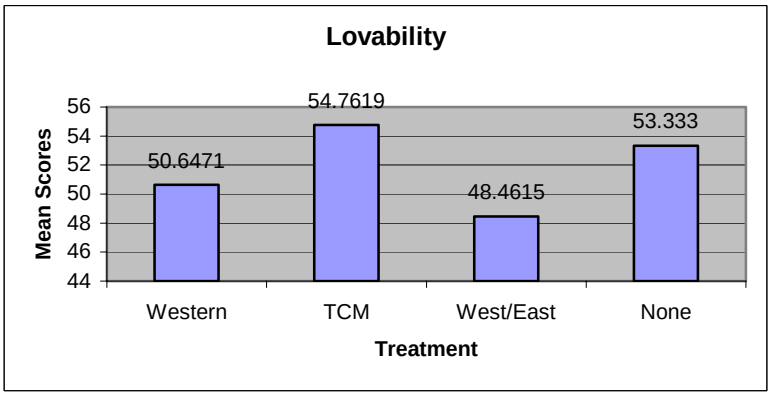

Figure 19. Lovability by Treatment Modality.

On the scale of Defensive Self-Enhancement, those who were being treated with Western medical drug therapy, scored quite high as shown on Figure 20.

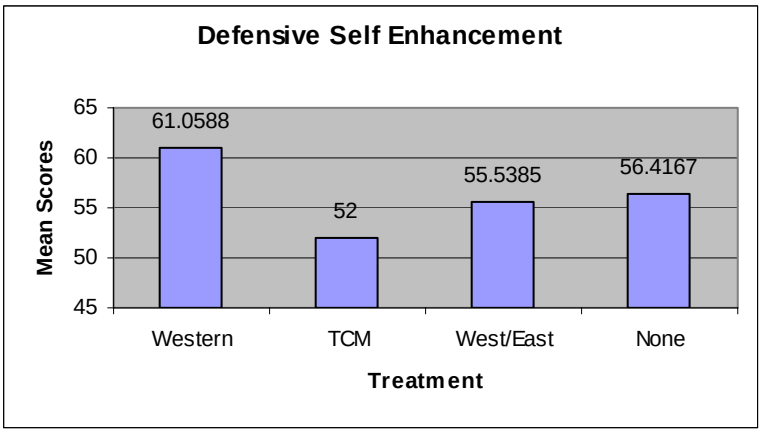

Figure 20. Defensive Self-Enhancement by Treatment Modality.

Participants undergoing treatment under Western medical protocol produced a mean score of 61.0588, while the mean score of those participants undergoing Chinese medical treatments was 52. Conjecture might suggest that individuals undergoing Chinese treatment for HCV are simply more open, in tune with their feelings and behaviors, and are able, or more inclined, to express more freely their emotions than those undergoing drug protocol of Western medicine.

As was discussed in Chapter 4, participants were recruited from Western medical clinics as well as from a Chinese medicine clinic, and in an attempt to uncover all relevant details, results were broken down by variable by treatment *site* to determine if there was a difference in personality results between those patients in the HCV group who were being treated at a Chinese medicine clinic compared to those HCV patients who were being treated at a Western medical clinic (understanding that there were participants at each clinic utilizing both treatment modalities).

Counter to what was depicted by Figures 6-16 – showing that individuals undergoing the treatment modalities of Chinese medicine scored higher than their Western treatment

counterparts in Trait Anger, Anger Expression Index, State Anxiety, and Trait Anxiety – those participants recruited from the Chinese medicine clinic actually scored *lower* than those participants recruited from Western medical clinics with regard to these same variables, including State Anger. With regard to self-esteem scales, they scored higher in Identity Integration, Competence, Moral Self-Approval, Personal Power, Body Appearance, and Body Functioning, and lower in Self-Control, Lovability and Defensive Self-Enhancement than those patients recruited from Western clinics. Scores between the two sites relative to Anger Expression Index and Global Self-Esteem were about the same. Keep in mind that these numbers reflect recruiting site information only and do not necessarily translate to treatment modality. While it could be inferred from this discussion that patients who seek treatment from a Chinese medicine clinic have healthier levels of anger, anxiety, and self-esteem, either by nature, or as a result of treatment received, that inference is in direct conflict with the outcomes of those variables by treatment modalities, most likely due in large part to the fact that there are participants recruited from the Chinese medicine clinic who also seek treatment at a Western medical clinic, and vice versa, perhaps once again pointing to, and highlighting the power of integrative medicine.

A Final Thought

It is natural to conclude that all three personality characteristics – high levels of anger and anxiety, and low levels of self-esteem – are to be expected in an individual with HCV, particularly in an individual undergoing the drug treatment protocol of Interferon and Ribavirin, given their inherent side effects. *In fact*, however, and extremely noteworthy, is that scores on all anger variables – State Anger, Trait Anger,

and Anger Expression Index, and both anxiety variables –State Anxiety and Trait Anxiety – show that those participants undergoing Western treatment actually scored *lower* than their counterparts who were not undergoing treatment of any kind, suggesting that Western treatment cannot be singled out as *the* reason for Anger or Anxiety (See Figure 21). Mean scores for Western Treatment versus no treatment are as follows: State Anger: 51.4706 versus 51.8333, Trait Anger: 46.4706 versus 53.0556, Anger Expression Index: 50.6471 versus 53.333, State Anxiety: 54.1176 versus 61.4722, and Trait Anxiety: 57.4118 versus 63.3056.

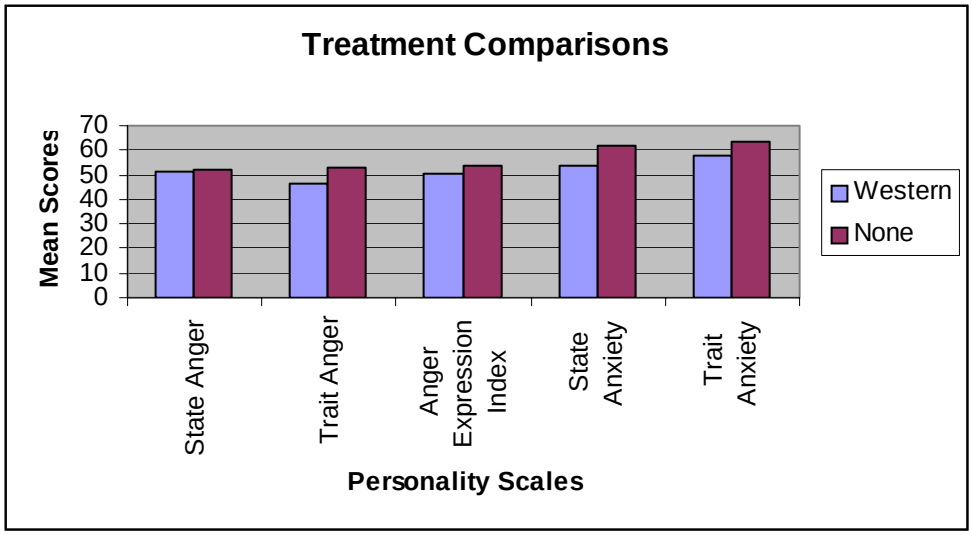

Figure 21. All Anger and Anxiety Scales by Treatment Modality.

Additionally, HCV individuals undergoing Western drug therapy actually scored higher on Global Self-Esteem, Identity Integration, Competence, Moral Self-Approval, and Self-Control than did their counterparts who are not undergoing any type of treatment for their disease as shown by Figure 22.

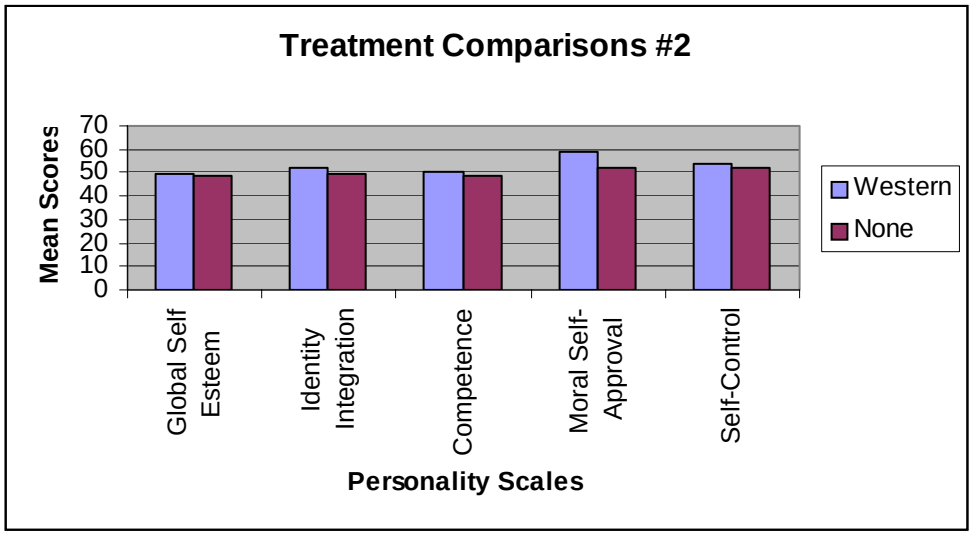

Figure 22. Self-Esteem Scales and Sub-Scales by Treatment Modality.

There were 34 individuals of the 104 (32.6%) HCV participants who were undergoing drug therapy according to Western medicine (solely), and 36 of the 104 (34.6%) who were not undergoing any type of treatment for their disease, so the comparison of these two subgroups of the HCV group is fairly balanced. The remaining participants were either utilizing Chinese medicine healing modalities or a combination of Western and Chinese medicine.

Side effects of the disease state, itself, are real and cannot be overlooked; yet the degree to which they impact the individual's personality cannot be proven given the study's parameters. "Distressed individuals are more likely to have health habits that put them at greater risk, including poorer sleep, a greater propensity for alcohol and drug abuse, poorer nutrition, and less exercise."[34] These behaviors can have immunological consequences. That in mind, it is also worthy to stress the power of psychoneuroimmunology from a positive perspective and its constructive power on the

immune system as well, as shown by the fact that it is possible for individuals with HCV to clear the virus. It is particularly significant to note that not everyone exposed to the virus presents with it.

Summary

There is no question that there is a behavioral element and a body/mind/immune system component to illness and health. The arguments presented are compelling. Moreover it is reasonable to believe that no one is exempt from the potential experience of anger, anxiety, and low self-esteem. How individuals *choose* to react to these situations, emotions and behaviors – i.e.: through their individual coping mechanisms – is key to whether or not these emotions are harmful to them.

Very much in line with the "coping mechanism" theory, the *Nei Jing* says, "The Liver is the foundation of curtailing extremes,"[35] the balancer of emotions. Particularly relevant to the states of body functioning, anger expression, anxiety, and defensive self-enhancement, is the statement: "The assertive power of the Liver is balanced by flexibility, by suppleness in one's approach to a situation. The Liver gives the ability to yield when appropriate. Just as we need to be physically supple, a psychological suppleness helps us to get what we want and gracefully accept when we cannot. *We need to be able to bend without snapping* (italics added for emphasis),"[36]as does the willow tree – symbolic of the Organ of Wood element: pliant, resilient and powerful in its growth.[37] "At both the physical and emotional level the Liver gives us willow-like power and flexibility…It is…a power for effective action for which a tough kind of pliancy is

vital."[38] When pliancy, resilience, and power are threatened, anger, anxiety, and the perceived need for defensive self-enhancement may arise – and vice versa.

While this research has addressed only three personality characteristics and compared them to the philosophy of Chinese medicine relative to liver disease, these same characteristics could easily be linked to many of the other descriptives used by Chinese tradition. To repeat, additional traits and tendencies of personality that correspond to liver disease are: domination of power (control), addiction, arrogance; reckless, antagonistic, compulsive, impulsive, and confrontational behavior.[39] This individual has difficulty with intensity, restraint, and anger.[40] The compromised Wood personality as described on page 20 includes language such as "aggressive, hostile, intolerant, a compulsion to work, a loss of judgment, the need for stimulants and sedatives." This personality "yearns to act but is subject to uncontrollable impulse, makes rules but likes to break them, demands freedom but needs to struggle, and feels invincible but fears vulnerability and loss of control.[41]

Perhaps it can be said more explicitly that the common denominator of the behaviors of HCV personalities is their inability to *cope*, aided and abetted by their inability to *control* – their illness, specifically, and various aspects of, and situations and people in their lives, in general. It is conceivable that these individuals cannot cope with the fact that they cannot be in control. Their *control is threatened*, they want to be in control, and as a result, they are *out of control*. These individuals attempt to control what others think of them, portraying an overly inflated view of self-worth (Defensive Self-Enhancement). When they cannot control a given situation, or when their coping skills are compromised, they become anxious (State Anxiety) and frequently experience intense angry feelings

(Anger Expression Index). To be clear, *this is not the profile of every individual with HCV*. This research, however, has clearly shown an HCV personality type significantly different than that of an individual without liver disease.

Recall the discussion of the chakras, or energy centers of the body, from the standpoint of Eastern medicine; the fact that the liver resides in the third chakra, one's "personal power center, the magnetic core of the personality."[42] Myss (1996) states, "The illnesses that originate here are activated by issues related to self-responsibility, self-esteem, fear of rejection, and an oversensitivity to criticism."[43] The individual who fears rejection and/or is oversensitive to criticism could easily display defensive self-enhancement, anxiety, and anger. As previously noted, the individual with HCV is oftentimes a perfectionist or an addictive personality. Perfectionism is a form of control, and escaping one's reality by stimulants, sedatives, and addictive behaviors (including workaholism) can be a preferable alternative to the challenges of *real* life – a form of control that can lead to an out of control situation.

It is with some frequency that individuals with HCV carry a stigma associated with drug use and are merely considered "addictive" personalities who have made bad choices. In this study, virtually 50% of the participants in the HCV group who contracted HCV admitted to being exposed to the virus through needle injection/drug use. While characteristics such as control, and reckless, impulsive behavior come to mind, a broader description of these individuals is fitting and more equitable. As has been shown, the inference could be potential self-esteem issues, the display of defensive self-enhancement, and/or acting out of anger, *and* anxiety. These traits are tightly interwoven

– and encompass many other behaviors – both from a Western and an Eastern perspective.

Conclusions

The goal of this research was to determine whether a configuration of personality traits – specifically anger, anxiety, and low self-esteem – exists common to individuals with HCV and to analyze the potential association of these traits relative to the existence and/or exacerbation of the disease. This research successfully – and significantly – fulfilled that goal. What has emerged is the picture of an individual with HCV who has a higher than normal level of anger expression, a higher than normal level of state anxiety, and a higher than normal level defensive self-enhancement, as a sub-set of self-esteem.

This study does not suggest that the personality components of anger, anxiety and self-esteem are the direct "cause" of HCV, but correlation is clear. Well taken is the adage, "The invalid assumption that correlation implies cause is probably among the two or three most serious and common errors of human reasoning."[44] And in line with the introductory quotation in Chapter 1, each variable in any system does interact with the other variables so thoroughly that cause and effect cannot be separated. It is insufficient to say that one's behavior has merely threatened the liver, because the compromised liver also exacerbates the behavior, demonstrating that illness represents a cycle of compromised soma, psyche, and personality.

The process is not one-directional, for the diseased liver, in turn, radiates its toxins outwardly to the personality. Conversely, a positive personality bolsters the immune system, and vice versa. Of major significance to this discussion is the fact that there are those who manage to stave off the ravages of HCV. There are individuals shown to have

HCV virus in the blood, post exposure, but hepatitis does not develop, no immune response is seen, and virus clearance takes place.[45] There are other individuals in whom, post exposure, the hepatitis virus is not seen at all. Western medicine does not have an answer for this phenomenon, but from the standpoint of Eastern tradition and psychoneuroimmunology, the explanation is clear.

There is no question that one's roots, whether speaking of immunological disease-fighting deficiencies or one's personality, contribute to illness and health of the *whole* person. As has been said, disease, according to the scientist is a function of an immune or biological component; disease to Eastern tradition is influenced by behaviors, attitudes, and beliefs; and the mores of psychoneuroimmunology combine both. Figure 23, next page, shows that the three are inexorably intertwined.

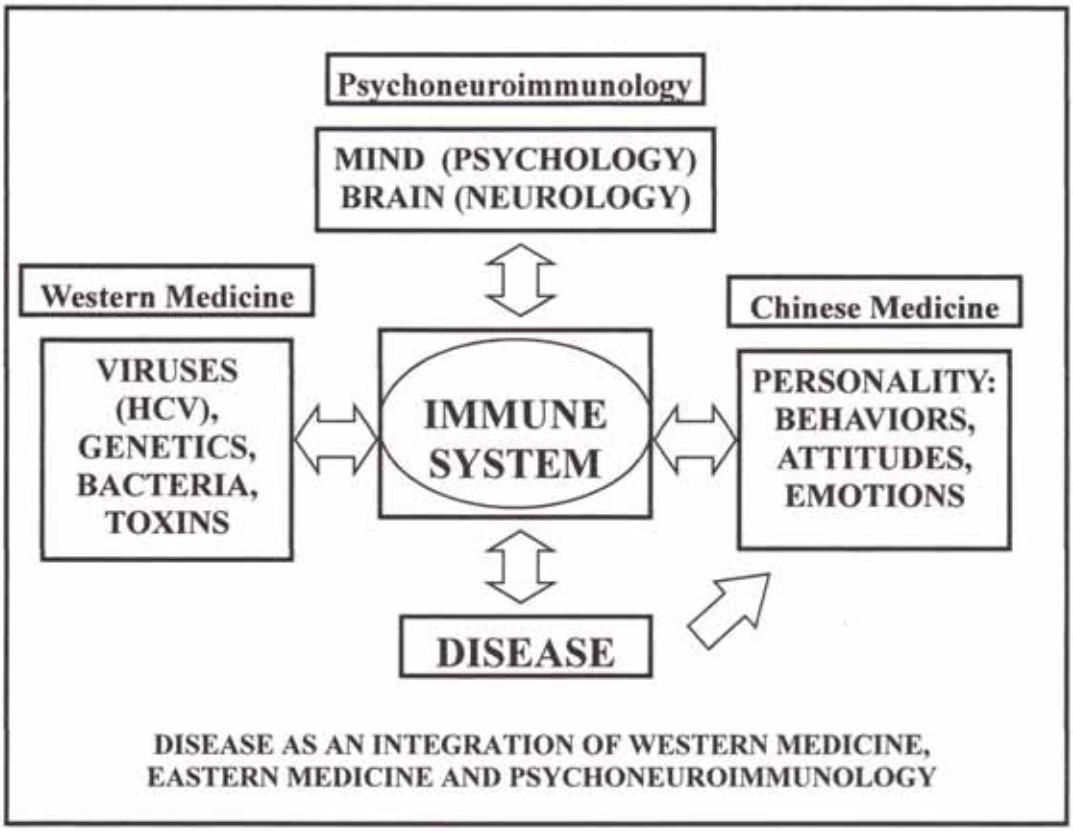

Figure 23. Integration of the Three Mores

Suggestions for Future Research

Based on the findings of this research, it would be interesting to conduct a study to determine if individuals at risk, according to this study cohort, may actually acquire HCV infection at a higher rate than people without this personality profile. It would be necessary, however, to follow a group of individuals prior to the onset of HCV virus. In that vein, one of the limitations of this study was that it had no pre-disease measurements of the participants, and admittedly that would be virtually impossible to accomplish unless individuals were followed for a number of years. Important information to have

would be: how the HCV participant "looked" before onset HCV in terms of these personality variables. A long-term study would be required to determine those answers. It would also be interesting to track, over time, those individuals in the control group of this study, particularly those who had high scores in anger and anxiety and low scores in the self-esteem measures in an effort to see if liver disease, specifically HCV, does ultimately present.

In the case of future research in line with this study, if expense were not a consideration, it would be helpful to have individuals in the control group pre-tested for HCV to determine if they have the virus prior to inclusion. Because HCV is largely asymtomatic, potentially for decades, there may be individuals in the control group, this study, who have HCV and do not know it. In addition to tracking the control group, it would be interesting to follow the HCV group to determine the number or percentage of individuals who clear the virus. It would also be helpful to know to the modality of healing to which they attributed clearance.

Gender and educational demographics are noted in this study but were determined irrelevant to its outcome. Perhaps it would be worthy to delve deeper to establish if, and to what degree, these aspects of the individual influence levels of anger, anxiety, and self-esteem. Research, too, has shown that there are potential differences in well-being and health outcomes that may derive from socioeconomic status, and racial and ethnic influences, so those factors could be included and measured in a future study. It has been seen that "racial and ethnic disparities in morbidity and mortality exist in a number of health-related conditions, including cancer…HIV, and preventable infectious illness…all of which involve the immune system,"[46]

A cautionary note, perhaps beneficial in the usage of personality inventories, particularly as relates to inventories that ask sensitive questions to which candid answers are essential: one of the most important considerations is that rapport and trust must be established, pre-testing, between researcher and participant in order that the participant feel safe enough to answer personal questions honestly and appropriately to avoid confounding the results.

Finally, it would be interesting to repeat this study with various other disease states, same goal in mind: to determine if, and/or how, personality traits are associated with them; and to examine whether behavioral elements of illness and health can be established in alignment with the precepts of Chinese medicine and its body, mind, and spirit connection.

Enlightenment will be now the beginning, not the end. Beginning of a non-ending process in all dimensions of richness.
Bhagwan Shree Rajneesh

Chapter 5 Endnotes

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[2] Daverick Leggett, *Recipes for Self-Healing* (Totnes, Devon: Meridian Press, 1999), 42.

[3] Ibid., 61-62.

[4] Harriet Beinfield and Efrem Korngold, *Between Heaven and Earth: A Guide to Chinese Medicine* (New York: The Random House Publishing Group, 1991), 145.

[5] Daverick Leggett, *Recipes for Self-Healing* (Totnes, Devon: Meridian Press, 1999), 62.

[6] Ted Kaptchuk, *The Web That Has No Weaver: Understanding Chinese Medicine* (New York: McGraw Hill, 2000),158.

[7] Philip Lichtenberg, "A Definition and Analysis of Depression," *Archives of Neurology and Psychiatry* 7 (1957): 519.

[8] Charles Spielberger, *State -Trait Anxiety Inventory, Form Y Manual.* (Redwood City, CA: MindGarden Publishing, 1983), 4.

[9] Ibid., 5.

[10] Ibid., 5

[11] Rudolph Ballantine, *Radical Healing: Integrating the World's Great Therapeutic Traditions to Create a New Transformative Medicine* (New York: Three Rivers Press, 1999), 188.

[12] Harriet Beinfield and Efrem Korngold. *Between Heaven and Earth: A Guide to Chinese Medicine* (New York: The Random House Publishing Group, 1991), 107.

[13] Ibid.

[14] Daverick Leggett, *Recipes for Self-Healing* (Totnes, Devon: Meridian Press, 1999), 84-85.

[15] Ibid.

[16] Ibid., 6.

[17] Ling Shu as cited by Ted Kaptchuk, *The Web That Has No Weaver: Understanding Chinese Medicine* (New York: McGraw Hill, 2000), 82.

[18] Ted Kaptchuk, *The Web That Has No Weaver: Understanding Chinese Medicine* (New York: McGraw Hill, 2000), 82.

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[20] Caroline Myss, *Why People Don't Heal and How They Can* (New York: Three Rivers Press, 1997), 58-59.

[21] Ibid., 62.

[22] Ibid., 62.

[23] Harriet Beinfield and Efrem Korngold, *Between Heaven and Earth: A Guide to Chinese Medicine* (New York: The Random House Publishing Group, 1991), 105.

[24] Charles Spielberger. *STAXI-2™ State-Trait Anger Expression Inventory-2™ Professional Manual* (Lutz, Florida:PAR Psychological Assessment Resources, Inc., 1999), 16-17.

[25] Ibid., 2.

[26] Charles Spielberger. *STAXI-2™ State-Trait Anger Expression Inventory-2™ Professional Manual* (Lutz, Florida:PAR Psychological Assessment Resources, Inc., 1999), 26.

[27] Ibid., 17.

[28] Ibid.

[29] Miller (1998) as cited by Janice Kiecolt-Glaser, Lynanne McGuire, Theodore Robles, and Ronald Glaser, "Emotions, Morbidity, and Mortality: New Perspectives from Psychoneuroimmunology," http://www.questia.com (accessed on June 5, 2005).

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[31] http://cpmcnet.columbia.edu/dept/gi/hepD.html (accessed on December 29, 2005).

[32] Ibid., 24.

[33] Harriet Beinfield and Efrem Korngold, *Between Heaven and Earth: A Guide to Chinese Medicine* (New York: The Random House Publishing Group, 1991), 145.

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[37] Ibid., 60.

[38] Ibid.

[39] Harriet Beinfield and Efrem Korngold, *Between Heaven and Earth: A Guide to Chinese Medicine* (New York: The Random House Publishing Group, 1991), 142.

[40] Ibid., 173.

[41] Harriet Beinfield and Efrem Korngold, *Between Heaven and Earth: A Guide to Chinese Medicine* (New York: The Random House Publishing Group, 1991), 145.

[42] Caroline Myss, *Anatomy of the Spirit: The Seven Stages of Power and Healing* (New York: Three Rivers Press, 1996), 167.

[43] Ibid.

[44] Stephen Jay Gould, *The Mismeasure of Man* (New York: W.W. Norton, 1981), 242.

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APPENDIX A

Components of Self-Esteem as Defined by Edward O'Brien, Ph.D. and Seymour Epstein, Ph.D. - Characteristics of High and Low Scorers

A. Global Self-Esteem (GSE)

Pleased with self, feels significant as a person, self-confident, pleased with past, expects future successes.	Self-critical, dissatisfied with self, feels insignificant as a person, self-doubting, displeased with past, expects future failures unless major life changes are made.

B. Components of Self-esteem

Competence (CMP) Competent, feels capable of mastering new tasks, learns quickly and does well at most things, feels talented, feels effective and capable.	Incompetent, feels unable to master new tasks, learns slowly and often fails in difficult endeavors, ineffective, feels lacking in skills or talents.
Lovability (LVE) Worthy of love, feels cared for by loved ones, accepted as a person, can count on support from loved ones, able to express and receive feelings of love, involved in satisfying intimate relationship.	Unlovable, doubts that loved ones care, fears rejection because of certain aspects of personality, unsure whether loved ones can be counted on for support, has difficulty expressing or receiving feelings of love, doubts about finding or maintaining an intimate relationship.
Personal Power (PWR) Powerful, successfully seeks positions of leadership, good at influencing others' opinions and behaviors, assertive, has a strong impact on others.	Powerless, poor leader and avoids leadership positions, a follower who is strongly influenced by others' opinions and behaviors, unassertive, rarely has a strong impact on others.
Self-control (SFC) Self-disciplined, persevering, good at setting and achieving goals, not easily distracted, in control of emotions, exercises restraint in eating, drinking, and/or use of drugs.	Lacks self-discipline, often fails to complete tasks, difficulty with setting and achieving goals, easily distracted, not in control of emotions, lacks self-control in eating, drinking, or use of drugs.
Moral Self-approval (MOR) Pleased with moral values and behavior, has clearly defined moral standards and acts in a way that is consistent with moral values, sets a positive moral example for others.	Guilty and displeased with moral values or behavior, unclear about moral beliefs and standards, often acts in an unethical or immoral manner, ashamed of setting a poor moral example for others.

Body Appearance (BAP)

Physically attractive, pleased with appearance, feels that others are attracted because of appearance, feels sexually attractive, takes care to enhance physical appearance.

Physically unattractive, displeased with appearance, feels that others are repelled by their looks, doubts sexual attractiveness, indifferent or unaware of ways to improve Physical appearance.

Body Functioning (BFN)

Well-coordinated, agile, in good physical condition, comfortable with body, enjoys physical activities such as dancing or sports, feels healthy and feels a sense of vitality and vigor in body functioning.

Awkward, clumsy, uncoordinated, in poor physical condition, uncomfortable with body, dislikes engaging in physical activities, feels unhealthy and that body is dull, lifeless, and sluggish.

C. Identity Integration (IDN)

Clear sense of identity, knows who he/she is, knows what he/she wants out of life, well defined long-term goals, inner sense of cohesion and integration of different aspects of self-concept.

Confused, lacking a sense of identity and purpose, unsure of what he/she wants out of life, no long-term goals, much inner conflict among different aspects of self-concept.

D. Defensive Self-enhancement (DEF)

Defensive, overly inflated view of self-worth, claims to possess highly unlikely positive qualities, denies ubiquitous human weaknesses.

Open, nondefensive evaluation of self-worth, makes no claims of rare virtues, and acknowledges common human weaknesses.

APPENDIX B

California Pacific Medical Center Research Consent Form

See Pages 109 through 113.

HUMAN RESEARCH CONSENT FORM

Specific Study Title: THE HEPATIC PERSONALITY: INTEGRATING WESTERN MEDICINE, EASTERN MEDICINE AND PSYCHONEUROIMMUNOLOGY

CALIFORNIA PACIFIC MEDICAL CENTER
CONSENT TO ACT AS A RESEARCH PARTICIPANT

You are being asked to take part in a research study being conducted by Dr. Robert G. Gish a Carol L. Spence

Because you have Hepatitis C, or because you do not have Hepatitis C but have expressec interest in participating as a control subject in a study about Hepatitis C, you are being asked tc participate in this study.

A. WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of doing this study is to show that there are personality characteristics that can potentially predispose an individual to a disease of the liver (hepatic personality). The study integrates the mind/body connection of the teachings of Western medicine, Eastern medicine (with emphasis on Chinese medicine), and the psychoneuroimmunolgy. Psychoneuroimmunolgy is the science of the connection of mind (psychology), the brain (neurology), and the body's natural healing system (the immune system) and links one's attitudes, emotions and behaviors and his or her health.

B. WHAT HAPPENS TO YOU AND OTHER STUDY PARTICIPANTS?

The following procedures will be performed:

1.) You will be asked to respond to three questionnaires. The first questionnaire evaluates hov you deal with anger, the second questionnaire evaluates feelings of apprehension, tension nervousness, and worry; and the third questionnaire evaluates self-esteem.
2.) You will be asked to put the I.D. number given by the study staff on the answer sheets and tc only fill out your age and gender information. **Your name is not required on the answe sheets.**
3.) Participation in this study will take approximately 30 minutes.
4.) Procedures will take place:

California Pacific Medical Center 2340 Clay St. 2nd Fl San Francisco, CA 94115	East Bay Clinic 400 30th St, Suite 200 Oakland, CA 94609

APPROVE

JUN 6 2

CPMC IRI

MEDICAL RECORDS: *DO NOT DELETE THIS SIGNED FORM FROM PATIENT'S CHART*

Specific Study Title: THE HEPATIC PERSONALITY: INTEGRATING WESTERN MEDICINE, EASTERN MEDICINE AND PSYCHONEUROIMMUNOLOGY

Sacramento Clinic
1315 Alhambra Blvd. #210
Sacramento, CA 95816

Modesto Clinic
1635 Tully Road
Modesto, CA 95359

Las Vegas Clinic
3006 S. Maryland
Parkway, #470
Las Vegas, NV 89109

Fresno Clinic
3755 Herndon Ave, Building 685
Suite 101
Clovis, CA 93611

Chico Clinic
111 Raley Blvd.
Suite 120
Chico, CA 95920

Redding Clinic
2252 Court St.
Redding, CA 96001

Or, you may take the questionnaires to complete at home.

5.) About 100 participants will take part in this study.

C. WHAT ARE THE RISKS OF THIS STUDY?

The interview and questionnaires may make you uncomfortable, but you are free to stop the process at any time.

There may be a risk of loss of confidentiality, but information about you will be handled as confidentially as possible as discussed in section F below.

D. WHAT ARE THE POTENTIAL BENEFITS TO YOU AND OTHERS?

There will be no direct benefit to you from participating in this study. However, the long term benefits of this study may include improvements in the education and rehabilitation of patients with Hepatitis C.

E. ARE ALTERNATIVES AVAILABLE?

You are free to choose not to participate in this study.

F. HOW CONFIDENTIAL ARE YOUR RECORDS?

Your records of treatment will be kept confidential according to standard medical practice. Any information that is obtained in connection with this study that can identify you will remain confidential and will be disclosed only with your permission or as required by law. No individual identities will be used in any reports or publications resulting from the study. Study

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CPMC IRB

information will be coded, and kept in locked files at all times. Only study personnel and California Pacific Medical Center Institutional Review Board (committee established for the protection of rights of research participants) will have access to the files.

An authorization describing how health information about you may be used and to whom it will be disclosed by the principal investigator and the research team will be provided to you. Federal and state law requires that patients must give authorization for use of their protected health information in order to participate in this research study. Please refer to the attached "Patient Authorization for the Use and Disclosure of Protected Health Information for Research" form.

G. STATEMENT OF VOLUNTARY PARTICIPATION

Your participation in this study is voluntary. Without any prejudice to your future medical treatment, you are free to take part in, or withdraw from the study at any time.

H. CONFLICT OF INTEREST AND INVESTIGATOR PAYMENT

Your physician may also be an investigator of this research protocol, and, as an investigator, is interested not only in your clinical welfare, but the results of this study. It is possible that occasionally these two goals may be in conflict. At any time during this study, you may ask for a second opinion from another doctor who is in no way associated with this study at your own expense.

I. COSTS TO THE SUBJECT

There will be no cost to you for participating in this study.

J. NEW FINDINGS

You will be told of any significant new findings developed during the course of this study, which may relate to my willingness to continue my participation. You can ask for study results at its conclusion.

APPROVED

Specific Study Title: THE HEPATIC PERSONALITY: INTEGRATING WESTERN MEDICINE, EASTERN MEDICINE AND PSYCHONEUROIMMUNOLOGY

K. EXPERIMENTAL SUBJECT'S BILL OF RIGHTS

A copy of the Experimental Subject's Bill of Rights and a copy of this consent form will be given to you for your own use.

L. INVESTIGATOR'S NAME AND NUMBER

This information was discussed with you by Dr. Robert Gish and/or Carol L. Spence. S/he wi answer any further questions you may have concerning this study or the procedures. You can reac him/her at *(415) 600-1000.*

M. IRB HOURS AND NUMBER

Should you have any questions about your rights as a research participant, you may call the Institutional Review Board which is concerned with protection of volunteers in research projects, between 9 a.m. and 4 p.m., Monday through Friday, at (415) 600-3688 or by writing: CPMC Institutional Review Board Office, P.O. Box 7999, San Francisco, CA 94120.

APPROVE

JUN 6 2

MEDICAL RECORDS: ***DO NOT DELETE THIS SIGNED FORM FROM PATIENT'S CHART***

HUMAN RESEARCH CONSENT FORM

Specific Study Title: THE HEPATIC PERSONALITY: INTEGRATING WESTERN MEDICINE, EASTERN MEDICINE AND PSYCHONEUROIMMUNOLOGY

SUBJECT'S STATEMENT:

My signature below means that I have read the above information about the study and have had a chance to ask questions. I have been given a copy of this consent form; the Subject's Experimental Bill of Rights; and a copy of the Authorization for the Use and Disclosure of Protected Health Information for Research form. I have been told that by signing this consent form I am not giving up any of my legal rights. I voluntarily consent to participate in this research study.

_____
Printed Name of Participant or legal representative if appropriate

_____ _____
Participant's Signature or legal representative if appropriate Date

_____ _____
Signature of Person Obtaining Consent/ Printed Name Date

APPROVED

JUN 6 20

CPMC IRB

MEDICAL RECORDS: ***DO NOT DELETE THIS SIGNED FORM FROM PATIENT'S CHART***

APPENDIX C

Participant Informed Consent Form - Chinese Medicine Clinic

RESEARCH TITLE: THE HEPATIC PERSONALITY: INTEGRATING THE MORES OF WESTERN MEDICINE, EASTERN MEDICINE AND PSYCHONEUROIMMUNOLOGY

PURPOSE OF RESEARCH:

The purpose of this study is to learn if there are personality characteristics that can potentially predispose an individual to a disease of the liver (hepatic personality). The study integrates the mind/body connection of the teachings of Western medicine, Eastern medicine (with emphasis on Chinese medicine), and psychoneuroimmunology. Psychoneuroimmunology is the science of the connection of mind (psychology), the brain (neurology), and the body's natural healing system (the immune system) and links one's attitudes, emotions and behaviors and his or her health.

As a participant of this research, you will be asked to complete three (3) personality inventories. If it can be determined that emotions and personality traits exist common to individuals with HCV based on responses to the personality inventories, a behavior modification component to health care for the individual with a risk of acquiring HCV could be proposed.

You will be asked to put the I.D. number given by the study staff on the answer sheets and to only fill out your age and gender information. **Your name is not required on the answer sheets.**

Participation in this study will take approximately 30 minutes.

RIGHTS OF PARTICIPANTS

1. Your participation in this study is on a voluntary basis, and you have the right to withdraw from this study at any time.
2. All information obtained from the participants will be treated with confidentiality. Consent forms and patient questionnaires will be kept in a secured location to which the researcher will not have access. At the conclusion of this study this information may be made available to the researcher, but the participants' identity will not be disclosed in any accounting of this research.
3. As a participant of this study you have the right to read any reports of the research in which you have participated.
4. By initialing here: _____, you indicate that you wish to receive a copy of the research findings and agree that your research forms will be filed in your medical chart.

Carol L. Spence, principal researcher, will answer any questions you may have concerning this study or the procedures. She can be reached at (415) 271-1118.

PARTICIPANT'S STATEMENT

I have read the above information regarding the purpose of this study and the rights of participants. I voluntarily consent to participate in this research study.

_____	_____	_____	_____
Participant's Signature	Date	Researcher's Signature	Date

April, 2006

APPENDIX D

Participant Informed Consent Form - General

RESEARCH TITLE: THE HEPATIC PERSONALITY: INTEGRATING THE MORES OF WESTERN MEDICINE, EASTERN MEDICINE AND PSYCHONEUROIMMUNOLOGY

PURPOSE OF RESEARCH:

The purpose of this study is to learn if there are personality characteristics that can potentially predispose an individual to a disease of the liver (hepatic personality). The study integrates the mind/body connection of the teachings of Western medicine, Eastern medicine (with emphasis on Chinese medicine), and psychoneuroimmunology. Psychoneuroimmunology is the science of the connection of mind (psychology), the brain (neurology), and the body's natural healing system (the immune system) and links one's attitudes, emotions and behaviors and his or her health.

As a participant of this research, you will be asked to complete three (3) personality inventories. If it can be determined that emotions and personality traits exist common to individuals with HCV based on responses to the personality inventories, a behavior modification component to health care for the individual with a risk of acquiring HCV could be proposed.

You will be asked to put the I.D. number given by the study staff on the answer sheets and to only fill out your age and gender information. **Your name is not required on the answer sheets.**

Participation in this study will take approximately 30 minutes.

RIGHTS OF PARTICIPANTS

1. Your participation in this study is on a voluntary basis, and you have the right to withdraw from this study at any time.
2. All information obtained from the participants will be treated with confidentiality. Consent forms and patient questionnaires will be kept in a secured location to which the researcher will not have access. At the conclusion of this study this information may be made available to the researcher, but the participants' identity will not be disclosed in any accounting of this research.
3. As a participant of this study you have the right to read any reports of the research in which you have participated.

Carol L. Spence, principal researcher, will answer any questions you may have concerning this study or the procedures. She can be reached at (415) 271-1118.

PARTICIPANT'S STATEMENT

I have read the above information regarding the purpose of this study and the rights of participants. I voluntarily consent to participate in this research study.

_____	_____	_____	_____
Participant's Signature	Date	Researcher's Signature	Date

April, 2006

APPENDIX E

Patient Questionnaire - HCV

Name _____ Date_____
Telephone Number_____
Address_____
Date of Birth _____

How did you get Hepatitis C?

___Injection or Drug Use
___Tattoo
___Blood Transfusion
___Dialysis
___Acupuncture
___Body Piercing
___Other

Month and Year Diagnosed with HCV _____

Have you ever undergone treatment for HCV (i.e.: Interferon, Ribavirin)?_____
If yes, how many times?_____
Please list your treatments below:
_____
_____
_____

APPENDIX F

State-Trait Anxiety Inventory - Form Y

Sample questions as allowed by special permission of the publisher, MindGarden, Inc., 1690 Woodside Road, Suite 202, Redwood City, California 94061
Permission granted: July 6, 2006

- I get in a state of tension or turmoil as I think over my recent concerns and interests
    - Almost never, Sometimes, Often, Almost Always
- I am "calm, cool, and collected"
    - Almost never, Sometimes, Often, Almost Always
- I am presently worrying over possible misfortunes
    - Not At All, Somewhat, Moderately So, Very Much So
- I feel at ease
    - Not At All, Somewhat, Moderately So, Very Much So.
- I feel nervous and restless
    - Almost Never, Sometimes, Often, Almost Always

APPENDIX G

State-Trait Anger Expression Inventory - 2™

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- I feel angry
  - Not At All, Somewhat, Moderately So, Very Much So
- I tend to harbor grudges that I don't tell anyone about
  - Almost Never, Sometimes, Often, Almost Always
- I control my urge to express my angry feelings
  - Almost Never, Sometimes, Often, Almost Always

APPENDIX H

Multidimensional Self-Esteem Inventory

- How often do you feel that you are a very important and significant person?
- How often do you feel highly satisfied with the way you live up to your moral values?
- How often do you have a strong influence on the attitudes and opinions of others?

(1) Almost never
(2) Seldom or rarely
(3) Sometimes
(4) Fairly often
(5) Very often

APPENDIX I

Research Summary

Carol L. Spence, doctoral candidate at Holos University, is presently conducting her doctoral research that focuses on the whole-person approach to illness and healing. She is interested in quantifying the mind/body relationship; in lending quantitative foundation to qualitative inference relative to the theory of psychological contributors to disease. Carol's personal healing journey fueled a passion for scientifically measuring the impact of the personality (emotions, attitudes, and behaviors) in the manifestation and exacerbation of physical disease. Her research study, entitled: "The Hepatic Personality: Integrating the Mores of Western Medicine, Eastern Medicine, and Psychoneuroimmunology," evaluates personality profiles of chronic hepatitis C (HCV) patients. The study, as its title reveals, is an attempt to bridge the gap between Western and Eastern medicine and to show that one's attitudes, emotions, and behaviors play a potential role in the initiation and progression of chronic liver disease, namely HCV.

Carol is looking for participants for her research. She needs men and women between the ages of 30 and 70 who have been diagnosed with chronic hepatitis C (HCV). She also needs participants for the control group of this study: individuals between the ages of 30 and 70 who have never been diagnosed with liver disease. 100 individuals with HCV and 100 individuals without liver disease will take three short personality inventories. The inventories take approximately 20-30 minutes to complete and can be taken at home and returned in a self-addressed, stamped envelope. **Responses are confidential.**

Hepatitis C (HCV) is one of the most important forms of chronic disease discovered in the last twenty years[1] and is one of the most prevalent liver diseases in the world. The World Health Organization considers Hepatitis C an epidemic. For every person that is infected with the AIDS virus, **there are more than four infected with HCV**.[2] In industrialized countries, HCV accounts for 40% of cases of end-stage cirrhosis, 60% of cases of hepatocellular carcinoma and 30-54% of liver transplants. Chronic hepatitis C virus infection is the leading cause of cirrhosis in this country.[3]

The CDC estimates that there are up to 60,000 new HCV infections in the U.S. every year, with 8,000 to 10,000 deaths each year resulting from chronic HCV. Over the next 10-20 years chronic HCV is predicted to become a major burden on the health care system as patients who are currently asymptomatic with relatively mild disease progress to end-stage liver disease and develop hepatocellular carcinoma. Predictions in the USA indicate that there will be a 60% increase in the incidence of cirrhosis, a 68% increase in hepatoma incidence, a 279% increment in incidence of hepatic decompensation, a 528% increase in the need for transplantation, and a 223% increase in liver death rate.[4]

If it can be determined that specific personality traits are associated with HCV, a behavioral modification component to health care can be proposed that could optimize

the well-being of those individuals inflicted with this insidious disease of epidemic proportions.

For more information or to enroll in this study, please call (415) 271-1118 or email Carol at courage@vom.com. **YOU CAN HELP CHANGE LIVES.**

End Notes

[1] Robert Gish, M.D., Director of Liver Transplant, California Pacific Medical Center, San Francisco - unpublished data.

[2] Adrian Di Bisceglie, "Preventive Strategies for Chronic Liver Disease," American Family Physician, 2001, http://www.aafp.org/afp/20011101/editorials.html (accessed November 17, 2005).

[3] Ibid.

[4] Ibid.

APPENDIX J

Protected Authorization for the Use and Disclosure of Protected Health Information for Research

See Pages 123 through 127.

CALIFORNIA PACIFIC MEDICAL CENTER

PATIENT AUTHORIZATION FOR THE USE AND DISCLOSURE OF PROTECTED HEALTH INFORMATION FOR RESEARCH

PARTICIPANT'S NAME: _____

PRINCIPAL INVESTIGATOR: ROBERT G. GISH, MD

PHONE: (415) 600-1000

ADDRESS OF PRINCIPAL INVESTIGATOR: 2340 CLAY STREET, SAN FRANCISCO, CA, 94117

RESEARCH STUDY TITLE: The Hepatic Personality: Integrating Western Medicine, Eastern Medicine and Psychoneuroimmunology

IRB STUDY NUMBER: 26.022EXP

AUTHORIZATION EXPIRATION DATE: NOVEMBER 22, 2035

Protected health information (PHI) is any health information including medical records, mental health records, billing records, survey data, and demographic data that is identified to you. By signing below, you are authorizing the principal investigator and the staff of California Pacific Medical Center participating in the research to collect, store, use, and disclose the PHI described below. You are also authorizing the principal investigator and the research team to request copies of your previous medical and/or billing records from the providers listed.

The main reason to share this information is to be able to conduct the research as described earlier in the research consent form. Information is also shared to report adverse events or situations that may help prevent other individuals at risk. Other reasons include treatment, payment, or health care operations.

APPROVED

FEB 10 2006

Date prepared: 02/09/2006

CPMC IRB

MEDICAL RECORDS: *DO NOT DELETE THIS SIGNED FORM FROM PATIENT'S CHART*

CALIFORNIA PACIFIC MEDICAL CENTER

PATIENT AUTHORIZATION FOR THE USE AND DISCLOSURE OF PROTECTED HEALTH INFORMATION FOR RESEARCH

Your authorization is required for participation in the research study. You may revoke your authorization at any time. This request must be in writing and must be signed by you or your legal representative, and mailed or delivered to the principal investigator at the address above. When your request is received, the principal investigator will stop collecting your information except as required to maintain the integrity of the research study or as required by law. For example, we may need to use your information to document why you have withdrawn from the study or to report adverse events.

During the research study, your research team will look at the following information:

ALL HEALTH INFORMATION pertaining to your medical history, mental or physical condition and treatment received. These records may include (check all that apply):

- ☐ Billing records for healthcare services
- ☒ Medical records
- ☐ Lab, pathology and/or radiology results
- ☐ Mental Health records
- ☐ Previous research records
- ☐ Questionnaires or interviews
- ☐ Other (specify): _____

APPROVED

FEB 10 2006

Date prepared: 02/09/2006 CPMC IRB

MEDICAL RECORDS: ***DO NOT DELETE THIS SIGNED FORM FROM PATIENT'S CHART***

CALIFORNIA PACIFIC MEDICAL CENTER

PATIENT AUTHORIZATION FOR THE USE AND DISCLOSURE OF PROTECTED HEALTH INFORMATION FOR RESEARCH

The research team may disclose your PHI to the following individuals or organizations:

- ☒ California Pacific Medical Center Institutional Review Board for oversight purposes
- ☒ Study sponsor: Carol L. Spence
- ☐ Contract research organization: _____
- ☒ Office of Human Research Protections (OHRP) in the U.S. Department of Health and Human Services (DHHS) for safety, efficacy, and compliance reports
- ☐ Food and Drug Administration
- ☐ National Institutes of Health
- ☒ Other federal or state agencies that have authority over the research project or other governmental offices as required by law
- ☐ Other medical centers/institutions outside of California Pacific Medical Center participating in the research
- ☒ A data safety monitoring board, if applicable
- ☐ Statistician for data analysis
- ☐ Outside lab for specimen processing
- ☐ Others (list all that apply)_____

APPROVED

FEB 10 2006

CPMC IRB

Date prepared: 02/09/2006

MEDICAL RECORDS: *DO NOT DELETE THIS SIGNED FORM FROM PATIENT'S CHART*

CALIFORNIA PACIFIC MEDICAL CENTER

PATIENT AUTHORIZATION FOR THE USE AND DISCLOSURE OF PROTECTED HEALTH INFORMATION FOR RESEARCH

During the research study, we may request copies of your PHI from the following sources (list all that apply):

Name:

_____

Address:

_____

Name:

_____

Address:

_____

California Pacific Medical Center is required by federal and state laws to protect your health information. California law prohibits the recipient of this information from making further disclosure of your health information unless the recipient obtains another authorization from you or unless the disclosure is required or permitted by law. This protection does not extend to recipients outside the state of California. There is always the possibility that your health information could be disclosed to a party that is not required to protect its confidentiality.

You have the right to choose not to sign this form. However, if you decide not to sign, you cannot participate in the research study. Refusing to sign will not prejudice your future medical treatment at this institution.

APPROVED

FEB 1 0 2006

CPMC IRB

Date prepared: 02/09/2006

MEDICAL RECORDS: *DO NOT DELETE THIS SIGNED FORM FROM PATIENT'S CHART*

CALIFORNIA PACIFIC MEDICAL CENTER

PATIENT AUTHORIZATION FOR THE USE AND DISCLOSURE OF PROTECTED HEALTH INFORMATION FOR RESEARCH

PARTICIPANT'S STATEMENT:

I acknowledge that my right to access my health information pertaining to the research study will be suspended until the study is concluded.

I hereby authorize the Principal Investigator listed above and the research team to use and disclose my protected health information as described herein.

Participant's Name: _____

Participant's Signature: _____

Date: _____

If conservator or individual authorized to make health decisions on behalf of the participant, state relationship to participant: _____

APPROVED

FEB 1 0 2006

CPMC IRB

Date prepared: 02/09/2006

MEDICAL RECORDS: ***DO NOT DELETE THIS SIGNED FORM FROM PATIENT'S CHART***

APPENDIX K

Recruitment Flier

WE NEED YOU!!

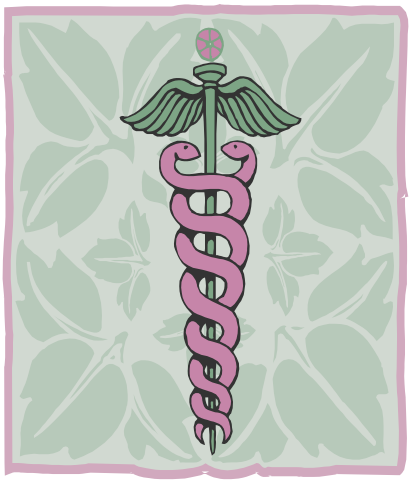
WE INVITE YOU TO PARTICIPATE IN A RESEARCH STUDY.

We need people who have not been diagnosed with liver disease and individuals who have been diagnosed with hepatitis C to take three short personality questionnaires in order to determine if there are specific personality traits associated with this disease.

Responses are completely confidential. Through your participation we hope to more effectively treat those who have been diagnosed with the chronic hepatitis C virus and to better assist them with their own self-care.

YOU CAN HELP US CHANGE LIVES.

For more information on how to participate in this research study please ask your doctor, or call (415) 271-1118.



APPENDIX L

Patient Questionnaire - Control Group

Name _____ Date_____
Telephone Number_____
Address_____
Date of Birth _____

Have you ever been diagnosed with:
Hepatitis C: (yes)____ (no)____
Other liver disease (yes)____ (no)____ If yes, what type_____

APPENDIX M

Publishers' Permission Letters

See Pages 131-134.

PAR
Psychological Assessment Resources

16204 N. FLORIDA AVENUE
LUTZ, FLORIDA 33549
Tel (813) 968-3903
Fax (813) 968-2598
www.parinc.com

Sent Via Email:

July 6, 2006

Carol L. Spence

Dear Ms. Spence:

In response to your recent request, permission is hereby granted to you to include up to a total of three (3) sample items from the State-Trait Anger Expression Inventory (STAXI-2) and up to a total of three (3) sample items from The Multidimensional Self-Esteem Inventory (MSEI) in the appendix of your dissertation titled, *The Hepatic Personality: Integrating the Mores of Western Medicine, Eastern Medicine and Psychoneuroimmuology.*

This Agreement is subject to the following restrictions:

(1) Any and all material will contain the following credit line:

For the STAXI-2:
"Reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, FL 33549, from the STAXI-2 by Charles D. Spielberger, Ph.D., Copyright 1979, 1986, 1988, 1995, 1998, 1999, by Psychological Assessment Resources, Inc. Further reproduction is prohibited without permission from PAR, Inc."

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TWO COPIES of this Permission Agreement should be signed and returned to me to indicate your agreement with the above restrictions. I will return a fully executed copy of the Agreement to you for your records.

Sincerely,

Molly K. Montgomery
Permissions Specialist
mmontgomery@parinc.com
1-800-331-8378 (phone)
1-800-727-9329 (fax)

ACCEPTED AND AGREED:

BY: Carol L. Spence
CAROL SPENCE

DATE: July 6, 2006

ACCEPTED AND AGREED:

BY: Molly K Montgomery
MOLLY MONTGOMERY

DATE: 7/7/06

PAR
Psychological Assessment Resources

16204 N. FLORIDA AVENUE
LUTZ, FLORIDA 33549
Tel (813) 968-3003
Fax (813) 968-2598
www.parinc.com

Sent Via Email:

July 28, 2006

Carol L. Spence

Dear Ms. Spence:

In response to your recent request, permission is hereby granted to you to include Table 2, "Characteristics of High and Low Scores" from The Multidimensional Self-Esteem Inventory (MSEI) Manual in the appendix of your dissertation titled, *The Hepatic Personality: Integrating the Mores of Western Medicine, Eastern Medicine and Psychoneuroimmuology.*

This Agreement is subject to the following restrictions:

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TWO COPIES of this Permission Agreement should be signed and returned to me to indicate your agreement with the above restrictions. I will return a fully executed copy of the Agreement to you for your records.

Sincerely,

Molly K. Montgomery
Permissions Specialist
mmontgomery@parinc.com
1-800-331-8378 (phone)
1-800-727-9329 (fax)

ACCEPTED AND AGREED:

BY: CAROL SPENCE

DATE: July 28, 2006

ACCEPTED AND AGREED:

BY: MOLLY MONTGOMERY

DATE: 7/28/06

As far as we can discern, the sole purpose of existence is to kindle a light in the darkness of being.

- Carl Jung