

Original

**CONSCIOUSNESS**

Submitted in partial fulfillment of learning module:  
"The Ecology of Consciousness and Attention"  
As described in the Learning Agreement:  
Section III: Acquiring Field Proficiency, pp. 17-18

by

W. KEITH BOOKWALTER

THE UNION INSTITUTE

December 1996

## Note to Doctoral Committee Members Regarding Three Papers

### 1st Paper on Consciousness:

What started off as a simple desire to understand a phenomenon, lead to a discovery of a battle of paradigms and a search for a theory of consciousness which acknowledges the existence of the soul. Coming up with my recategorization of the extant paradigms was the result of a great deal of frustrating note-shuffling!

I feel fortunate to have chosen to review the work of Daniel C. Dennett: Consciousness Explained. He forced me to rethink my own beliefs; his work has received a great deal of attention. For example, Nelson Cowan, the author of Attention and Memory dedicates an entire section of his book to the analysis of Dennett's theory and states that his book has "provoked an exceptional amount of interest. . . . It is long, complex, and thoughtful, and argues against the unitary view [of consciousness]" (232); his work was recent enough to be current (1991) yet old enough to have received several critiques which I include in my analysis.

The work of Chalmers was very thorough and it gave me a first-hand view of theory construction.

I enjoyed McGinn's mysterian approach. His eyes are wide open to the natural limitations of the human mind to understand itself.

I hope you enjoy my analysis.

### 2nd Paper on Attention and Memory:

During my study of consciousness I became aware that the authors were doing little interfacing with attention which was one of the goals of this learning module. Therefore, during my last few summer moments, I made a quick CD ROM search and a mad dash through the stacks of Ohio State. I was delighted to find the work of Cowan. As I mentioned, Cowan included a section on Dennett (section 7.4); he, like me, has a deep respect for philosophers and the utility of philosophy as a tool for theorizing; he presented a comprehensive review of the literature on attention and memory; he identified the unknowns and the current issues in the field; he set forth a comprehensive model of attention and memory; he not only interfaced consciousness and attention but equated them; and, like Chalmers, he provided me with an excellent example of model construction, modification, and defense--a process in which I am continually engaged.

Unfortunately, as I mentioned in the last issue of "Puerto de Oro," the book was late arriving--one of the hazards of living overseas. As it turned out, the book was lost in the mail. Luckily, Oxford University Press was kind enough to send me another copy for free. It arrived just before I left. Hence, Cowan was not integrated in the first paper as would have liked and I have dedicated the past week to digesting his fascinating framework. The first part is simply a summary containing my attempt to get Cowan into my own words while incorporating many of his phrases in order to increase my working vocabulary. It



also contains the bottom-line of research findings, occasional references to experiments, issues under dispute, questions for further research and a few of my own bracketed thoughts.

The commentary section (p36) you should find of greater interest. It contains my analysis and the relation of "attention" to my own work in education.

Throughout the paper I use three frequent abbreviations for economy's sake: stm (short-term memory), ltm (long-term memory), and info (information).

### 3rd Paper on Metacognition:

Another one of my learning goals was to tie in metacognition with the other concepts. As it turned out, metacognition is also a power of the human conscious. Unfortunately, there is confusion in the use of the term. I discuss this and then go on to show how a similar concept--"learning competence"--is used in the Anisa Model.

Having a copy of my Wholistic curriculum chart would be helpful to have on hand as you read this paper. Most of you should have a copy in the first edition of my Learning Agreement. Unfortunately I did not bring a copy with me to the U.S.

# CONSCIOUSNESS

## TABLE OF CONTENTS

Introduction

Definitions and Descriptions of Consciousness

Theories of Consciousness

Physical Theories of Consciousness

Daniel C. Dennett

Psychophysical Theories of Consciousness

David Chalmers

Roger W. Sperry

Colin McGinn

A Phenomenological/ Epistemological Basis  
for the Bahá'í View of Consciousness

A Physical/ Psychospiritual Theory of Consciousness

H.B. Danesh

M. Scott Peck

The Machine Myth

The Space/ Time Myth

Human Consciousness: One of Many Powers of the Soul

Logical Supervenience Reversed

The God/ Manifestation/ Consciousness/ Brain/ Body Connections

The God/ Manifestation/ Creation Connection

The Unseen/ Consciousness Connection

Prayer as Connector between Divinity and Soul

Dreams as Connectors between the Unseen and

Conscious Awareness

The Soul (Spirit)/ Body Connection

The Mind/ Brain Connection

Feelings as Connectors between Body and Mind

Body Organs and Systems as Connectors

The Step-up, Step-down Transformer:

a Metaphor for Consciousness and the Brain

Consciousness Research: Some Cutting Edges

Conclusion



## NOTES SENT TO COMMITTEE MEMBERS AND CONSULTANTS

### 1st Paper on Consciousness:

What started off as a simple desire to understand a phenomenon, lead to a discovery of a battle of paradigms and a search for a theory of consciousness which acknowledges the existence of the soul. Coming up with my recategorization of the extant paradigms was the result of a great deal of frustrating note-shuffling!

I feel fortunate to have chosen to review the work of Daniel C. Dennett: Consciousness Explained. He forced me to rethink my own beliefs; his work has received a great deal of attention. For example, Nelson Cowan, the author of Attention and Memory dedicates an entire section of his book to the analysis of Dennett's theory and states that his book has "provoked an exceptional amount of interest. . . . It is long, complex, and thoughtful, and argues against the unitary view [of consciousness]" (232); his work was recent enough to be current (1991) yet old enough to have received several critiques which I include in my analysis.

The work of Chalmers was very thorough and it gave me a first-hand view of theory construction.

I enjoyed McGinn's mysterian approach. His eyes are wide open to the natural limitations of the human mind to understand itself.

I hope you enjoy my analysis.

### 2nd Paper on Attention and Memory:

During my study of consciousness I became aware that the authors were doing little interfacing with attention which was one of the goals of this learning module. Therefore, during my last few summer moments, I made a quick CD ROM search and a mad dash through the stacks of Ohio State. I was delighted to find the work of Cowan. As I mentioned, Cowan included a section on Dennett (section 7.4); he, like me, has a deep respect for philosophers and the utility of philosophy as a tool for theorizing; he presented a comprehensive review of the literature on attention and memory; he identified the unknowns and the current issues in the field; he set forth a comprehensive model of attention and memory; he not only interfaced consciousness and attention but equated them; and, like Chalmers, he provided me with an excellent example of model construction, modification, and defense--a process in which I am continually engaged.

Unfortunately, as I mentioned in the last issue of "Puerto de Oro," the book was late arriving--one of the hazards of living overseas. As it turned out, the book was lost in the mail. Luckily, Oxford University Press was kind enough to send me another copy for free. It arrived just before I left. Hence, Cowan was not integrated in the first paper as would have liked and I have dedicated the past week to digesting his fascinating framework. The first part is simply a summary containing my



attempt to get Cowan into my own words while incorporating many of his phrases in order to increase my working vocabulary. It also contains the bottom-line of research findings, occasional references to experiments, issues under dispute, questions for further research and a few of my own bracketed thoughts.

The commentary section (p36) you should find of greater interest. It contains my analysis and the relation of "attention" to my own work in education.

Throughout the paper I use three frequent abbreviations for economy's sake: stm (short-term memory), ltm (long-term memory), and info (information).

### 3rd Paper on Metacognition:

Another one of my learning goals was to tie in metacognition with the other concepts. As it turned out, metacognition is also a power of the human conscious. Unfortunately, there is confusion in the use of the term. I discuss this and then go on to show how a similar concept--"learning competence"--is used in the Anisa Model.

Having a copy of my Wholistic curriculum chart would be helpful to have on hand as you read this paper. Most of you should have a copy in the first edition of my Learning Agreement. Unfortunately I did not bring a copy with me to the U.S.



## INTRODUCTION

I first became interested in consciousness in 1971 through my studies of the work of Dr. Daniel C. Jordan, a Rhodes Scholar in music, cognitive psychologist, and educator who, with a team of scholars and practitioners at the Center for the Study of Human Potential in the School of Education at the University of Massachusetts, Amherst, (1970-1978 approximately) laid the foundation for a process/organismic approach to education known as the ANISA Model. During the 1960's, in spite of his training in the study of animal behavior as a principal means of understanding human behavior and learning, Dr. Jordan parted company with the mechanistic/behavioristic school of psychology. His award-winning doctoral dissertation was on Jungian archetypes and he often referred to Jungian concepts in his lectures. Later in his career he turned to Alfred North Whitehead, mathematician, logician, and philosopher for a cosmology of reality which was in harmony with science while also taking into account non-physical realities such as subjective aim and the deity.

In his lectures Dr. Jordan would refer to the features of human nature which distinguished people from animals. In addition to knowledge, love, and will; he emphasized consciousness and considered it to be of such vital importance that he required that his doctoral students in education include it in their studies. I recall that he explained how humans are not only capable of knowing, like other higher-order animals, but they also know that they know. They even know when they do not know something and can exercise their will in the acquisition of that unknown but knowable object of knowledge. Hence, a human can choose to become an educator, a trapeze artist, or a doctor; something that would never occur to an animal. And then, to add a bit of humor to the lecture, Dr. Jordan would point out that, at times, we are even conscious that we used to know something but that now we have forgotten it.

A key principle underlying Dr. Jordan's model of education was the need to refine human consciousness to the point at which people can take charge of their own learning and the process of becoming what they choose to become. This leads to the ability to take charge of one's personal destiny and the collective destiny of society; in essence, to determine the future course of evolution on the planet.

Admittedly, this has been one of the most challenging learning components thus far in my Union Institute program. I have discovered that consciousness is a very vast and divided area of human endeavor. Its principle thinkers and investigators represent a wide range of fields and various paradigms, each with its own terminology, critical issues and problems. While struggling through the readings, I took comfort in the comment of Daniel C. Dennett, Distinguished Arts and Science Professor and Director of the Center for Cognitive Studies at Tufts University: "Consciousness stands alone today as a topic that often leaves even the most sophisticated thinkers tongue-tied and confused"



(22).

In this paper I will review what I have identified as the three major paradigms of consciousness: physical, psychophysical, and physical-psychospiritual. In my search, Dr. George Bondra, a colleague of Dr. Jordan's and one of the founding scholars of the Anisa Model, guided me to the work of the late Roger Wolcott Sperry, psychologist, scientist, humanitarian and recipient of the 1981 Nobel Medicine/Physiology Prize for his work in the split-brain approach to cerebral organization, hemispheric specialization and other studies. Earlier this year, while reading an article titled, "Can Machines Think?" (Wright), I became intrigued by three recent publications on consciousness which represent contrasting views: Consciousness Explained by Daniel C. Dennett which represents the physical/materialist paradigm, and The Problems of Consciousness by New Jersey-based Rutgers University philosopher Colin McGinn and The Conscious Mind by David J. Chalmers, professor of philosophy at the University of California at Santa Cruz, which represent variations of the psychophysical approach.

After spending the summer delving into the thinking of these philosophers and psychologists I became very frustrated and anxious because none of them took into account spiritual entities such as God, the Prophets, and human souls--concepts which are a fundamental part of my religious beliefs and which not only form an integral part of the process/organismic paradigm but are "necessitated" by it. I decided to expand my reading to include The Psychology of Spirituality by the Bahá'í author Hossain B. Danesh, psychiatrist, former professor at the University of Ottawa and presently director of the Institute for International Education and Development in Wienacht, Switzerland. Although this book was not directed to a Bahá'í audience it is based on Bahá'í teachings. The study lead me into a refreshing review of the Bahá'í teachings on consciousness, mind, spirit, and soul and to an understanding of a fledgling, comprehensive paradigm of consciousness which is compatible with the scientific data that is presently at hand.

#### DEFINITIONS AND DESCRIPTIONS OF CONSCIOUSNESS

The word conscious comes from the Latin prefix con, meaning "with," and the base word scire which means "to know." Hence, to be conscious means "to know with." The natural question is: "to know with what?"--with the brain, with awareness, with unconscious knowledge, with the soul? I found that this question is answered in many different ways by different philosophers and scientists and that the word consciousness is a nebulous term which authors often prefer to describe or characterize rather than define. The elusiveness of this object of knowledge is reflected in Sutherland's offering of a commentary instead of a definition in the 1989 edition of The International Dictionary of Psychology:



Consciousness: The having of perceptions, thoughts, and feelings; awareness. The term is impossible to define except in terms that are unintelligible without a grasp of what consciousness means. Many fall into the trap of confusing consciousness with self-consciousness--to be conscious it is only necessary to be aware of the external world. Consciousness is a fascinating but elusive phenomenon: it is impossible to specify what it is, what it does, or why it evolved. Nothing worth reading has been written about it.

According to Chalmers there are only two types of consciousness: phenomenal consciousness, the focus of which is "subjective experience" and psychological consciousness, the focus of which is "conscious awareness and behavior." I find these categories to be adequate with the possible exception of a third category referred to as "the contents of consciousness" which is also an area of research and philosophical consideration (Weintraub 137-38).

Phenomenal consciousness can be viewed as "the subjective quality of experience" expressed by the phrase "what it is like" to be a particular thing--a bat, a human, a stone, a computer, an electron, etc. (Chalmers 4).<sup>a</sup> Other closely related terms include "experience," "qualia," and "phenomenology" (6).

Types of phenomenal consciousness or conscious experiences include: visual, auditory, tactile, olfactory, and gustatory experiences; experiences of hot and cold; pain; other bodily sensations such as hunger pangs, itches, tickles, and the urge to urinate; mental imagery; conscious thought (something it is like to have such and such a thought); emotions; the sense of self; dreams; arousal and fatigue; communion with God [my addition]; and various combinations of the above such as music and emotion (Chalmers 6-10).

But what about physical beings other than humans? Do they have subjective experiences? Is there something that it is like to be a black stone in the sun that feels different from being a white stone in the sun? Can you imagine feeling the difference? If phenomenal consciousness can be viewed as a characteristic of life, and all physical entities (mineral, plant, animal, and human) have subjective experiences, then all physical entities can be considered to be alive. This view, in fact, is compatible with Whitehead's philosophy of organism, the Bahá'í teachings, and the views of professionals in various philosophical and scientific fields.

In his antidualistic viewpoint Whitehead states that all actual (physical) entities or occasions have both a physical and a mental pole. At their physical pole they are capable of

---

<sup>a</sup>The phrase "something it is like" was first introduced by Farrell in 1950 and was made famous by Thomas Nagel in 1974 (Chalmers 4).



prehending (absorbing, assimilating) actual (physical) entities such as light, energy, and nutrients. At the mental pole of their reality they are capable of prehending (absorbing/assimilating without conscious comprehension) non-actual (non-physical) influences such as intentions, concepts, and eternal objects. This view reverses the materialist stand which states that, because the basic building blocks of reality are mindless atoms whizzing mindlessly through mindless, empty space, human beings are nothing more than aggregates of mindlessness, machines which are capable of producing the "illusions" of will, consciousness, and love. Whitehead reverses this bottom-up transfer of material attributes by endowing lower-level entities with the human, even divine, characteristics of mentality, will, and self-realization (Lowe 43).

It is through the mental pole that an entity gains some control over its destiny; its becoming; the self-actualization of its potentiality. According to Whitehead: "Self-realization is the ultimate fact of facts. An actuality is self-realizing, and whatever is self-realizing is an actuality" (222). Of course, the degree of control and power of the mental pole increases as one climbs the ontological ladder. Whitehead once remarked that if you want to read a boring autobiography, read that of a stone (Jordan Whitehead lectures).

Albert Einstein, however, became nervous about the implications of such an autobiography at the subatomic level. "I find the idea quite intolerable," he wrote, "that an electron exposed to radiation should choose of its own free will, not only its moment to jump off, but also its direction [emphasis Einstein's]"<sup>b</sup> (Matthews 126). He stated that "hidden variables" must be controlling such behavior. Physicist John S. Bell later produced a theorem proving that if there were such variables they would be capable of affecting events instantaneously anywhere in the universe (Matthews 126). This interconnected, nonlocal nature of the universe was becoming more mystical and psychic, even divine. Einstein strongly disagreed with quantum physics, especially what he termed "spooky action at a distance." In 1935 he produced a thought experiment which, if carried out, would prove that no causal force can travel faster than the speed of light. Finally, in 1982 an indisputable version of the experiment was carried out. Einstein was proved wrong. Simultaneous action at a distance is a property of the universe (Sharpe 28). Attributing "intention" or "will" to a sub-atomic particle may sound too human, but their behavior is definitely not mechanical--the type of interaction expected to be operating amongst non-living, unconscious, solid particles.

The idea that all entities at all ontological levels in creation are alive is supported by authorities in other fields of

---

<sup>b</sup>Interjections within brackets (as opposed to parenthetical statements) throughout this paper are not the quoted author's words, but mine.



human endeavor. Chemist Cyril Ponnampereuma has concluded that "in everything there is a certain measure of life" (Weintraub 4). The Bahá'í writings<sup>c</sup> also confirm this viewpoint:

As to the existence of spirit in the mineral: it is indubitable that minerals are endowed with a spirit and life according to the requirements of that stage. This unknown secret, too, hath become known unto the materialists who now maintain that all beings are endowed with life, even as He saith in the Qur'án, "All things are living." ('Abdu'l-Bahá, Bahá'í World Faith 338)

Psychiatrist Hossain B. Danesh succinctly expressed this "aliveness" in terms of being conscious: "In everything there is a certain measure of consciousness, albeit a consciousness that is unaware of itself throughout the chain of evolution until it reaches the human level" (Danesh 190).

Although he does not necessarily include the mineral realm, Chalmers agrees that ". . . one of the things that needs to be explained about life is the fact that many living creatures are conscious" (109).

In the broadest sense then, consciousness can be considered as an entity's subjective experience, both physical and mental, as experienced by that entity.

A narrower view of this same approach is to attribute the existence of subjective experience to only living entities at the botanical, zoological, and human levels of existence. This, of course, leads to the problem of distinguishing living from non-living entities--a task which science is finding to be increasingly difficult.

Karl Pribram points out that the word consciousness is also used to refer to that aspect of subjective experience which, as far as we know, is unique to the human species and is commonly referred to as self-awareness. In psychology this type of consciousness is differentiated by degrees of self-consciousness: unconscious processes, subconscious processes, and conscious processes (Weintraub 137-38). Psychiatrist M. Scott Peck refers to this use of consciousness as "the capacity of awareness we assign to that portion of the mind we call conscious or consciousness" (280). For University of Iowa neurologist Antonio Damasio consciousness is "a concept of your own self, something that you reconstruct moment by moment on the basis of the image of your own body, your own autobiography and a sense of your intended future" (Lemonick 42). Carl Jung adds to this analysis another type of consciousness called "the collective unconscious," the common conscious of humankind, contact with which gives us access to the wisdom of the experience of our

---

<sup>c</sup>The authoritativeness of these writings will be discussed later.



ancestors without ourselves having the personal experience (Peck 252). David Chalmers would lump all of the above, with the exception of the collective unconscious (which he probably would not acknowledge), into the category of psychological consciousness (26).

Chalmers stresses the importance of differentiating psychological from phenomenal consciousness. The phenomenal concept of mind focuses on the way consciousness feels while the psychological concept of mind emphasizes what consciousness does. They are easily confused because they occur simultaneously. Phenomenal consciousness can also be related to the ideas: "a consciously experienced mental state" and "to feel a certain way" (11). Psychological consciousness can be related to these notions: "mind as the causal or explanatory basis for behavior," "mind as the internal basis for behavior," and "mental states which are not necessarily conscious" (11). Chalmers relates psychological consciousness strongly to the notion of "degrees of awareness." The following could possibly be considered to be types of awareness:

Awakeness: "an ability to process information about the world and deal with it in a rational fashion." Awakeness could be viewed at one end of a continuum which passes through sleep and on to coma. The degree and quality of "awareness" in these states varies greatly.

Introspection: becoming "aware of the content of our mental states."

Reportability: the "ability to report the contents of our mental states."

Self-consciousness: the "ability to think about ourselves," having "access to a self-model."

Attention: "when a significant portion of [one's] cognitive resources is devoted to dealing with the relevant information."

Voluntary control: when "a behavioral act is performed deliberately" and "is caused in the appropriate sort of way by an element of prior thought."

Knowledge: consciousness of "a fact," "of a thing precisely when [one] knows about that thing" (26-27).

Some of these psychological "states of consciousness" such as sleep, waking, attention, and voluntary control pertain to animals as well as human beings. The others are unique to humans, or, at least we could say that we experience them to a relatively extreme degree. Maharishi Mahesh Yogi, the founder of transcendental meditation, speaks of even higher, meditative states of consciousness. Also, it is common for spiritual



teachers and mystics to refer to states of consciousness which are unique to the prayer state--the mystic feeling of union with the Creator while communing with Him/Her.

Each of these types of consciousness and their sub-categories represents a vast area of investigation and research in such diverse fields as philosophy, psychiatry, cognitive psychology, artificial intelligence, neurobiology, and others.

## THEORIES OF CONSCIOUSNESS

It is beyond the purpose and scope of this survey-level, learning module to review every known theory of consciousness. Instead, I have decided to simplify (probably oversimplify) the terrain by lumping all theories into three broad categories and discussing the views of one or more representatives of each. However, before I do this, in order to give you a feel for the vast range and diversity of views, I will present a cursory overview of category types as gleaned from David Chalmers's The Conscious Mind.

Chalmers sees theory types ranging from "solipsistic theories (in which only "I" am conscious) to panpsychist theories (in which everything is conscious); from biochemicalist theories (in which consciousness arises only from certain biochemical organizations) to computationalist theories (in which consciousness arises from anything with the right sort of computational organization)" (216).

He identifies nine distinct categories of theories and their principle proponents:

Biological materialism: Hill, Searle.

Physicalist-functionalism: Shoemaker.

Psychofunctionalism: Block, Clark.

Anomalous monism: Davidson

Representationalism: Dretske, Harman, Lycan, Tye

Consciousness as higher-order thought: Rosenthal

Reductive teleofunctionalism: Dretske

Emergent causation: Sperry, Alexander, McLaughlin, Sellars, Meehl

Mysterianism: Nagel, Jackson, McGinn (375-79)

In this scheme Dennett's explanation would be classified as a type of reductive teleofunctionalism. Chalmers's theory could be considered as a mild form of mysterianism, but more exactly a form of property dualism which he terms natural dualism--a tenth category. Keep in mind that within each category there is a range of stances. Hence, confusion abounds.

To simplify matters, Chalmers makes a further categorization into three types: A, B, and C:



#### TYPE-A

Stance: "Everything there is to be explained about consciousness can be explained by explaining the performance of various functions"; includes eliminativism, behaviorism, and various versions of reductive functionalism.

Representatives: Armstrong, Dennett, Lewis, Ryle, Dretske, Rey, Rosenthal, Smart, White, Wilkes.

#### TYPE-B

Stance: "Consciousness cannot be reductively explained, but is physical nevertheless"; nonreductive versions of materialism.

Representatives: Levine, Loar, Byrne, Flanagan, Hill, Horgan, Lycan, Papineau, Tye, and van Gulick.

#### TYPE-C

Stance: "Consciousness cannot be reductively explained, but might be nonreductively explained in terms of further [higher-order] laws of nature"; "Various kinds of property dualism, in which materialism is taken to be false and some sort of phenomenal or protophenomenal properties are taken as irreducible."

Representatives: Campbell, Honderich, Jackson, H. Robinson, W. Robinson, Sprigge, and Chalmers (166).

McGinn would fall in Type-C. Some of the people might object to their placement in Chalmers's scheme, but it is helpful nevertheless.

In my own classification scheme which follows, I have lumped Type-A and Type-B into a strongly materialistic category which I call the physical paradigm. The stances of its representatives range from the denial of the existence of consciousness to the view that the brain produces consciousness, but it is, nevertheless, illusory and acausal. In the materialistic view there is nothing in reality beyond matter and all mysteries are physical mysteries.

The Type-C view of consciousness I have termed the psychophysical paradigm which includes the natural dualists such as Chalmers, the emergent causationists such as Sperry and the mysterians such as McGinn. The psychophysical paradigm is a weaker materialistic stance which views consciousness as an emergent phenomenon of the natural world. It admits that consciousness exists and that there is something "mysterious" about conscious experience; about how "a physical system such as a brain" can "also be an experience"; about why there should be "something it is like to be such a system" (Chalmers xi); that



there is something "over and above the physical" (Wright 48). However, within this class, views vary in regards to whether consciousness possesses causal power over the lower-level systems of the brain/body. Both of these paradigms are materialistic in the sense that the human reality is viewed essentially as matter and human consciousness is viewed as a "natural phenomenon like motion, life, and cognition" (xiv).

After studying these categories I decided that I needed to open a third class of views, unrecognized by Chalmers, which I call the physical-psychospiritual paradigm. Its stance is (1) that there are non-actual, ontological levels beyond the physical which include God, the Prophets of God, and human souls; (2) that the human reality is essentially spiritual rather than material or "natural" in nature; (3) that consciousness is an aspect of the human spirit or soul which is intimately and continually connected to the body/brain during this earthly life; (4) that there is two-way, down-up and up-down causation between the soul and the body/brain; and (5) that after death there is a disembodiment of the conscious, perceiving, rationale soul which continues to exist eternally in other spiritual worlds. The representatives of this paradigm are Bahá'u'lláh, Danesh, Whitehead, Jung, and Peck while Laszlo could be considered a sympathizer. This paradigm contains descriptions and definitions of consciousness which subsume and go beyond those discussed previously. They will be explained in the section on the physical-psychospiritual theory of consciousness.

What follows is a discussion of these three paradigms of consciousness: physical, psychophysical, and physical/psychospiritual. The authors and their views have been somewhat ordered from the most to the least materialistic in outlook.

## PHYSICAL THEORIES OF CONSCIOUSNESS

Physical theories of consciousness are also referred to as being "material" or "mechanical" or "mechanistic" in nature. They view reality as consisting only of billiard-ball-like solid particles which can be sensed directly or indirectly via various apparatuses--our sense organs or their extensions such as electron microscopes, cloud chambers, telescopes, and radar. In this paradigm the brain is perceived as producing consciousness in the same way that an orange produces juice. Consciousness is seen as epiphenomenal--as merely an "evanescent by-product of more mundane, wholly physical processes--much as a rainbow is the result of the interplay of light and raindrops" (Lemonick 37). This reductive, microdeterministic view of the physical world and, by inference, personhood, began with the insights of Isaac Newton in the latter part of the 17th century and continued to lock science in materialistic logic for 200 years (Sperry 881). During this time the materialists tried to locate the seat of consciousness in the brain; what is referred to as the Cartesian



Theater<sup>d</sup>, the "ultimate observer" where "it all comes together" (Dennett 106-7). However, no "juice" nor any movie theater were to be found. The materialists gradually retreated from mechanical models to physical metaphors to explain what is sometimes referred to as "the illusion of consciousness." In other words, they admit that it exists, but its existence is "a false reality" produced by the brain.

When psychology split off from philosophy, in order to establish the field on a scientific foundation, the materialistic paradigm was chosen. The inherent disregard for the "three big illusions"--consciousness, free will, and values--because they were considered to be unreal, acausal, and only epiphenomenal; led to their ostracism from psychology in particular and from science and philosophy in general. In psychology the result was the flowering of the behaviorism of B.F. Skinner et al. which dominated psychology for half a century (Sperry 881; Nelson 103). Behaviorism gave no importance to the phenomena of consciousness: intentions, motives, goals, ideals, values, etc. Its units of study were stimuli and observable, behavioral responses. In this materialistic view behavior can be comprehended and predicted by understanding the patterns of positive and negative reinforcement in the life of a person.<sup>e</sup> Some behaviorists went so far as to deny the existence of any type of mental state. Some allowed for mental states in their theories but denied the existence of consciousness. Others recognized the existence of consciousness but considered it irrelevant to the psychological explanation of behavior (Chalmers 13).

The behaviorist-materialist era lasted well into the 1960's when a more wholistic, psychophysical paradigm appeared. (I will discuss this in the next section and will refer to the views of Chalmers, McGinn, and Sperry as representatives of this "new mentalism" [Sperry 881].) But the majority of scientists and philosophers still operate within the physical/materialistic paradigm of consciousness. One of them is Dennis Dennett, Director of the Center for Cognitive Studies at Tufts University who published two theories of consciousness; one in 1978 titled Brainstorms, Philosophical Essays on Mind and Psychology and a second attempt in his most recent book Consciousness Explained. Dennett's is a cognitive model of consciousness which draws on models developed by people in psychology, neurobiology,

---

<sup>d</sup>A reference to the dualistic, body/ mind views of René Descartes: that there is an "immaterial, somewhat autonomous soul that steers the body through life" (Wright 45).

<sup>e</sup>I think it is important to note that education, when it too tried to become more scientific in its approach, drew, and continues to draw, heavily from psychology. Hence, education, particularly American education, has also passed through a nearly fifty-year era of being unduly influenced by behaviorism and materialism. And the detrimental effects continue to haunt us.



Artificial Intelligence (AI), anthropology, and philosophy (254).

According to Dennett reality is limited to the contingent world:

The prevailing wisdom, variously expressed and argued for, is materialism: there is only one sort of stuff, namely matter--the physical stuff of physics, chemistry, and physiology--and the mind is somehow nothing but a physical phenomenon. In short, the mind is the brain. According to the materialists, we can (in principle!) account for every mental phenomenon using the same physical principles, laws, and raw materials that suffice to explain radioactivity, continental drift, photosynthesis, reproduction, nutrition, and growth. (33)

He opposes dualism--the idea that mind is something distinct from the brain--and goes to great pains to try to prove that consciousness can be accounted for without appealing to a "ghost in the machine."<sup>4</sup> He does this while acknowledging that "unquestionably eminent authors" such as Popper, Eccles, Koestler, and Vendler uphold some form of dualism (33).

The following are key aspects of Dennett's theory of mind followed by brief explanations and commentary.

There is no single, definitive "stream of consciousness," because there is no central Headquarters, no Cartesian Theater where "it all comes together" for the perusal of a Central Meaner. (253)

Descartes posited that the pineal gland is the seat of consciousness. There are neuroscientists today who presuppose that there is a space in the brain where visual, auditory and other information are "bound together" on the "soundtrack" of consciousness. Nevertheless, most scientists agree that there is no such space (257-8). This finding sent materialists back to the drawing board of theory. (This theory of Dennett is one of the latest materialistic attempts.) It stimulated other philosophers to create the gestalt-like, psychophysical paradigm of consciousness. And, as you will see later, this finding, that there was no place in the brain where "it all comes together,"

---

<sup>4</sup>This term will become increasingly important in this discussion of consciousness. It is commonly used by those who write about the topic. It was made famous by Gilbert Ryle in his landmark book The Concept of Mind published in 1949. Ryle derisively attacked the idea of a human soul, as set forth by René Descartes, as the dogma of the "ghost in the machine." The book led to the suppression of discussion and investigation of even soul-like phenomenon such as mind, consciousness, and subjective experience (Wright 45).



was anticipated by the biopsychospiritual thinkers. To them it was no surprise. The data were accounted for by their paradigm which admits the existence of a supernatural yet body-connected soul.

Dennett continues:

Instead of such a single stream [of consciousness] (however wide), there are multiple channels in which specialist circuits try, in parallel pandemoniums, to do their various things, creating Multiple Drafts as they go. Most of these fragmentary drafts of "narrative" play short-lived roles in the modulation of current activity. . . (253-54)

In this statement Dennett sees many small "agents" (specialist circuits) competing for attention. The agent which shouts the loudest then plays the leading role in directing later processing (Chalmers 114). The term "parallel" is drawn from AI's use of computer software and hardware as a model for the mind's processing of information. The brain is wired for parallel rather than serial processing of information. Processing information simultaneously in parallel circuits is on the cutting edge of computer programming. Because the computer is now the most complex information-processing device which humankind has created (and consequently understands), it is becoming increasingly used as a metaphor for understanding phenomena such as long and short-term memory, brain vs. mind functions, and reasoning. (Later I will discuss the strength and weakness of using metaphors to understand complex phenomena.)

The term "pandemonium" is used to convey the idea that behind the "myth" of a single stream of consciousness there is a chaotic competition of circuits; voices; or functional homunculi ("little men"). For Dennett this is "closer to the truth than a more dignified, bureaucratic model would be" (251). His pandemonium theory posits lots of "duplication of effort, waste motion, interference, periods of chaos, and layabouts with no fixed job descriptions" (261).

In step with this image is the Multiple Drafts metaphor. It is an alternative to the Cartesian Theater idea and is drawn from the work of Roger Schank who explores the relationship of AI, narrative, and story-telling (Dennett 258). According to Dennett, "information entering the nervous system is under continuous 'editorial revisions'" (111). He cites various perceptual studies which demonstrate that we are unaware of the multifariousness of our perceptual processes; that our experience of a single stream of consciousness and a final state of being conscious of anything is an illusion. One of his examples is the experience of perceiving a soprano voice in the middle of phenomenal space when, in reality, the information is being processed from a stereo device through the left and right ears. The perception of "mid-space" is not real; it is an "edited" perception (130). The single stream of consciousness is really



multiple streams, channels, drafts, or tracks which compete with and interact with one another to produce a report of a perceived state of consciousness which is subject to "various additions, incorporations, emendations, and overwritings of content . . . in various orders" (135). Separate tracks such as semantic readiness, perceptual set, emotional state, behavioral proclivities, and so forth are considered to effect and be effected by one another. For Dennett there is no single place in, or part of, the brain where information finally comes together. There is no movie projector, no movie screen, nor any audience in the brain. Rather, various parts and functions of the brain are creating the mental experience "pandemonium-style" throughout the brain.

Dennett states:

. . . but some [specialist circuits] get promoted to further functional roles, in swift succession, by the activity of a virtual machine in the brain. The seriality of this machine (its "von Neumannesque" character) is not a "hard-wired" design feature, but rather the upshot of a succession of coalitions of these specialists. . . (Dennett 254)

"Specialist circuits" refers to the more limited and primitive purposes of the brain's functions as they first evolved. Dennett postulates that over time, as consciousness has evolved, it has used these more primitive circuits to carry out more advanced functions. Analogously we can consider the human hand which first evolved for the specialized function of grasping food and self-defense. Later, the same member was used to grasp tools and still later to caress a spouse or offspring as a sign of love, forgiveness, or sympathy. (I find this aspect of the theory fascinating and useful.)

The term "virtual machine" does not refer to the "hard-wiring" of the brain. It is a metaphor for software programs which carry out different tasks using the same "plastic" hardware. For example, on the same circuitry of a computer, you can operate various "virtual machines" such as a word processor, a calculator, a data-base filing system, and a game. Analogously, the brain uses the same neuroanatomical systems to perform various simple and complex functions.

The "von Neumannesque" character of brain functioning is a reference to John von Neumann who took Alan Turing's theoretical work based on his World War II development of electronic code-breaking machines, and made it concrete enough to develop the first actual electronic computer. A key feature of the system is the "von Neumann bottleneck" where all data must pass single file through a narrow gap. Only one value, such as a number, and one instruction, such as "add," can appear at any one time. All computers, even the largest main frames, have retained this feature. The evolution of computers has, consequently, depended on the "speed" with which data can pass through the von Neumann bottleneck.



Dennett points out in the above section of his theory that the brain "functions" in this simple, serial manner in spite of being hardwired with complex, parallel circuitry. He believes that this is so because consciousness is a recent, evolutionary development which has not yet reached a point where it can take full advantage of its parallel circuitry.<sup>9</sup> It is interesting to note that the AI people who are developing computers with parallel circuitry have a hard time programming them because they cannot retrace the processing steps in terms of first, second, next, and so on because so much is happening at once.

In short, several specialized functions work together to produce the serial processing effect. Indeed, our everyday experience informs us that thinking is often a slow, step-by-step process.

Back to the theory:

The basic specialists are part of our animal heritage. They were not developed to perform peculiarly human actions, such as reading and writing, but ducking, predator-avoiding, face-recognizing, grasping, throwing, berry-picking, and other essential tasks. . . (254)

This passage was explained to a certain extent above. I want to clarify that when Dennett speaks of "specialists" he is referring to any type of brain/mind "unit" which has a narrow-to-broad function. These units are variously referred to as homunculi, demons, agents, modules, cortical neuron groups, or tracts. He believes that even "larger functions can be accomplished by organizations of units performing smaller functions" (262).

Nevertheless, Dennett acknowledges that there are eminent thinkers such as the philosopher of psychology, Jerry Fodor, who acknowledge lower-level, cortical modules which perform specialized, yet flexible functions, but find no particular cortical module which perform larger cognitive functions such as "what to do next, reasoning about hypothetical situations, restructuring one's materials creatively, revising one's world view." Fodor acknowledges the existence of a "mysterious central facility" (Dennett 260):

A lot is known about the transformations of representations which serve to get information into a form appropriate for central processing; practically

---

<sup>9</sup>What Dennett fails to explain adequately is the reason why a complex, parallel-circuited cortex evolved if it only operates serial software. He describes the Great Encephalization which started two and a half million years ago; ended 150,000 years ago; was supplemented with specialized language functions very recently; and led to the quantum leap in civilization during the past 10,000 years (190). However, the causes of this "explosion" in the evolution of the human cortex are left unexplored.



nothing is known about what happens after the information gets there. The ghost has been chased further back into the machine, but it has not been exorcised. (Fodor 127)

Dennett's model of consciousness continues:

They [the specialist demons] are often opportunistically enlisted in new roles, for which their native talents more or less suit them. The result is not bedlam only because the trends that are imposed on all this activity are themselves the product of design. Some of this design is innate, and is shared with other animals. But it is augmented, and sometimes even overwhelmed in importance, by microhabits of thought that are developed in the individual, partly idiosyncratic results of self-exploration and partly the predesigned gifts of culture. Thousands of memes, mostly borne by language, but also by wordless "images" and other data structures, take up residence in an individual brain, shaping its tendencies and thereby turning it into a mind. (254)

When Dennett refers to the "native talents which more or less suit" the cortical modules, he is drawing on the research of neuroscientists which indicates that the specialization of neuron groups is moderate. Their functions are often quite complex and varied, nevertheless, certain tracts appear to "care more about" color or location or motion, for example.

Dennett's reference to "microhabits" developed by self-exploration or transmitted through culture is equivalent to his "memes," a concept which I find fascinating. The term "meme" is a shortened form of the Greek root "mimeme" and, in this context, means a "unit of memory." Memes are not simple ideas such as red, hot, and cold, but, rather, complex, transmittable, cultural units or ideas such as tunes, catch phrases, inventions, fashions, ways of making pots and building arches, cooperation, returnable bottles, hijacking of airlines, the Odyssey, computer viruses, etc. Memes are the mental/cultural equivalent of DNA genes. They can replicate themselves and spread throughout a culture and the world through communication, imitation, learning, and education. They can evolve through adaptation, modification, and creativity. Memes alter significantly the competence of the organism. Their replication depends on human beings valuing them and giving them importance. Memes are housed in pictures, books, and sayings, but principally in human minds. Without their embodiment in these human mediums and someone to care, physically and mentally, about their replication, they become extinct.

Memes can be structured or invented by human minds and, in turn, they can restructure minds through culturally propagated ways of perceiving, moving, feeling, thinking, and intending. The value of a meme needs to be judged by eternal ideals such as goodness, truth, and beauty which are memes themselves. Our



existence is not independent of these ideals which help us to decide individually and collectively which memes to assimilate; to reject; or to propagate through the media and the educational system. The evolution of civilization has taken tremendous strides during the last 100,000 years due to the evolution of memes. In Dennett's view, it is these memes which turn the hardware of the brain into the software of the mind, shaping its perceptions, its tendencies, and the nature of its consciousness (Dennett 200-210).

In summary, Dennett views the orderly, Joycean stream of consciousness as being produced by subpersonal components or units. The perception that we are a distinct self which integrates all of the various components of information flow, is illusory. The software of the mind, the virtual machine loaded onto the brain's hardware is responsible for the sense of consciousness. There is no "marvelous mystery." There is nothing "over and above" this Stream of Consciousness machine. We are machines.

And so I hereby declare that YES, my theory is a theory of consciousness. Anyone or anything that has such a virtual machine as its control system is conscious in the fullest sense, and is conscious because it has such a virtual machine. (Dennett 281)

David Chalmers critiques Dennett's theory on the basis of the two basic views of consciousness which were explicated in the first section: psychological vs. phenomenal consciousness. Chalmers claims that Dennett has explained "psychological" consciousness, i.e., what consciousness does, but not "phenomenal" consciousness"--why consciousness feels the way it feels:

On the face of it, the model is centrally a model of the capacity of a subject to verbally report a mental state. It might thus yield an explanation of reportability, of introspective consciousness, and perhaps of other aspects of awareness, but nothing in the model provides an explanation of phenomenal consciousness (although Dennett would put things differently). (30)

It [Dennett's model] also provides a potential explanation of the focus of attention. It gives a provocative account of some of our cognitive capacities, but it goes no further than [Dennett's] previous [1978] model in telling us why there should be conscious experience in the vicinity of these capacities. (114)

Chalmers states further that Dennett avoids two tough questions: (1) "why there should be something it is like to be a system undergoing these [cognitive] processes" and (2) why there should be conscious experience while one is reporting the



contents of one's internal states; while one is bringing perceptual information to bear on the control of behavior; while we are introspecting on our internal states; and while we are focusing our attention (113-14).<sup>b</sup>

I agree with Chalmers that Dennett's account illumines some aspects of consciousness but not everything. The scientific research and information which Dennett brought to bear on the discussion deepened my understanding of the unreliability of our perceptions and memory in relation to awareness. In fact, it was his demystification of our trust in our conscious experience that lead me to pose the question, "Then what sources can we trust in our pursuit of knowledge?" (I will address this question later in the section "A Phenomenological/ Epistemological Basis for the Bahá'í View of Consciousness.")

My own critique of Dennett's theory lies in two areas: his pretentious conclusiveness that consciousness can be completely explained (and that he actually did the job), and, secondly, that Dennett's explanation of the human reality is exactly backwards; that there is a distinct self or conscious soul which operates through the brain to give life to and coordinate the multitude of highly complex brain/ body processes, and to accomplish its God-given purposes. My clarification and justification of these two objections will be presented later in this paper.

#### PSYCHOPHYSICAL THEORIES OF CONSCIOUSNESS

As we have seen thus far, in the physical (materialistic, reductionistic) paradigm of consciousness, the conservative stance negates the very existence of mind and consciousness while the most liberal stance contends that consciousness and mind exist but they are the brain and vice versa. In the materialistic/ mechanistic stance, the activity and behavior of any entity can be understood by examining its parts. And since the parts are atomistic, then all activity/ behavior at even the highest ontological level, i.e., human beings, is caused by the action of lower-level atoms. This is the bottom-up perspective of causation which does not allow a causative role for consciousness. This viewpoint was the dominant framework for nearly two hundred years and its progeny in psychology is behaviorism which dominated the field for fifty years until the upper 1960's (Sperry 880-81).

During the past twenty years an expanded psychophysical paradigm of consciousness has gained sway. In this section I will discuss the work of three of its representatives: David Chalmers, Roger W. Sperry, and Colin McGinn.

---

<sup>b</sup>I believe that is the very positing of these difficult, almost metaphysical questions which caused Dennett to label Chalmers's The Conscious Mind "a major misdirector of attention, an illusion generator" (Wright 45).



David Chalmers:

The philosopher David Chalmers has proposed what he considers to be the beginnings of a "psychophysical" theory of consciousness. It is beyond the scope of this paper to give a comprehensive explanation of his proposal. Instead, I will try to explicate what I consider to be the key principles underlying his theory; the ones that are especially pertinent to the discussion.

The psychophysical view which Chalmers advocates is called "naturalistic dualism." It is naturalistic in the sense that "everything is a consequence of a network of basic properties and laws." Consciousness is explained in terms of these "basic naturalistic laws." Chalmers believes that there is "nothing especially transcendental about consciousness; it is just another natural phenomenon." His theory avoids all transcendental elements; is committed to the "physical causation of behavior" and contains no "commitment to a ghost in the machine" (128).

Chalmers emphasizes that his form of dualism is naturalistic; that it is not the variety which acknowledges two separate entities: body and mind. Rather, he views consciousness as "an emergent property" which is unpredictable given only the lower-level properties of the brain/ body. The emergent properties of consciousness are so unique that they operate under a different set of "psychophysical laws." But, he states, "they are physical all the same" and are still "logically supervenient [more on this term later] on lower-level facts." Hence, if you organize all of the "physical facts" of the human body/ brain, consciousness will emerge (129).

This "emergent from the physical" explanation of consciousness leads to an affirmative answer to the question: Can machines be conscious? Chalmers incorporates this view in his theory as the principle of "nonreductive functionalism" which states that "if one system with fine-grained functional organization  $F$  has a certain sort of conscious experience, then any system with organization  $F$  has those experiences" (274). Hence, if we, bit by bit, replace our cerebral neurons with silicon chips which perform the same function, then, eventually we will have a conscious mind.

Cognitive systems realized in all sorts of media can be conscious. In particular, the conclusion gives strong support to the ambitions of researchers in artificial intelligences . . . . If nonreductive functionalism is correct, the irreducibility of consciousness poses no barrier to the eventual construction of a conscious computational device. (275)

Consciousness would emerge as the phenomenal feeling, "There is something it is like to be a computing device." Feedback loops, according to Chalmers, could be built in to simulate self-awareness (like a thermostat monitoring the computing device



itself), but not in the human sense of self-consciousness as a being. This is because, according to the same principle of nonreductive functionalism, a brain part would need to be found the function of which is to be observing the whole, and, because such a part has never been located, it could not be replaced.

(Personally, as I shall explain in greater detail later, I find that the principle of nonreductive functionalism can be maintained to a certain extent within the physical-psycho-spiritual paradigm. The difference is that in the latter paradigm the human soul is acknowledged as a distinct, ontological entity whose functions include acting as the controlling, executive factor for the brain and body--the very function which is lacking in all cerebral, neuron groups or tracks.)

Another key principle in Chalmers's theory is "logical supervenience" which states that, "if [higher level] B-properties are logically<sup>1</sup> supervenient [dependent] on A-properties, then there is a sense in which once the A-facts are given, the B-facts are a free lunch. Once God (hypothetically) made sure that all the physical facts in our world held, the biological facts came along for free." He describes materialism or physicalism to hold that "everything in the world [reality] is physical, or that the physical facts in a certain sense exhaust all the facts about the world." His own version of materialism holds that "all the positive facts about the world are globally logically supervenient on the physical facts." His higher, macro-level B-facts are still physical facts. They may be "different facts (a fact about elephants is not a microphysical fact), but they are not further facts" (41). According to Chalmers "logical supervenience removes any residual metaphysical mystery about a high-level phenomenon" (50).

This supervenient quality of consciousness is supported by other researchers. Francis Crick (co-discoverer of the structure of DNA) of the Salk Institute and Cristof Koch at the California Institute of Technology, conclude that consciousness is somehow a by-product of the simultaneous, high-frequency firing of neurons in different parts of the brain." In their view consciousness is generated by the "meshing of these frequencies. . . just as the tones from individual instruments produce the rich, complex and seamless sound of a symphony orchestra" (Lemonick 42).

According to New York University Medical School neuroscientist Dr. Rodolfo Llinas, "electrical signals give rise to consciousness but, in addition to being simultaneous, they are coordinated." Oxford mathematician Roger Primrose argues that

---

<sup>1</sup>Chalmers's use of "logically" is drawn out further in this statement: "If a phenomenon P [such as consciousness] supervenes logically on some lower-level properties [such as the neural firing of brain cells], then given an account of the lower-level facts associated with an instance of P, the exemplification of P is a logical consequence" (48).



consciousness may arise [or we might say "emerge"] from quantum mechanics. For some Artificial Intelligence researchers, the mind is like a parallel-processing computer. Consciousness is the coordinated signal-processing of individual "agents" (42). What was not clear from these reports, however, was whether these researchers would admit the strong, top-down, causal power attributed to consciousness in the psychophysical paradigm as set forth by Sperry.

According to Chalmers, if the principal of logical supervenience holds, then reductive explanation is possible (50). Reductive explanation is another key principle in his theory. It states that "when we give an appropriate account of lower-level processes, an explanation of the higher-level phenomenon falls out." He posits that consciousness is a phenomenon the functions of which can be characterized physically, and, since all physical events have physical causes, there should be a physical explanation for the performance of the functions of consciousness (44). He admits, however, that such an explanation is still lacking: "Even if the appropriate functional organization always gives rise to consciousness in practice, the question of why it gives rise to consciousness remains unanswered" (47). Chalmers acknowledges that "a reductive explanation is not necessarily an illuminating explanation. Rather, a reductive explanation is a mystery-removing explanation" (48); it "eliminates any sense that there is something 'extra' going on" (49). He applies reductive explanation to all higher-order phenomena but admits their poor explanatory power:

It may be the case that some domains, such as those of sociology and economics, are so far removed from the simplicity of low-level processes that illuminating reductive explanation is impossible, even if the phenomena are logically supervenient. If so, then so be it: we can content ourselves with high-level explanations of those domains, while noting that logical supervenience implies that there is a reductive explanation in principle, although perhaps one that only a superbeing could understand. (49)

In regards to whether consciousness possesses causal top-down powers over lower-level neurological systems in the brain and body, Chalmers takes a very cautious stand. At most he sees only a close correlation between conscious experience and physical, biological events:

The very nature of causation itself is quite mysterious, and it is possible that when causation is better understood we will be in a position to understand a subtle way in which conscious experience may be causally relevant.

. . . the question of whether consciousness is causally irrelevant in the production of behavior is a complex



metaphysical issue that is best left open. (177)

There is no evidence for . . . emergent principles of causation. As far as we can tell, all causation is a consequence of low-level physical causation, and "downward causation" never interferes with low-level affairs . . . . at best phenomenal properties [of consciousness] correlate with causally efficacious configurations. (378-79)

This position contrasts sharply with those who acknowledge emergent causation. The views of this group, as exemplified by Roger Sperry, will be examined next.

Roger W. Sperry:

Roger Wolcott Sperry (1913-1994), a psychobiologist known primarily for his extensive split-brain research and the unique capabilities of the brain's left and right hemispheres, spent fifty years pursuing two fundamental questions: Where does behavior come from (nature vs. nurture)? and, What is the purpose of consciousness? He considered himself a reductionist until 1963. In 1964 he presented the research results of his laboratory which indicated that "consciousness was emergent from brain activity" and, more importantly, that "consciousness had a top-down causal control on component neural activity" and, consequently, on behavior (Puentes 941). (As examples, the research in visceral learning and biofeedback used to control heart function and blood pressure come to my mind here.) He felt that this perspective represented a "cognitive revolution"; a "new mentalism" which contributed to the downfall of materialism and behaviorism. He summarizes the psychophysical paradigm in these words:

The contents of conscious experience, with their subjective qualities, long banned as being mere acausal epiphenomena or as just identical to brain activity or otherwise in conflict with the laws of the conservation of energy, have now made a dramatic comeback. Reconceived in the new outlook, subjective mental states become functionally interactive and essential for a full explanation of conscious behavior. (Sperry 879)

An alternative (bidirectional, top-down as well as bottom-up) form of causal determinism was perceived that put mind and consciousness in a functionally interactive, nonreductive, and ineliminable causal role, thus breaking the long-standing impasse and irreconcilable contradiction of the mind-brain paradox. (881)



Reductive microdeterministic views of personhood and the physical world are replaced in favor of a more wholistic, top-down view in which the higher, more evolved entities throughout nature, including the mental, vital, social, and other high-order forces, gain their due recognition along with physics and chemistry. (879)

This sounds very much like the physical and mental poles of Whitehead. The connection between consciousness and the body/brain is viewed as being intimate and causation is a two-way street between the two poles. Hence, material, efficient causation is recognized and accounted for while calling on mental causation to explain anomalies of activity/behavior which could not be satisfactorily accounted for by efficient, atomistic causation alone.<sup>1</sup>

The psychophysical paradigm also sounds Gestalt-like.<sup>k</sup> The whole (consciousness) is greater than the sum of the parts (the neurons). Imagine a poem written with dot-matrix letters. If you place the poem close to your face you notice the micro level dots. But, as you "climb" to the upper levels of letters, words, lines, stanzas, and the poem as a whole, there is much more meaning than that conveyed by the dots alone. And when the reader is moved to the point of tears by the touching significance of the poem, we can hardly say that such behavior was caused solely by the light waves from the dots stimulating the retina and visual centers of the brain.

But at this point we come to a crucial issue. If we begin to remove the dots one by one, the poem, stanzas, lines, words, and letters gradually cease to be. Their existence depends entirely on the existence of the dots. And this is precisely the stance of the psychophysical paradigm; that consciousness, while having its own existence and causal powers, depends on the neural activity of the brain for its being. In the words of Roger Sperry: "Consciousness in this view cannot exist apart from the functioning brain (879). . . . Mental states in this form cannot exist apart from the active brain (880)."

---

<sup>1</sup>In one of his 1981 summer lectures, Professor Daniel Jordan told a story of an encounter between A. N. Whitehead and B. F. Skinner. Apparently Whitehead had little patience for Skinner's narrow-minded, bottom-up explanation of causality. During a conference they were having a discussion. Suddenly, out of the blue, Whitehead waved his hands and stated something along the lines of "hordes of black, creepy spiders descending from the ceiling!" Then he laughed and asked Skinner for a behavioristic explanation of that behavior.

<sup>k</sup>Sperry refers to "one-to-four-dimensional Gestalts" and "space-time pattern factors" in relation to the supervening, causal power of mind over matter (880).



As we shall see later, this view that consciousness "emerges" from brain activity; that consciousness cannot exist without a brain/ body; is precisely the point where the physical-psycho-spiritual paradigm parts company.

Daniel Dennett criticizes Sperry for having set forth "another incarnation of the Cartesian Theater as the 'summit' or 'tip of the iceberg'" and for describing the "background" of consciousness as "a mysterious or recalcitrant feature, defying mechanical explanation, rather than the key . . . to providing a computational theory of what happens" (278-79).

#### Colin McGinn:

Another philosopher whose views are psychophysical in nature is Colin McGinn of Rutgers University. He is considered, along with Chalmers, to be one of the New Mysterians who find consciousness to be something mysterious; to contain something unexplainable; to be something over and above the physical (Wright 45). But the mystery lies entirely within the natural realm, for supernatural phenomena, according to McGinn are false: immaterial substances (the Holy Spirit comes to my mind), divine intervention (McGinn 2), immortality of the soul (although he admits that such a belief is "encouraged by the partial way in which introspection presents mental events" (77), ghosts, telepathy, divine healing, and the like (87). McGinn, like Chalmers, considers consciousness to be a natural phenomenon which arises from the physical brain:

I think we know enough about the universe to know that consciousness did not arise by miracle, by a sudden infusion from a supernatural realm. It arose by natural processes from natural materials--ultimately from expanding matter that formed itself into clumps early on in the history of the cosmos. It postdates life and, apparently, there are good naturalistic reasons for this. It is neither a heavenly dispensation nor an inexplicable quirk of organized matter. (McGinn 87-88)<sup>1</sup>

However, compared to Chalmers, I found McGinn's views to be much more "mysterian." Chalmers, although he admits mystery<sup>2</sup>, is

---

<sup>1</sup>Note that this statement assumes that the mineral ontological level is not alive and possesses no consciousness and the assumption that reality is a machine which would require an "infusion" of a supernatural consciousness if consciousness was not an emergent phenomenon.

<sup>2</sup>"Consciousness arises from the physical somehow but we do not know in virtue of what physical properties it so arises; that is, we do not know what properties enter into the physical side of the connection (Chalmers 243).



willing to get on with the work of theory construction. McGinn, on the other hand, views consciousness to be so mysterious that it defies human comprehension and he thinks that for us to try to understand it "is like slugs trying to do Freudian psychoanalysis." We "just don't have the conceptual equipment" (Wright 45). McGinn states further:

. . . it does not follow that we are intellectually equipped to know how these natural processes came about, what they consist in. . . . The natural facts that enable consciousness to be what, on general grounds, we know it to be, namely a natural phenomenon, transcend our capacity to ascertain these facts. We know there are such facts, but we cannot actually identify them, even in principle. . . . Objectively, consciousness is as natural as anything else in nature, but it is not given to us to understand the nature of this naturalness. . . . we can say that something is natural without being able to say how it is. (88)

Why does McGinn draw what he terms "my despairing conclusion" (12) that there will never be "a science of consciousness" (18); that we are precluded from ever understanding the "causal nexus," the natural property of the brain or of consciousness that accounts for the psychophysical link? The reason he posits is that the scientific endeavor has been successful only with the physical sciences which ground themselves in the collection of perceptual data from the physical world in order to explain physical phenomena. But because consciousness is a psychophysical phenomenon, perception of it is impossible: "Conscious states are simply not . . . potential objects of perception: they depend upon the brain but they cannot be observed by directing the senses onto the brain" (11).

McGinn admits that we do have access to our conscious experiences through introspection but not to the brain processes nor to the psychophysical nexus which is crucial to understanding the connection between brain states and conscious states. Hence, according to McGinn, both perception and introspection are inadequate tools for understanding consciousness (8).

For his final coup de grâce to our ability to understand consciousness, McGinn also rules out inference: ". . . no form of inference from what is perceived can lead us to "the property of the brain from which consciousness emerges" (11). He further states:

Inference to the best explanation of purely physical data will never take us outside the realm of the physical. . . . We shall never get as far away from the perceptual data in our explanations with consciousness. . . . No concept needed to explain the workings of the physical world produces consciousness. (13)



McGinn believes that "nothing . . . in the concept of reality shows that everything real is open to the human concept-forming faculty" (4). Even certain physical phenomena such as parts of the electromagnetic spectrum are imperceptible for human beings. He agrees with the philosopher Thomas Nagel, with Noam Chomsky, and Hume that there are possibly properties that we will never grasp; that will always remain mysterious to us. And he refers to Locke's belief that only divine revelation can help us to understand how the mind creates "perceptions" of material objects (4-5). Hence, for McGinn, "the very structure of our concept-forming apparatus points us away" from understanding the psychophysical nexus of the brain and consciousness. And although he admits that we have made progress in understanding some aspects of the mind, such as theories of language (19); and that consciousness still has "intellectual significance for us"; in spite of its inaccessibility (21); he insists that "our understanding of how consciousness develops from the organization of matter is non-existent" (19): "a deep fact about our own nature as a form of embodied consciousness is thus necessarily hidden from us" (22).

Chalmers takes issue with this position of complete cognitive closure. He believes that it is possible to infer contingent, psychophysical laws which explain the connection between brain states and conscious states: ". . . it is not obvious why we could not use our knowledge of regularities connecting physical processes and experience to infer such laws" (Chalmers 379).

Regarding the attribution of causal powers to consciousness and the human mind, McGinn allows for it, but he believes that we cannot understand it or discover a psychophysical law that describes how it functions because the psychophysical nexus is hidden from us. However, concerning the explanation of behavior, he prefers functionalism over behaviorism because functionalism allows mental states to "cause behavior conditionally upon their (causal) interaction with other mental states." Behaviorism only admits the existence of sensory input and behavioral output. Functionalism accounts for these but also recognizes the intermediary "intra-mental interactions" (188). For functionalists "mental states are taken to be real internal states of an organism, causally responsible for its behavior." They are not "logical constructions out of behavior; they are causes of behavior" (189).

One of the phenomena of consciousness which baffles McGinn is how our minds can "reach out to the objects of experience"; how consciousness "arcs out into the world"; how it "seems to extend an invisible hand into the world it represents"; how the mind "'lays hold' of things out there, mentally 'grasps' them" (40). He despairs that we have "no physical model" to answer the question "how on earth could my brain make that possible?" when "no ethereal prehensile organ protrudes from my skull" (40).

The corresponding mysterious feature of consciousness is how the mind "takes things in." McGinn states that "the brain cannot incorporate the external in the way the mind can"; that



"consciousness . . . appropriates the objective while holding itself aloft from it; it takes the physical in but it refuses to be ruled by it" (43). I will address these phenomena in the section on the physical/ psychospiritual view of consciousness.

In conclusion, I find that there are aspects of the views of these psychophysicalists with which I agree: that much can be discovered about the nature of consciousness; that a theory of consciousness needs to be developed, even though some of the deeper levels of its hierarchical nature may be inaccessible to us in this life; and that consciousness does indeed possess top-down causal powers while also being subject to bottom-up influences. However, there are other aspects with which I disagree: that it is a completely natural phenomenon; that consciousness is supervenient on the physical brain; and that, without the brain, consciousness would cease to exist.

My own stance is that of the physical/ psychospiritual theory of consciousness which I will discuss shortly. However, because this stance is so diametrically opposed to the foregoing materialist positions; and because a spiritual stance is difficult, if not impossible to prove by the scientific method, I have decided to include a section on the phenomenological/ epistemological foundations for my beliefs which, hopefully, will move my statements out of the realm of "personal opinion" and into the land of "plausible explanation."

#### A PHENOMENOLOGICAL/ EPISTEMOLOGICAL BASIS FOR THE BAHÁ'Í VIEW OF CONSCIOUSNESS

As I mentioned at the beginning of this paper, after reviewing the most current thinking on consciousness, I felt frustrated. The field is still currently dominated by materialists and naturalists whose ideas contradict my personal beliefs. This lead me to search further for philosophers, scholars, psychiatrists and scientists who have a more spiritual view of consciousness; one that considers consciousness to be one of the aspects of the rational soul. However, just to present some opposing views which happen to be in accord with my own, I believe, would not be enough.

David Chalmers speaks about the Great Divide between those who are satisfied with the answers to "'easy' problems" posed by psychological consciousness--questions of cognitive and behavioral functions--and those who "hold that there is a further 'hard' problem"--an experience, a feeling which demands a further explanation; if phenomenal consciousness is acknowledged. "After a point" he says, "it is difficult to argue across this divide, and discussions are often reduced to table pounding" (xiii). Time reporter, Robert Wright, in his investigation of research and thinking on the mind amongst basically materialistically-minded scientists and philosophers, referred to this Great Divide in these words: "Consciousness is one of those questions so deep that frequently people with different views don't just fail to



convince one another, they fail even to communicate. The unintelligibility is often mutual" (48). As great as this divide may be, I believe that there is an even Greater Divide between the materialists and those who acknowledge the existence of non-actual, supernatural entities such as God and human souls.

On one side of the Greater Divide are the teeming masses of humanity who are naturally attracted to the Transcendental in life. I have lived amongst these masses in Latin America for more than two decades. I have yet to meet a "campesino," an urban laborer, or an indigenous person who I had to convince that there is a Great Spirit, an Unseen Father/ Mother who watches over us and cares for us. Unfortunately, this is probably because they "depend" on this Great Giver on a day-to-day, hand-to-mouth basis. Even to suggest that there was no "ghost in the machine" would be a cause of laughter.

This popular attraction to spirituality I found expressed, to my surprise, in my own materialistic country in two recent issues of Time. In a TIME/CNN poll of 1,004 Americans conducted by Yankelovich Partners, it was found that 82% believed in the healing power of prayer (action at a distance?) and 64% thought doctors should pray with those patients who request it (Wallis 64-65). In their article "Glimpses of Mind," a team of Time reporters, after summarizing the contradictory and inconclusive propositions of several materialist researchers, concluded by saying, "It may be that scientists will eventually have to acknowledge the existence of something beyond their ken-- something that might be described as the soul" (Lemonick 42).

On the other side of the Greater Divide is the minority; the materialists and naturalists of mainly Western Civilization, especially those with a university education in fields in the physical and social sciences and philosophy who have spent 100 to 300 years trying to rid themselves of superstition, ignorance, and quackery (and rightly so). For example, about one third of U.S. medical doctors say they do not even believe in God (Lemonick 65). A U.S. trained physician, Dr. Howard Fuerst, after curing himself of cancer via the combination of meditation, diet, and Deepak Chopra's variety of Hindu mysticism, said, "My professors would be turning over in their graves. It's a shame more doctors don't listen to him [Chopra]" (Wallis 67). Chalmers conducted informal surveys of university students and academics regarding their beliefs regarding psychological versus phenomenal consciousness. The former was more popular by a two or three to one ratio (xiii). Psychological consciousness is more materialistic in nature, yet both views consider consciousness to be a purely natural phenomena. He reported no one who opposed both views in favor of a spiritual interpretation.

My point is not to favor one side of the Divide or the other. It is not my purpose to pit religion against science; faith against reason; or intuition against logic. Rather, my aim is to uncover the basic harmony of science and religion. The masses are generally ignorant and find it difficult to even express their needs, rights, and aspirations. They are indeed steeped in



superstition. However, it is materialism and its offspring, hedonism, (along with nationalism and racism) which have lead us to the brink of ecological and political disaster. Religion needs science to keep it in touch with reality; a reality which is one, not two; and to keep it from falling into superstition. And science needs religion to guide its purposes in moral and ethical directions always seeking the greatest good for all things everywhere.

But how can a newly conceived, physical/ psychospiritual worldview be brought to the attention of materialists in a scientific, reasonable manner? Chalmers's description of the frustrating experience of "speaking through one another" from opposite sides of the Great Divide, I believe, also applies to the Greater Divide as well:

Ultimately, argument can take us only so far in settling this issue. If someone insists that . . . , then I can only conclude that when it comes to experience we are on different planes. Perhaps our inner lives differ dramatically. Perhaps one of us is "cognitively closed" to the insights of the other. More likely, one of us is confused or is in the grip of a dogma. In any case, once the dialectic reaches this point, it is a bridge that argument cannot cross. Rather, we have reached a brute clash of intuitions of a sort that is common in the discussion of deep philosophical questions. Explicit argument can help us isolate and characterize the clash, but not to resolve it. (167)

Will further brain research help to solve the issues? Colin McGinn thinks not:

It is surely a striking fact that the microprocesses that have been discovered in the brain by the usual methods seem no nearer to consciousness than the gross properties of the brain open to casual inspection . . . . The deeper science probes into the brain the more remote it seems to get from consciousness . . . . Advanced neurophysiological theory seems only to deepen the miracle. (14)

As Fodor stated, the ghost seems only to recede deeper into the machine.

H.B. Danesh, M.D., urges us to move beyond the usual methods for producing knowledge:

While there is no doubt that the scientific method is the best instrument for the advancement of knowledge, there is also no doubt that the parameters of the scientific method, originally established for the study of physics and chemistry and other physical sciences, need to be greatly modified and expanded to meet the



requirements for the study of the spiritual dimension of human life. (113)

To help us move beyond this impasse, I would like to examine an epistemological framework set forth by 'Abdu'l-Bahá, one of the Central Figures of the Bahá'í Faith,<sup>n</sup> in Some Answered Questions. In it He states that there are four methods of acquiring knowledge: by the senses, by reason, by tradition, and through the bounty of the Holy Spirit (297).

'Abdu'l-Bahá discredits perception via the five senses as a reliable source of knowledge because it sometimes portrays illusions, for example, mirages, the center-stage sound of stereo mentioned by Dennett (297), whirling points of light that appear as circles, etc. Dennett does an excellent job of exposing the fallibility of the senses. What we perceive does not always correspond with reality. Ironically, this is also the major source of knowledge of the physical sciences. Sense-based data is so unreliable that research studies must be replicable and oft-replicated by various investigators before perception-based knowledge can be accepted. And even then, widely accepted theories and discoveries have been known to be overturned. Also, as McGinn pointed out, data from the physical realm illumines only the physical realm. Inferences cannot directly be made to psychological or spiritual realms.

Reason, 'Abdu'l-Bahá states, is also unreliable. He explains that different philosophers use logical proofs and arrive at different conclusions, and then later change their views based on logical arguments (298). Chalmers at one time believed in materialism before changing to naturalistic dualism (xiv). Dennett aptly describes the shifting sands of reason and science:

This is a glorious time to be involved in research on the mind. The air is thick with new discoveries, new models, surprising experimental results--and roughly equal measures of oversold "proofs" and premature dismissals. At this time, the frontier of research on the mind is so wide open that there is almost no settled wisdom about what the right questions and methods are. With so many underdefended fragments of theory and speculation, it is a good idea to postpone our demand for proof and look instead for more or less independent but also inconclusive grounds that tend to converge in support of a single hypothesis. We should try to keep

---

<sup>n</sup>'Abdu'l-Bahá was the eldest son of Bahá'u'lláh appointed by Him upon His passing to guide His followers and interpret His Writings. 'Abdu'l-Bahá's explanations were found to be so intriguing that multitudes, high and low, sought His counsel. Among them were: Henri Bergson, Teilhard De Chardin, August Forel, Leo Tolstoy, Alexander Graham Bell, Theodore Roosevelt and Admiral William Peary.



our enthusiasm in check, however. Sometimes what seems to be enough smoke to guarantee a robust fire is actually just a cloud of dust from a passing bandwagon. (257)

In fact, at different points in Consciousness Explained Dennett describes the evolution of his own thinking. The unreliability of reason is also, of course, found in the sciences. Theories are continually undergoing change and the mark of a good scientist is a certain openness to theory modification based on new evidence and further reasoning.

'Abdu'l-Bahá goes on to explain that tradition--such as that found in the Holy Books of the world--is imperfect because our understanding of a tradition depends on interpretation which is based on reason. Personal beliefs based on personal interpretations, He explains, are "not necessarily the real truth" and are "liable to error" (298).

In His final analysis, 'Abdu'l-Bahá states that the "only true method of comprehension which is infallible and indubitable" is through the bounty and "help of the Holy Spirit which comes to man" (299). It is this latter method which I would like to explore further before presenting the physical-psychospiritual paradigm of consciousness.

Although there are eminent philosophers and scientists who accept the physical-psychospiritual paradigm, their research and arguments, as Chalmers and McGinn point out, will probably not resolve the clash of viewpoints. Therefore, I have chosen a different approach, one which was referred to above, namely, John Locke's humble recognition that a divine revelation would be necessary for us to understand perception and consciousness. The Prophet-Founder of the Bahá'í Faith, Bahá'u'lláh, claimed to be inspired by God's Holy Spirit and to possess divine powers which enabled Him, at will, to access all knowledge; past, present, and future.° During His more than forty years lived in exile and/ or imprisonment (1850-1892), He set forth, in more than one hundred volumes, a divine plan for renewing civilization. His laws, ordinances, principles, administrative order, warnings,

---

°Although Bahá'u'lláh exhorts humankind to pursue philosophy and science, His own statements were not based exclusively on perceptual observation, reason and learning, or the interpretation of religious traditions. He claimed, rather, that His explanations were "sent down" from God, that His judgement, explanations, and prophecies are infallible, and that the wisdom of all of His commandments will be borne out in practice. He did not use the scientific method to arrive at conclusions; He never received a formal education; and He never retracted a single statement during the thirty-six years of His ministry. In fact, up until the last years of His life, He continually quoted Himself from memory.



prophecies, prayers, meditations, and explanations will, according to Bahá'u'lláh Himself, guide the personal, social, economic, scientific, and cultural affairs of humankind for the next thousand years and beyond. Indeed, His Faith is, according to the Encyclopedia Britannica (1992) and the World Christian Encyclopedia (1982), geographically the most wide spread religion in the world after Christianity. His followers number more than six million; His international community is considered to be one of the most diverse in the world; and His teachings have attracted the allegiance of such personages as Queen Marie of Rumania, a granddaughter of Queen Victoria; His Highness Malietoa Tanumafili II, King of Western Samoa; the famous Swiss scientist and entomologist Dr. Auguste Forel (his portrait is on one of the Swiss franc bills): and world-renowned American jazz musician John Birks "Dizzy" Gillespie. Others who have paid tribute to Bahá'u'lláh's Faith include Count Leo Tolstoy; the well-known English orientalist Professor Edward G. Browne; the noted French diplomat and brilliant writer Comte de Gobineau; Rev. T. K. Cheyne of Oxford University; Miss Helen Keller; David Starr Jordan, former president of Leland Stanford University; Luther Burbank; Arnold Toynbee, British historian; Dr. George Washington Carver; William O. Douglass, Associate Justice, U.S. Supreme Court; and Ervin Laszlo, the foremost exponent of systems philosophy and general evolution theory.

Bahá'u'lláh has a great deal to say about the nature of God, creation, science, philosophy, reality, and human nature. If He is Who He says He is, the Promised One of All Ages, the Mouthpiece of God for this era, the Omniscient One, then He would possess the type of cognitively unclosed mind which McGinn states would be necessary to understand human consciousness (3). However, what proof do we have that what He says is inspired by the Holy Spirit and, consequently, true and certain? One method is to examine Bahá'u'lláh's prophecies and verifiable statements. If His prophecies have consistently come true and His verifiable statements have been confirmed by science, then we have a phenomenological and epistemological basis, via induction, for the acceptance of His statements regarding human nature. That is, if His statements regarding phenomena a, b, and c prove to be correct, and He claims that His explanations regarding phenomena d, e, and f are true, then we have grounds for believing Him. This, of course, requires a leap of faith, both of the mind and the heart. It is an argument based on logic which, according to the Bahá'í writings themselves, is subject to error. In the last analysis, acceptance of Bahá'u'lláh's teachings regarding consciousness becomes a matter of acceptance via the heart and spirit, not only the mind. Nevertheless, the attempt needs to be made to lay a phenomenological and epistemological basis for at least listening to His explanations.

During my visit (7/96) with David S. Ruhe, M.D., member, during twenty-five years, of the Universal House of Justice, the supreme administrative body of the Bahá'í Faith, I brought up the need for organizing an epistemological basis for using



Bahá'u'lláh's teachings as a guide for philosophizing and carrying out a research program in education. I have been invited to study the possibility of opening a Bahá'í school in the vicinity of the first Bahá'í university in the world (Nur University in Santa Cruz, Bolivia) with an eye to developing it as a laboratory/ demonstration school connected with a future school of education. If I choose to pursue a course of action along these lines, the school of education and its faculty will use the Bahá'í principles and ideals regarding human nature and education to guide its research and program development. In its dialogue and interactions with non-Bahá'í institutions, it will be called upon to clarify and justify its position and approach. Having a strong epistemological argument will be necessary, whether it is accepted by others or not. Dr. Ruhe understood my concern and directed me to a recent publication by Gary Matthews titled The Challenge of Bahá'u'lláh which delineates the fulfillment of some of Bahá'u'lláh's prophecies and statements. It is from this book that I draw much of the material in the following section. Neither my arguments nor Matthews's are complete, but they are a beginning. Hopefully, they will give the reader a glimpse of the grandeur and profundity of Bahá'u'lláh's claim and will incline him/her to take to heart the position of the physical-psychospiritual paradigm of human consciousness. No doubt several dissertations will be required to provide a solid foundation for a university-level undertaking--a mega-research project based on Bahá'u'lláh's writing, thinking, and insights. Indeed, Dr. Ruhe was adamant about the need to do so. According to his analysis, Bahá'u'lláh is the only 19th century writer/ philosopher (although, for a Bahá'í, He is much more than this) whose concepts have not only not been disproved, but have anticipated the cutting edge of all major scientific and social movements. For example, Ervin Laszlo, member of the Club of Rome and the International Academy of the Philosophy of Science, in his book The Inner Limits of Mankind, credits Bahá'u'lláh with having anticipated by a hundred years science's "re-discovery" of the theory of "non-linear evolutionary development" (122).

The approach of Matthews is a logical one: to consider Bahá'u'lláh's prophecies and statements as predictions or hypotheses which can be validated in two, interrelated ways: "striving, with an open mind, to disprove its predictions" and, of course, investigating the degree of correspondence between prophecies and events, and between explanations and the most current scientific research. Bahá'u'lláh Himself, accepts the challenge in these words:

We have laid bare the divine mysteries and in most explicit language foretold future events, that neither the doubts of the faithless, nor the denials of the froward, nor the whisperings of the heedless may keep back the seekers after truth from the Source of the light of the One true God. (Tablets of Bahá'u'lláh 241)



. . . most of the things which have come to pass on this earth have been announced and prophesied by the Most Sublime Pen . . . All that hath been sent down hath and will come to pass, word for word, upon earth. No possibility is left for anyone either to turn aside or protest. (Epistle to the Son of the Wolf 148-50)

What follows is a brief list of prophecies which have come to pass and statements which have gradually been proven true by science. Some of them pertain to The Báb (1817-1850), the Prophet-Herald of the Bahá'í Faith, recognized by Bahá'u'lláh, or to 'Abdu'l-Bahá, the eldest son of Bahá'u'lláh chosen by Him as the infallible expounder of His writings. It can be said that Bahá'u'lláh predicted that the prophecies of not only Himself, but also these other two Central Figures would prove to be true. It is beyond the scope of this paper for me to discuss the historical or scientific evidence supporting each item. The curious reader can refer to the detailed explanations set forth in The Challenge of Bahá'u'lláh.

1. The fall from power of the French Emperor Napoleon III and the consequent loss of his empire.
2. The defeat of Germany in two bloody wars, resulting in the "lamentations of Berlin."
3. The success and stability of Queen Victoria's reign.
4. The dismissal of 'Álî Páshá as prime minister of Turkey.
5. The overthrow of Sultán 'Abdu'l-'Azíz of Turkey.
6. The breakup of the Ottoman Empire, leading to the extinction of the "outward splendour" of its capital, Constantinople.
7. The downfall of Násiri'd-Dín Sháh, the Persian monarch.
8. The advent of constitutional government in Persia.
9. A massive (albeit temporary) decline in the fortunes of monarchy throughout the world.
10. A worldwide erosion of ecclesiastical authority.
11. The collapse of the Muslim Caliphate.
12. The spread of communism, the "Movement of the Left," and its rise to world power.
13. The catastrophic decline of that same movement, triggered by the collapse of its egalitarian economy.
14. The rise of Israel as a Jewish homeland.
15. The persecution of Jews on the European continent (the Nazi holocaust).
16. America's violent racial struggles.
17. Bahá'u'lláh's release from the prison of 'Akká and the pitching of His tent on Mount Carmel.
18. The seizure and desecration of Bahá'u'lláh's House in Baghdád.
19. The failure of all attempts to create schism within the Bahá'í Faith.
20. The explosive acceleration of scientific and technological progress.
21. The development of nuclear weapons.



22. Dire peril for all humanity as a result of that achievement.
23. The achievement of transmutation of elements, the age-old alchemist's dream.
24. The discovery that complex elements evolve in nature from simpler ones.
25. The recognition of planets as a necessary by-product of star formation.
26. Space travel.
27. The realization that some forms of cancer are contagious or communicable.
28. The fruitless search for a 'missing link' between man and ape.
29. The non-existence of a mechanical ether (the supposed light-carrying substance posited by classical physics), and its redefinition as an abstract reality.
30. The breakdown of mechanical models (literal images) as a basis for understanding the physical world (39-41).

The above prophecies and declarations are amongst the most authentic because they can be found in the original Bahá'í writings. They are also the most verifiable. All that is needed is a good library. Many other prophecies were transmitted orally and were recorded by eye witnesses.

Matthews mentions additional categories of prophecies, a full explanation of which is beyond the purpose of this section. One of the other types of prophecies deals with the thousands of predictions made about personal events in the lives of individuals most of whom were Bahá'ís, i.e. followers of Bahá'u'lláh. To Matthew's knowledge and to my own, all of these came true.

Another category of prophecies are those which have not yet been fulfilled. They cannot be used to support Bahá'u'lláh's claim to possess divinely-inspired, infallible knowledge. Nevertheless, they are illuminating because they show His far-reaching vision. For example, Bahá'u'lláh's long-range prophecies include the following:

- "The gradual emergence over centuries of a Bahá'í Commonwealth, the flowering of which will produce a world culture so glorious it cannot today be even faintly imagined" (Matthews 135).
- The appearance some time after the year 2844 of another Manifestation (Prophet) of God who will raise civilization to even greater heights.

There are other prophecies which are short-range in nature and, as they are fulfilled, the phenomenological and epistemological bases for accepting the Bahá'í writings as a legitimate, Holy-Spirit-inspired source of knowledge, will be strengthened. Indeed, some of these predictions describe processes, rather than events, which have already been partially fulfilled. I will mention only a few in order to satisfy the curiosity of the reader:



- During what remains of this century oppression will continue to envelop the earth until a universal convulsion will bring about the establishment of a political peace with the international, governmental mechanisms necessary for preventing wars.
- This stage will be followed by what Bahá'u'lláh refers to as "the Most Great Peace" which refers to the emergence of a truly global society in which all peoples will feel and act like spiritual brothers and sisters and as citizens of a common homeland--planet earth.
- The appearance of a ruler in Persia who will extend protection to the Bahá'ís of that country. (The current regime continues to persecute the followers of Bahá'u'lláh.)
- The Bahá'í Faith will continue to grow and will face increasing opposition as a result of that growth. (136-54).

Although it is beyond the scope of this paper, Matthews discusses other verifiable phenomena which would further support the epistemological foundation for accepting Bahá'u'lláh's statements on consciousness. They include topics such as:

- Bahá'u'lláh's magnetic presence;
- His luminous character;
- His ability to spontaneously reveal verses on any topic with no revision or editing and without having previously studied the topic (This includes not needing to revise His statements in the light of emerging scientific findings and sociological trends.);
- His ability to quote verbatim from works which He had never read;
- His ability to know the thoughts and questions of others without their being expressed and regardless of geographical distance;
- His fulfillment of prophecies found in virtually every major, revealed religion;
- His willingness to continue making His claim and to promote His teachings in spite of over four decades of exile, imprisonment, persecution, and torture; and
- His ability to raise up the Bahá'í community--one of the most widespread, unified, and diverse groups of people on the face of the planet (187-232).

For the reader this may be a first experience of an investigative argument which relies primarily on the thinking of Bahá'u'lláh. I believe, however, that His name will increasingly appear in scientific and philosophical papers and that it will soon become as much of a "household" word as Plato, Einstein, Lenin, Tolstoy, and Descartes. In the next section I will explain the nature of a spiritual approach to understanding consciousness.



## THE PHYSICAL/ PSYCHOSPIRITUAL THEORY OF CONSCIOUSNESS

The physical psycho-spiritual theory (PPST) of consciousness aims at harmonizing scientific findings and religious understandings. It views reality as one. It does not admit duplicity or a dichotomized duality. Reality, and human nature as a part of that reality, is considered to be essentially spiritual. Matter is spirit in disguise. PPST recognizes that there is a two-way, reciprocal, causative relation between the body, the mind, and the spirit or rational soul. It posits the human soul as a non-material entity and "explanatory model" capable of illuminating the nature of human consciousness while accounting for the scientific facts. Matthews states:

If a simple, elegant explanatory model accounts for a large number of facts that previously seemed unrelated, correctly predicts a variety of surprising and unexpected new findings, and survives our systematic attempts to disprove it, then we have every right to place our confidence in it. This is the meaning of 'scientific proof', insofar as the term has any meaning at all. The confidence one attains by this method corresponds closely to that sense of certitude known in religion as 'faith.' (33-34)

The theory or model I am about to delineate and justify, relies, like many scientific endeavors, on the use of metaphor and analogy. But before I proceed I want to discuss the inherent limitations of this approach.

Human language is composed basically of "market place" vocabulary. Primitive humans spent most of their time coping with the physical demands of life such as hunting, food gathering, providing shelter, fabricating clothing, and child-rearing. As intellectual life evolved, the meanings of terms used for material phenomena were expanded in an attempt to communicate abstract realities. Also, the use of analogies from the physical world to illumine intellectual concepts is common, helpful, and probably indispensable. According to Henry M. Wellman, author of The Child's Theory of Mind, "theories, even scientific theories, often are organized analogically around some root metaphor" (271). However, we must keep in mind that whenever this technique is utilized to increase the understanding of human nature, it suffers from an inherent ontological limitation because a higher level of being is usually being described by the attributes of a lower level entity. The study of the hierarchical organization of reality demonstrates that higher ontological levels possess qualities, powers, and functions which are not found at lower levels. This mismatch can lead to extremely limited conclusions. For example, during my undergraduate studies at Ohio State University during the late sixties and early seventies, the laboratories of the psychology department were filled with white mice and one of the most



popular forms of research was to investigate animal behavior and learning and/or apply its results to human behavior and learning from an operant conditioning or stimulus/ response perspective. Positive results were obtained, but, in my opinion, they were over-generalized and intentionally ignored the particularly human factors involved in learning such as will, love, conscious awareness, and values.

This fallacy of drawing on sciences which examine lower-level phenomena was emphasized by Professor Daniel C. Jordan and Raymond P. Shepard in their discussion of the philosophical basis of a Whiteheadian-based, organismic model of education. He states, for example, that Thomas Hobbes asserted that "man seeks pleasure and avoids pain with the same necessity and compulsion that causes a stone to fall downwards"; that J.F. Herbart "drew upon the concept of physical gravity in proposing that the motion of ideas was the basic principle of mental mechanics"; that John Stuart Mill used more advanced ideas from chemistry for his theory of "mental chemistry" which replaced "mental mechanics"; that Francis Galton compared mental testing to "sinking shafts into the mind at critical points to ascertain the stage of development"; and that Freud used a "military model," albeit a more human one, in which "thought processes become tactical military simulations of the anticipated confrontation with reality . . . . Blocked development is compared to the resistance of hostile enemy forces; repression, to retreat in the face of an attack; and psychotherapy, to the intervention of an ally in a civil war" (Jordan and Shephard 24). Dennett, in his Multiple Drafts model draws on analogies from computer science and artificial intelligence. This is appropriate because computers are currently the most complex entities which can be understood by people--because people created them. It is easy to understand the analogies of brain as hardware, cognitive processes as software and information as consciousness. Nevertheless, computers represent a lower, technological level of being. Dennett himself acknowledges that metaphors may be inadequate and become outmoded but, and I agree with him on this point, that they are the best tools we have for understanding a particular phenomena:

My explanation of consciousness is far from complete. One might even say that it was just a beginning, but it is a beginning, because it breaks the spell of the enchanted circle of ideas that made explaining consciousness seem impossible. I haven't replaced a metaphorical theory, the Cartesian Theater, with a nonmetaphorical ("literal, scientific") theory. All I have done, really, is to replace one family of metaphors and images with another, trading in the Theater, the Witness, the Central Meaner, the Figment, for Software, Virtual Machines, Multiple Drafts, a Pandemonium of Homunculi. It's just a war of metaphors, you say--but metaphors are not "just"



metaphors; metaphors are the tools of thought. No one can think about consciousness without them, so it is important to equip yourself with the best set of tools available. Look what we have built with our tools. Could you have imagined it without them? (455)

My own understanding and use of these "tools" is that they are capable of illuminating only a certain aspect of a phenomenon. They will never comprehend its entire essence. Consider, for example, the following metaphor to understand metaphors: the architectural drawings and models of a building. One drawing may be a painting of the facade; another may be a 3-dimensional miniature; another, the floor plan; and still others, the electrical, plumbing, or air-conditioning/ heating plans. All represent something that they are not--the actual building; all help one to obtain a grasp of the structure; but none can communicate the entire reality of the phenomena.

McGinn dwells extensively on the inherent cognitive limitations of the human mind to understand itself. Bahá'u'lláh agrees with this perspective and even extends it to all created things:

So perfect and comprehensive is His [God's] creation that no mind nor heart, however keen or pure, can ever grasp the nature of the most insignificant of His creatures; . . . . The conceptions of the devoutest mystics, the attainments of the most accomplished amongst men, . . . are all the product of man's finite mind and are conditioned by its limitations.  
(Gleanings 62)

Hence, if we are incapable of understanding even an ant, how will we ever understand human consciousness. Although the outlook is bleak and our capacities are limited, Bahá'u'lláh Himself exhorts humanity to carry forward scientific and philosophical endeavors. Moderation, I believe, is the proper approach. On the one hand knowledge can be viewed as what I call "the eternal banana"; we can always peel it back and unveil it, but we will never get to the bottom of it. Hence, we must pursue an ever-increasing understanding of consciousness, but we must do so with the humble understanding that we are, by nature, veiled from attaining complete comprehension. We can continually produce architectural drawings of human consciousness, but we must recognize that for every aspect illumined by an illustration, a new angle, an apt metaphor, or an analogy, other aspects remain hidden and undiscovered.



## THE MACHINE MYTH

In the section on the "Definition and Description of Consciousness" above, the idea was presented that matter is alive; that it experiences a degree of phenomenological consciousness; that it is self-realizing; that it has some control over its destiny; that action at a distance is a characteristic of reality; and that the more deeply matter is penetrated the less it acts like matter and the more mysterious it becomes.

For all three theories discussed thus far--the physical, psychophysical, and physical/ psychospiritual (PPS)--it is unacceptable that there be two forms of reality, natural and non-natural. McGinn, for example, states that a non-natural proposition regarding consciousness is impossible because an "unmediated and unintelligible brute link" would be required to connect the natural brain with a non-natural consciousness, "a mysterious joining of incommensurables" (88). He views the "natural brain" as a machine composed of unconscious matter. It is precisely this concept expressed in the machine metaphor, that is deconstructed by the PPS theory by positing that matter, in its essence, is a spiritual phenomenon.

As early as 1905, Einstein, in his special theory of relativity, described matter as congealed energy. Energy is the capacity to do work. Hence, a stone is a lump of "capacity to do work" (Matthews 125). This sounds to me more like a Zen statement rather than a description of matter. In 1913 Niehl Bohr found that particles teleport. They vanish in one spot and pop up in another; and they are not continuous in time or space, but, rather, they are flashing on and off, here and there. Furthermore, these flashes called quantum leaps appear to be random in relation to their exact distances, direction and timing (125).

At about the same time the "Schrodinger pulse" was discovered in which a single electron could "spread like a wave passing through two slits of a screen at the same time. . . yet any and all efforts to observe it would detect only a pinpoint. Unlike a physical water or sound wave it seemed to operate like a 'mathematical wave function" with no form in physical space" (Matthews 126-7).

Matthews, after his 1993 review of several investigators findings, describes the particle as "nothing more than a ghostly potentiality, a swirl of mutually exclusive possibilities each vying for the right to exist." Each particle is "unpicturable" with no distinct location in space and time (128).

Trying to grasp the more elusive nature of reality, Niehl Bohr stated that "when it comes to atoms, language can be used only as in poetry" (quoted in Ferris, 384).

In the words of physicist Sir James Jeans, "A wide measure of agreement which, on the physical side of science, approaches almost to unanimity that the stream of knowledge is leading towards a nonmechanical reality; the universe begins to look more



like a great thought than like a great machine" (quoted in Wilber, 144).

In her 1994 review of quantum physics as it relates to organizational leadership, Margaret J. Wheatley describes elementary particles as "bundles of potentiality" (34).

Prigogine, in his chemical clock experiments found that a random mix of molecules became coordinated at a certain point in time. A gray solution, for example, would begin pulsating, first black, and then white. "The amazing thing," he writes, "is that each molecule knows in some way what the other molecules will do at the same time, over relatively macroscopic distances. These experiments provide examples of the ways in which molecules communicate. . . . That is a property everybody always accepted in living systems, but in nonliving systems it was quite unexpected" (quoted in Wheatley, 106).

In The Matter Myth Paul Davies and John Gribbin summarize the position of the PPS theory regarding "the matter machine":

Descartes founded the image of the human mind as a sort of nebulous substance that exists independently of the body. Much later, in the 1930's, Gilbert Ryle derided this dualism in a pithy reference to the mind as "the ghost in the machine." Ryle articulated his criticism during the triumphal phase of materialism and mechanism. The "machine" he referred to was the human body and the human brain, themselves just parts of the larger cosmic machine. But already, when he coined that pithy expression, the new physics was at work, undermining the world view on which Ryle's philosophy was based. Today, on the brink of the twenty-first century, we can see that Ryle was right to dismiss the notion of the ghost in the machine--not because there is no ghost, but because there is no machine. (309)

It appears that science has caught up with 'Abdu'l-Bahá Who, sometime between 1904 and the beginning of 1906, stated that objects of human knowledge fall into two categories "sensible realities" and "intellectual realities." Sensible realities are those "things perceptible to the senses" such as the sun, sounds, perfumes, foods, heat, and cold. An intellectual reality, on the other hand, "has no outward form and no place and is not perceptible to the senses." As examples, 'Abdu'l-Bahá refers to such phenomena as the intellect itself and love. Then, he goes on to make a key statement which returns reality to a state of non-dual oneness, but a non-material oneness rather than a material one: "In the same way, nature, also, in its essence is an intellectual, not sensible reality." What then is the "natural" human brain and body? Matthews describes such large-scale objects as vast collections of particles, quasi-abstract entities which augment one another thereby investing the objects with a "semblance of position, motion and recognizable form" (128). It appears, therefore, that even sensible objects operate



as "material" entities only in relation to and in interaction with one another, but their foundation, their essence, is non-material in nature.

#### THE SPACE/ TIME MYTH

I will not go into as much detail on this topic, but, in order to further deconstruct the matter myth, I think that it is important to note that 'Abdu'l-Bahá also anticipated force field theory as it regards the space-time continuum. Briefly, He contradicted the current theory of His time regarding the "ether" that supposedly served as an objective medium through which forms of energy pass. He stated: "Even ethereal matter, the forces of which are said in physics to be heat, light, electricity and magnetism, is an intellectual reality, and is not sensible" (84). The classical, Newtonian physicists of His day would have considered this heresy.

With the development of relativity theory, physics gradually came into harmony with 'Abdu'l-Bahá. Space and time became "relationships among things and events, their measurements varying according to the observer's velocity and frame of reference" (Matthews 117). Space/ time began to be referred to as a "'fabric' that could warp, bend, tear, undulate, close on itself and otherwise undergo astounding contortions" (120). Today Margaret J. Wheatley describes the transition from the fabric to the field metaphor:

Something strange has happened to space in the quantum world. No longer is there a lonely void. Space everywhere is now thought to be filled with fields, invisible, non-material structures that are the basic substance of the universe. [She refers to gravitational fields, electromagnetic fields, and quantum fields (49).] We cannot see these fields, but we do observe their effects. They have become a useful construct for explaining action-at-a-distance, for helping us understand why change occurs without the direct exertion of material "shoving" across space. (48)

A number of prominent physicists have even proposed restoring the discredited term "ether" but with a new, non-material meaning in accord with the usage of 'Abdu'l-Bahá (Matthews 122-23).

#### HUMAN CONSCIOUSNESS: ONE OF MANY POWERS OF THE SOUL

As explained previously, according to the physical/ psychospiritual paradigm, all things are alive and experience phenomenal consciousness, i.e., there is something it is like to be a black rock lying in the sun. Human beings share this type



of consciousness with all created things. However, psychological consciousness, especially the self-awareness aspect of it, is unique to humans. The Bahá'í writings indicate that this type of consciousness is a power of the human soul; that only humans have souls (not minerals, plants, or animals<sup>p</sup>); and that the soul comes into existence at conception, is connected to the body in this life, and continues to exist eternally after its disembodiment at death in other non-material realms of existence.<sup>q</sup>

According to Bahá'u'lláh, the reality of a human being and the force which sustains the life of the body and consciousness is a non-actual, non-material entity known as the human soul:

. . . the soul is a sign of God, a heavenly gem whose reality the most learned of men hath failed to grasp, and whose mystery no mind, however acute, can ever hope to unravel (Gleanings 158-59). . . . It [the soul] is exalted above all egress and regress [i.e. has no location in space]. It is still, and yet it soareth; it moveth, and yet it is still. (161)

It is not susceptible of any change in its original state or character. (160)

. . . the soul of man is exalted above, and is independent of all infirmities of body or mind. That a sick person showeth signs of weakness is due to the hindrances that interpose themselves between his soul and his body, for the soul itself remaineth unaffected by any bodily ailments. . . . When it [the soul]

---

<sup>p</sup>Modern science views humans as only superior animals. The PPS theory, however, views humans as possessing the nature and characteristics of the lower ontological levels while also having unique, higher-order properties such as the soul. Karl Pribram captures this quantum difference in these words: "I'm tempted to say that humans are as different from nonhuman primates as mammals are from other vertebrates. We're not unique in possessing intelligence, but our kind of intelligence is very, very different" (Weintraub 139). According to the Bahá'í teachings there is a mineral spirit, a vegetable spirit, an animal spirit, and a human spirit, but it is only the latter which survives death. The others perish and become annihilated when the entity decomposes (Some Answered Questions 227).

<sup>q</sup>It must be continually kept in mind that the PPST does not completely deny the Newtonian concept of concrete matter. It is a theory, a particular case, which is applicable under certain circumstances but not under others. Newtonian matter/ space represents only one expression of a reality which is spiritual in its essence.



leaveth the body [i.e., is disassociated at death], . . .  
. it will evince such ascendancy, and reveal such  
influence as no force on earth can equal. . . .

The soul of man should be likened unto this sun, and  
all things on earth should be regarded as his body. So  
long as no external impediment interveneth between  
them, the body will, in its entirety, continue to  
reflect the light of the soul, and to be sustained by  
its power. . . . (154)

The soul of man is the sun by which his  
body is illumined, and from which it draweth  
its sustenance, and should be so regarded  
(155).

Extending this metaphor employed by Bahá'u'lláh, if we imagine  
the soul as the source of light which shines through the medium  
of the body and its brain, like a crystal, the effect will vary  
according the formation of the crystal. For example, light  
shining through a bulb produces illumination. Light shining  
through stained glass produces a multi-colored, often aesthetic  
image. Light passing through a magnifying glass can produce  
enough heat to start a fire. Light travelling through glass  
fiber is capable of carrying information. Light filtering  
through a chandelier can produce feelings of aesthetic delight;  
and so on. But, in all cases, the light is one, even though its  
effects are varied.

In the following passage 'Abdu'l-Bahá explains this analogy  
from a different angle in which the light is the single "human  
reality" which manifests itself variously as soul, mind, and  
spirit:

. . . it [the Human Reality] is the same reality which  
is given different names, according to the different  
conditions wherein it becomes manifest. Because of its  
attachment to matter and the phenomenal world, when it  
governs the physical functions of the body, it is  
called the human soul. When it manifests itself as the  
thinker, the comprehender, it is called the mind. And  
when it soars into the atmosphere of God, and travels  
in the spiritual world, it becomes designated as  
spirit. (The Star of the West 190)

Note that here He has also delineated three of the powers of the  
non-material "human reality" or soul<sup>\*</sup>: it controls the body and  
its functions (which would include the brain); it is capable of  
comprehension; and it can move and travel (while not moving at  
all).

---

<sup>\*</sup>In another passage 'Abdu'l-Bahá states, ". . . these two  
names--the human spirit and the rational soul--designate one  
thing" (Some Answered Questions 208).



In another passage 'Abdu'l-Bahá explains that the faculties of the mind (and consciousness, by inference, as a faculty of the mind) emanate from the soul. He also specifies some of the mental powers of the soul:

These faculties [of the mind] are but the inherent properties of the soul, such as the power of imagination, of thought, of understanding; powers that are the essential requisites of the reality of man, even as the solar ray is the inherent property of the sun. The temple of man is like unto a mirror, his soul is as the sun, and his mental faculties even as the rays that emanate from that source of light. The ray may cease to fall upon the mirror, but it can in no wise be dissociated from the sun. (Bahá'í World Faith 346-47)<sup>a</sup>

Elsewhere the Bahá'í writings explicitly state, ". . . the soul retains its individuality and consciousness after death, and is able to commune with other souls" (Hornby, 165).

'Abdu'l-Bahá explains that still another power of the soul is memory (Bahá'í World Faith 317), and that the soul, even while asleep, "is in motion and ever active"<sup>c</sup> and is able to "unravel an intricate problem, incapable of solution in the waking state" (337). "The soul" he says, "acts in the physical world with the help of the body. When it is detached from the body, it acts without an intermediary. . . . The body is the horse, the soul is the rider, and sometimes the rider moves without a mount" (Hornby 164).

As explained earlier Colin McGinn described two mysterious phenomenon which lack explanations: how the mind can "reach out" and "grasp" objects of knowledge and how the mind "take in"

---

<sup>a</sup>From the Bahá'í viewpoint the soul is unaffected by physical illness and much of mental illness is not the problem of the soul (sun) or the mind (rays) but of the distortion of the body/ brain (mirror). The recent success in treating schizophrenia, amnesia and other mental illnesses with drugs may have come sooner if this turn-of-the-century explanation would have been heeded by psychiatrists.

<sup>b</sup>Because, according to the Bahá'í writings, the soul is attached to the brain in this life, and because the soul is active during the dream state, it could be predicted that the brain would be active during sleep. For a strict materialist these seems illogical because the sensory input centers are all but shut down. However, recent brain studies confirm that the brain is actually more active during sleep than during the waking state. (See Delaney, Gayle. Breakthrough Dreaming: How to Tap the Power of Your 24-Hour Mind. New York: Bantam Books, 1991.)



objects of knowledge; powers which he deems beyond the capacity of the brain. 'Abdu'l-Bahá explains that "the rational soul, embraces all beings, and as far as human ability permits discovers the realities of things and becomes cognizant of their peculiarities and effects, and of the qualities and properties of beings" (Some Answered Questions 208).

Regarding the relation of the body and soul at death and the powers of the disembodied soul, 'Abdu'l-Bahá offers still another analogy:

To consider that after the death of the body the spirit perishes is like imagining that a bird in a cage will be destroyed if the cage is broken, though the bird has nothing to fear from the destruction of the cage. Our body is like the cage, and the spirit is like the bird. . . . Its feelings will be even more powerful, its perceptions greater, and its happiness increased. . . . That is why with utmost joy and happiness the martyrs hasten to the plain of sacrifice. (Some Answered Questions 228)

In this view of human nature, consciousness is an emanation of the mind/ soul which is reflected in the brain/ body. It is not a product of the brain. This paradigm not only reestablishes the reality of "the ghost," but also attributes to it the sustaining, energizing, and controlling powers over "the machine" and its brain which are, in their essence, also "ghosts." In fact, in a certain sense, 'Abdu'l-Bahá goes so far as to reverse the "ghost in the machine" image. In one of His letters (known as Tablets) He indicates that the non-material, spiritual world is the "real" one and that the material world is but a ghost-like "shadow" of the material world:

This present life is even as a swelling wave, or a mirage, or drifting shadows. Could ever a distorted image on the desert serve as refreshing waters? No, by the Lord of Lords! Never can reality and the mere semblance of reality be one, and wide is the difference between fancy and fact, between truth and the phantom thereof.

Know thou that the Kingdom is the real world, and this nether place is only its shadow stretching out. A shadow hath no life of its own; its existence is only a fantasy, and nothing more; it is but images reflected in water, and seeming as pictures to the eye. (Selections from the Writings of 'Abdu'l-Bahá 178)

Earlier in this paper the idea of a Cartesian Theater in which a "viewer" (or "homunculi") is supposed to observe and feel the input received from the phenomenal world. The materialists rejected this idea because they could find no such theater, projector, screen, or audience in the brain. PPST agrees with



this finding but asserts that it is the soul that operates as the non-material seat of the Cartesian Theater. In the following, provocative passage from the Bahá'í writings, this concept is set forth (the term "inner temple" may be read as "soul" or "spirit"):

As this physical frame is the throne of the inner temple, whatever occurs to the former is felt by the latter. In reality that which takes delight in joy or is saddened by pain is the inner temple of the body, not the body itself. . . . The inner temple beholdeth its physical frame, which is its throne. (The Báb 95)

To consider such thoughts; such a turning of the tables, would cause the foundations of the materialist paradigm to quake. Nevertheless, there does seem to be support for a more spiritual approach to understanding reality amongst contemporary thinkers. Lemonick, et. al., in their review of research on the mind, conclude, "After more than a century of looking for it, brain researchers have long since concluded that there is no conceivable place for . . . a self to be located in the physical brain, and that it simply doesn't exist" (42)."

Although he only believes in natural phenomenon, Colin McGinn sympathizes with a theistic approach: "I think in a way it's legitimate to take the mystery of consciousness and convert it into a theological system. I don't do that myself, but I think in a sense it's more rational than strict materialism, because it respects the data" (Wright 47).

The distinguished brain researcher Karl Pribram expressed his delight in this shift to a more physical/ psychospiritual paradigm: "For the first time in three hundred years science is admitting spiritual values into its explorations. That's terribly important. If you deny the spiritual part of man's nature, you end up with atom bombs, a technocracy devoid of humanity" (Weintraub 148).

Paul Davies and John Gribbin in The Matter Myth describe a "participatory universe" (based on the theory of John Wheeler) in which "observers are central to the nature of physical reality, and matter is ultimately relegated to mind" (307-8). According to Wheeler, a theoretical physicist, matter comes from information which may be defined as consciousness (307).

In The Psychology of Spirituality psychiatrist, scholar, and Bahá'í author, H.B. Danesh uses interchangeably several terms which relate to consciousness, not necessarily as synonyms but as words which illumine different aspects, facets, or powers of a

---

'Abdu'l-Bahá anticipated this conclusion at the beginning of this century when he stated, ". . . if you examine the human body, you will not find a special spot or locality for the spirit, for it never had a place; it is immaterial (Some Answered Questions 242).



single, human reality: soul, mind, spirit, psyche, heart, and consciousness. He considers consciousness, from the PPS perspective (which he refers to as the "biopsychospiritual" thesis [192]), to be "the expression of the human soul in its most immediate, accessible condition" (39).

Hence, psychological consciousness is just one characteristic of the human soul; and waking consciousness or awareness is just one aspect of human consciousness. As mentioned earlier, other, hierarchically organized constructs include the subconscious, the unconscious, and the collective consciousness. Psychological consciousness then, appears to be only the tip of the iceberg of human experience. According to McGinn:

Consciousness should be conceived hierarchically: there are more or less deep hidden layers, according to their degree of accessibility. . . . [consciousness is] like a pyramid only the tip of which is visible--a pyramid equipped with elaborate internal workings, scarcely imaginable from what is given. (91)

Whitehead, in his discussion of "higher phases of experience" also describes consciousness as only a small part of a much greater human experience and reality:

Consciousness flickers; and even at its brightest, there is a small focal region of clear illumination; and a large penumbral region of experience which tells of intense experience in dim apprehension. The simplicity of clear consciousness is no measure of the complexity of complete experience. Also this character of our experience suggests that consciousness is the crown of experience, only occasionally attained, not its necessary base. (267)

An example of an "intense experience in dim apprehension" is the dream. I mention this because Bahá'u'lláh chose one type of dream to prove the supernatural powers of the soul and the existence of non-material realms beyond this phenomenal one:

As to thy question concerning the worlds of God. Know thou of a truth that the worlds of God are countless in their number, and infinite in their range. None can reckon or comprehend them except God, the All-Knowing, the All-Wise. Consider thy state when asleep. Verily, I say, this phenomenon is the most mysterious of the signs of God amongst men, were they to ponder it in their hearts. Behold how the thing which thou hast seen in thy dream is, after a considerable lapse of time, fully realized. Had the world in which thou didst find thyself in thy dream been identical with the world in which thou livest, it would have been necessary for the event occurring in that dream to have



transpired in this world at the very moment of its occurrence. Were it so, you yourself would have borne witness unto it. This being not the case, however, it must necessarily follow that the world in which thou livest is different and apart from that which thou hast experienced in thy dream. This latter world hath neither beginning nor end. It would be true if thou wert to contend that this same world is, as decreed by the All-Glorious and Almighty God, within thy proper self and is wrapped up within thee. It would equally be true to maintain that thy spirit, having transcended the limitations of sleep and having stripped itself of all earthly attachment, hath, by the act of God, been made to traverse a realm which lieth hidden in the innermost reality of this world. Verily I say, the creation of God embraceth worlds besides this world, and creatures apart from these creatures. (Gleanings 151)

This is a very profound passage from Bahá'u'lláh's writings. A thorough examination of the possible inferences would be quite extensive and beyond the purposes of this paper. A couple of pertinent deductions will have to suffice. In one sense, Bahá'u'lláh has given an example of an anomaly--deja-vu-type dreams--which the PPS theory can account for better than materialist theories. The soul-based theory can also account for such phenomena as clairvoyance, out-of-body experiences, and the near-death experiences amply reported by Raymond A. Moody, Jr., M.D. in Life After Life and Reflections on Life After Life.

Another feature of the above passage is the double, relativistic explanation of a phenomenon in which both explanations hold true depending on the perspective of the viewer. Light can behave as, and can be viewed as, particles or waves depending on the circumstance. Macro-level matter, in relation to other macro-level matter, behaves "as matter should," but in relation to the quantum world of matter, sub-atomic particles do not behave as concrete matter "should"--hence, as expressed previously by 'Abdu'l-Bahá, it can be viewed as both a "sensible," material reality and as an "intellectual," non-material reality in its essence. And in the explanation of Bahá'u'lláh, the soul can be said to experience another, non-material world without "traversing" from one realm to another because the other world is within the Self. Or, equally correct, the soul can be viewed as detaching itself and "traversing" to another non-material realm hidden within this world (presumably not necessarily within the Self).

None of these arguments can prove the existence of the soul for a materialist who relies solely on the collection of perceptual data. The soul, as an explanatory model, however, does account for the data. It also explains anomalies found in the materialistic theories. And it presents a simpler causal explanation for psychological consciousness than Dennett's



explanation which was described by Nelson Cowan as "long" and "complex" (232). In the words of Paul Davies in God and the New Physics: "The fact that a concept is abstract rather than substantial does not render it somehow unreal or illusory" (82).

#### LOGICAL SUPERVENIENCE REVERSED

When Chalmers stated that he chose supervenience of consciousness on the brain because it is in accord with current science (xiv), we must presume that he is speaking of the work of mechanistic scientists who have not yet made the paradigm shift that was initiated by a group of atomic physicists.

As we have seen, the physical/ psychospiritual paradigm, in a certain sense, reverses the concept of logical supervenience. In the PPS theory, consciousness (from this point on we will be talking about psychological rather than phenomenal consciousness) is not a natural, emergent phenomena arising from the natural brain. Rather, consciousness arises, or emanates from the mind/ soul and is not totally dependent on the brain/ body. Consciousness is barely attached to the brain/ body during certain dream phenomena and is completely disembodied after death.

Stanislav Grof in Beyond the Brain: Birth, Death and Transcendence in Psychotherapy, also questions the validity of logical supervenience:

The belief that consciousness is the product of the brain is, of course, not entirely arbitrary. These observations demonstrate beyond any doubt that there is close connections between consciousness and the brain. However, they do not necessarily prove that consciousness is produced by the brain. The logic of the conclusion that mechanistic science has drawn is highly problematic. (21-22)

Wilder Penfield, neurosurgeon and brain researcher, in The Mystery of the Mind also expresses doubt about the mechanistic perspective that consciousness is a product of the brain. He doubts that consciousness can be explained in terms of cerebral anatomy and physiology.

In the next section I will discuss the physical-psychological-spiritual connections inherent in the PPS paradigm.

#### THE GOD/ MANIFESTATION/ CONSCIOUSNESS/ BRAIN/ BODY CONNECTIONS

One of the distinctive features of the physical/ psychospiritual theory of consciousness is that it recognizes three, non-material, ontological levels or realms of being: the



Godhead, the realm of the Manifestations<sup>v</sup> or Prophets of God, and the human soul(s). These realms, along with the contingent, phenomenal world (which is non-material in its essence) are considered to be organically connected. They are realms of one kingdom; aspects of one reality. How they are connected is mysterious and bewildering. Because the non-material entities are not subject to observation and because the deity and the realm of the Prophets are hierarchically above the human ontological realm, we are like a tree trying to understand the bee, or a dog trying to comprehend the nature of its master. An entity at one ontological level may co-exist with and even engage in a symbiotic relationship with an entity at another ontological level. But the higher ontological levels are necessarily closed to comprehension by the lower levels. Colin McGinn expressed the dilemma thus: "It is as if we were trying for a general theory of light but could only grasp the visible part of the spectrum" (27). Bahá'u'lláh further describes the cognitive closure of human beings in relation to the Creator:

From time immemorial He [God] hath been veiled in the ineffable sanctity of His exalted Self, and will everlastingly continue to be wrapt in the impenetrable mystery of His unknowable Essence. Every attempt to attain to an understanding of His inaccessible Reality hath ended in complete bewilderment, and every effort to approach His exalted Self and envisage His Essence hath resulted in hopelessness and failure. (Gleanings 63)

Therefore, probably the best that can be done is to express the two-way connection between God and His Manifestations; the Manifestations and human consciousness; human consciousness and the brain/ body, in terms of metaphor and analogy and then subject them to the processes of meditation, contemplation, and, when possible, scientific inquiry.

The analogies provided in the Bahá'í writings are especially helpful because, according to Bahá'u'lláh's claim, He has access to and experience with the non-material realms of existence. Due to the limited scope of this discussion, I will confine myself to only brief references to possible ways of understanding the various connections.

#### The God-Manifestation-Creation Connection:

According to Bahá'u'lláh, there is no direct contact between the Godhead and the creation. The connection is necessarily

---

<sup>v</sup>The term Manifestation refers to the Great Prophets of the major revealed religions Who manifest the attributes of God. They are like perfect mirrors reflecting the qualities and characteristics of the sun.



through the intermediation of the Manifestation of God:

And since there can be no tie of direct intercourse to bind the one true God with His creation, and no resemblance whatever can exist between the transient and the Eternal, the contingent and the Absolute, He hath ordained that in every age and dispensation a pure and stainless Soul be made manifest in the kingdoms of earth and heaven. Unto this subtle, this mysterious and etherial Being He hath assigned a twofold nature; the physical, pertaining to the world of matter, and the spiritual, which is born of the substance of God Himself. (Gleanings 66)

Every one of them [the Prophets] is the Way of God that connecteth this world with the realms above. . . (50)

Hence, God is not directly connected to His creation, but neither is He disassociated from it. The concept of a God Who wound up the creation like a clock with certain laws governing its functioning, and then stood back to let it operate on its own with no divine intervention is contrary to the explanation given by Bahá'u'lláh. Rather, God is seen as participating intimately and continually in the events of the world. Bahá'u'lláh states: "The process of His [God's] creation hath no beginning, and can have no end (61)" and that "He [God] is closer to him [humankind] than his own self" (186).

Regarding the connecting role of the Holy Spirit, if God is like the sun and the Manifestations as perfect mirrors reflecting the qualities of the sun to the earth, then the Holy Spirit can be considered as the rays of the sun; an inseparable emanation of the sun via the mirror. 'Abdu'l-Bahá states, "Unless the Holy Spirit become intermediary, one cannot attain directly to the bounties of God . . . ." (Bahá'í World Faith 370).

#### The Unseen/ Consciousness Connection:

The Bahá'í writings indicate that consciousness is connected to several, what I shall call "unseen" phenomena, for lack of a better term. These include the unconscious aspect of the Self or soul which is capable of reasoning, imagining, and resolving problems independently from the state of conscious awareness. In cognitive science terms, this power is attributed to the parallel circuitry of the brain which is now being used as a model for programming computers. While the brain is carrying out a task in conscious awareness, it is also carrying out other tasks simultaneously at the subconscious or unconscious level. The results of the tasks carried out unconsciously are later communicated to the awareness level of consciousness through various means: thoughts coming into awareness, insight, intuition, visions, day-dreams, meditations, dreams, and others. There is, no doubt, a connection between all of these phenomena



and the brain which is used by the mind to perceive, execute movement, feel, reason, and intend. But the source of these phenomena is not always or ultimately the Self. There is also, according to the Bahá'í writings, input from other sources: indirectly from God via the Manifestations and the Holy Spirit; from the Prophets; and from holy souls. Regarding the latter, Bahá'u'lláh writes:

The light which these souls radiate is responsible for the progress of the world and the advancement of its peoples. They are like unto leaven which leaveneth the world of being, and constitute the animating force through which the arts and wonders of the world are made manifest. . . . These souls and symbols of detachment have provided, and will continue to provide, the supreme moving impulse in the world of being. (Gleanings 157)

'Abdu'l-Bahá further clarifies this phenomena:

. . . the good souls are given eternal life and sometimes God permits their thoughts to reach the earth to help the people. (Hornby, 163)

As to the question that the holy and spiritual souls influence, help and guide the creatures after they have cast off this elemental mould--this is an established truth of the Bahá'ís. (163)

#### Prayer as Connector between Divinity and Soul:

There appears to be a state of consciousness during which the connection between the unseen world and the Self is more pronounced. This is the prayer state. 'Abdu'l-Bahá states:

The wisdom of prayer is this: That it causeth a connection between the servant and the True One, because in that state man with all heart and soul turneth his face towards His Highness the Almighty, seeking His association and desiring His love and compassion. (Bahá'í World Faith 368)

In addition to being the means of receiving God's love and compassion, prayer can also be used as a technique for solving problems and receiving guidance which, according to the Bahá'í teachings, God can give us by sending us the right "way", "thought", "message", "principle", "book", or "thing" (Shoghi Effendi).

Prayer offers a fascinating domain of possible inquiry. It would be interesting to carry out a CAT-scan of the brain while someone is deep in prayer. The use and benefit of prayer by



individuals and groups could also be explored by psychiatrists, psychologists, and sociologists.

#### Dreams as Connectors between the Unseen and Conscious Awareness:

As mentioned earlier, Bahá'u'lláh ascribes great importance to the phenomena of dreams which can contain metaphorical messages from the unconscious, from other souls, from the Prophets, or indirectly from God. In one of His prayers Bahá'u'lláh states:

I beseech Thee, by the potency of Thy will and the compelling power of Thy purpose, to make of what Thou didst reveal unto me in my sleep the surest foundation for the mansions of Thy love that are within the hearts of Thy loved ones, and the best instrument for the revelation of the tokens of Thy grace and Thy loving-kindness. (Bahá'í Prayers 118-19)

M. Scott Peck also considers dreams to be the "best instrument" for psychotherapy: "It is precisely because they [dreams] are so routinely helpful that psychotherapists generally make the analysis of dreams a significant part of their work" (244). He describes how dreams function as: warnings of personal pitfalls; guides to the solution of problems we have been unable to solve; proper indication that we are wrong when we think we are right; correct encouragement that we are right when we think we are probably wrong; sources of necessary information about ourselves that we are lacking; direction finders when we are lost; and pointers to the way we need to go when we are floundering (244-45).

#### The Soul (Spirit)/ Body Connection:

According to 'Abdu'l-Bahá, "It [the spirit] has a connection with the body like that of the sun with this mirror. The sun is not within the mirror, but it has a connection with the mirror. . . the mind [an aspect of the soul] has no place, but it is connected with the brain. . . In the same way, love has no place, but it is connected with the heart; so the Kingdom has no place, but is connected with man" (Some Answered Questions 242).

The connection is even more vital than conveyed in the above metaphor. A mirror does not depend on the sun for its existence, but the body depends on the soul for its life. "A body, 'Abdu'l-Bahá states, "doth not develop and grow without the soul; therefore the soul is the medium of the spiritual life" (Bahá'í World Faith 370). When the soul disassociates itself from the body, death and disintegration of the body occur. The soul appears to function as the cohesive force which coordinates, harmonizes and directs the functioning of the brain/ body. I imagine its role like that of music which is capable of holding dancers in a pattern. When the music stops, the dancers go their separate ways because there is no longer any invisible force



holding them in a higher-order, patterned expression of energy.

According to the investigations of Moody, only a few minutes can pass during which a person can be clinically dead and then be revived. It is during these few minutes, when the soul is disassociated from the body, that near-death and out-of-body experiences are reported.

Danesh expresses the soul/ body connection in these terms:

. . . our thoughts, feelings, and decisions can only be expressed and experienced through the instrumentality of the biochemical and biological processes that materialistic science considers the sum total of being human. . . . in this life, our soul could not function without our body, but it is equally true that our body could not function without our soul. . . . The dilemma of the body/ soul duality is not resolved either by denying the soul or by ignoring the body. Rather, once the unity of body and soul is understood, the whole question of duality disappears, and the way is paved for human development to be expressed in ever higher stages of unity. (199)

It is important to note that the interdependence of the body and soul described by Danesh pertains, as he stated, to "this life." Elsewhere he explains that "consciousness has a reality of its own. Life [the earth phase of life] is the outcome of the ongoing interface between consciousness and matter" (233). After death, consciousness continues to exist as a power of the soul without the need for a body or brain as intermediaries with the phenomenal world. Bahá'u'lláh states, "It is clear and evident that all men shall, after their physical death, estimate the worth of their deeds, and realize all that their hands have wrought" (Gleanings 171).

#### The Mind/ Brain Connection:

From the PPS point of view, the mind is a power of the soul. The fact that the brain influences the mind is not even debated by the supporters of the physical paradigm. However, the idea that mind has causative power is a point of contention. Both the psychophysical, and physical/ pscyhospiritual people accept top-down, mind-over-matter causation.

Roger Sperry, the 1981 recipient of the Nobel Prize in medicine and physiology for his split-brain studies, states that "the higher levels in brain activity control the lower. The higher cerebral properties of mind and consciousness are in command. They call the plays, exerting downward control over the march of nerve-impulse traffic" (Weintraub 194). He, furthermore, extends the sphere of influence of consciousness beyond the biological to the social and political realms:



According to our new views of consciousness, ethical and moral values become a very legitimate part of brain science. They're no longer conceived of as reducible to brain physiology. Instead, we now see that subjective values themselves exert powerful causal influence in brain function and behavior. They are universal determinants in all human decision-making, and they're actually the most powerful causal control forces now shaping world events. (191)

In the same vein, Karl Pribram states that "mind and consciousness change the patterns of neural processings. They operate on the brain and actually affect the chemical structure of the brain" (Weintraub 187).

But unlike the naturalists such as Sperry, Chalmers, and McGinn who believe that consciousness is produced by and is supervenient on the brain, Danesh asserts the independent existence of consciousness as a power of the soul and questions the logic of the naturalist's stance. "How could anything like the brain," he asks, "create something that controls the brain itself?" (186)

#### Feelings as Connectors between Body and Mind:

By what means, and at what nexus the non-material connects to the material will probably long remain a mystery. H.B. Danesh sees feelings as an important link between the two. He views feelings as "conscious human experiences" which are "experienced in our bodies as well as our minds." They are "the bridge between our instinctual and intellectual powers"; "have both physical and metaphysical characteristics"; and "affect both body and mind" (48).

#### Body Organs and Systems as Connectors:

In the Bahá'í viewpoint, the brain is the primary connector between the non-material and the material, but it is not the only nexus. As quoted earlier 'Abdu'l-Bahá states that the brain is the receptor for the mind and the heart is the receptor for love: "The mind has no place, but it is connected with the brain. . . In the same way, love has no place, but it is connected with the heart. . ." (Some Answered Questions 242)."

Another part of the human anatomy which serves as a connector

---

"I assume here that is referring to the heart as a physical organ because it is in the same passage which refers to the brain.



is, according to 'Abdu'l-Bahá, the sympathetic nervous system\*:

The powers of the sympathetic nerve are neither entirely physical nor spiritual, but are between the two. The nerve is connected with both. Its phenomena shall be perfect when its spiritual and physical relations are normal.

When the material world and the divine world are well co-related, when the hearts become heavenly and the aspirations become pure and divine, perfect connection shall take place. Then shall this power produce a perfect manifestation. Physical and spiritual diseases will then receive absolute healing. (Zohoori 309)

#### THE STEP-UP, STEP-DOWN TRANSFORMER: A METAPHOR FOR CONSCIOUSNESS AND THE BRAIN

In the previous section an exploration was made of the connections between consciousness and other phenomena both "above" it and "below" it. The connections were discussed in mostly a top-down fashion. In the present section I will attempt to balance the top-down connections with a description of bottom-up communication and causation. Also, taking Dennett's advice about the power of metaphor, I would like to set forth my own analogy for consciousness and the brain as two in a series of step-up, step-down transformers which connect the spiritual with the material realms. As I stated earlier, a metaphor borrowed from the physical sciences can never relate a comprehensive perspective of a multi-ontological concept, but it can, at least, illumine a certain facet of the phenomena.

Electric transformers are needed to connect two electrical apparatuses which are incompatible. A step-down transformer receives high voltage from a high-voltage source and lowers it to a level which will not harm electrical apparatuses which use lower voltage. Step-up transformers are needed to strengthen electrical current which has been weakened over long distances so that it can eventually carry out a task requiring a certain voltage level. The same function is needed between the non-material, divine realm--inhabited by God, the Manifestations, souls who have passed on from this world, and the unconscious aspect of the living human soul--and the contingent, material world. Consciousness and the brain appear to play such a role.

---

\*The sympathetic nervous system is, according to Webster, "the part of the autonomic nervous system that contains chiefly adrenergic fibers and tends to depress secretion, decrease the tone and contractility of smooth muscle, and cause the contraction of blood vessels.



The brain receives input from the physical world via the sense organs and it receives input from consciousness via thought, meditation, prayer, intuition, and dreams. It relays output toward the physical realm via neural impulses which translate into actions and it relays output toward the conscious via neural impulses which translate into thoughts and prayers.

The conscious receives input from the brain via nerve impulses and it receives input from the unconscious, other souls, the Manifestations (and indirectly from God) via dreams, the appearance of thoughts (of the type not produced by cognition), intuitions, and feelings. It relays output toward the brain via mental thoughts whose physical poles are neural activity and it relays output toward the unconscious, other souls, Manifestations (and indirectly to God) via thoughts, hopes, prayers, and yearnings.

Danesh discusses the human ability to utilize lower-level (limbic) emotions such as anger, sadness, and sexual desires, for higher purposes such as justice, self-correction, and union. He then addresses a criticism made by a sociobiologist who questions why ethical philosophers should be concerned with emotions such as hate, love, guilt, and fear, in their relations to standards of good and evil when, in reality, these emotions are determined by the hypothalamus and limbic systems which came into being by natural selection (172-3). Chalmers and Dennett present a plausible principle that describes how lower-order brain mechanisms which evolved for lower-order purposes of survival and efficient functioning are utilized, at a later stage of evolution, for higher, more complex purposes. The question is one of hierarchical control; the more highly evolved structures having the ability to control the less-evolved structures. Thus spirit can exercise control over mind, which, in turn can control biological structures and lower-order emotions.

Of course, if reality is viewed as being bipolar, the pathway of influence and causation is a two-way street. Thus, it is possible, and increasingly more common, that lower-level feelings and desires (produced by primitive biological structures) have an inordinate impact on higher level thoughts, decisions, ways of being, and world-views. The hedonistic philosophy of seeking physical pleasure and avoiding physical pain is an expression of animal nature-over-divine nature within the integrative, human reality. The instinctual emotions of aggression, greed, hunger, lust, and fear are other examples of lower-level phenomena which can influence higher-level thoughts and decisions.

Hence, in regards to the above-mentioned sociobiologist's criticism of ethical philosophers, it can be acknowledged that basic emotions are products of primitive brain structures, but it is the higher realms of ethics, morals, and religion which can be called upon to impose a higher, more noble standard for their proper control, repression, management, or expression.

In the metaphor of the step-up, step-down transformer, human consciousness can be viewed as the nexus of the animal and divine nature in the human reality. Conflicting messages are received



and decisions must be made. From the lower nature come impulses that are selfish, egotistical or hedonistic. From the higher nature the impulses can be selfless, noble, righteous, or transcendental.

Danesh warns us that if we view consciousness as "the product of our brain, and if our brain is programmed to follow the instinctual route, then all our efforts to live a life of truth, unity, and service will fail" (165).

Peck sees consciousness as "a place of some turmoil, the scene of some struggle between God's will and the will of the individual." "Mental illness" he believes, "occurs when the conscious will of the individual deviates substantially from the will of God, which is the individual's own unconscious will." The conscious mind, according to Peck, is often unwilling to face unwanted feelings and to tolerate the pain of dealing with them. Therefore, it represses them thereby causing mental illness (282).

In Bahá'í terms a saint is simply a person who imposes his/her God-inspired will over his/her animal nature--the lower self. In PPS terms a saint is someone who chooses to allow top-down causation to overpower bottom-up causation. A satanical person allows the opposite to happen. "Human achievements and failure," Danesh explains, "are the respective reflections of the victory of either the spiritual or the instinctual" (233).

The metaphor of the step-down, step-up transformer can also be applied more generally. It portrays all created entities at all ontological levels as bipolar transformers: physical at one end and spiritual at the other. This allows God to influence, through various step-down transformers, all micro and macro-level creatures; it allows for His moment-to-moment participation in creation and the events of the world.

In a very beautiful and poetical meditation of Bahá'u'lláh, He describes how God operates through a series of metaphorical, step-down transformers and He tries to open our eyes to our humble position in the chain of divine command:

The highest faculties which the learned have possessed, and whatsoever truths they, in their search after the gems of Thy [God's] knowledge, have discovered; the brightest realities with which the wise have been endowed, and whatever secrets they, in their attempts to fathom the mysteries of Thy wisdom, have unraveled, have all been created through the generative power of the Spirit that was breathed into the Pen [the Manifestation] which Thy hands have fashioned. How, then, can the thing [the human reality] which Thy Pen hath created be capable of comprehending those treasures of Thy Faith with which, as decreed by Thee, that Pen hath been invested? How can it ever know of the Fingers that grasp Thy Pen, and of Thy merciful favors with which it hath been endowed? How can it, already unable to reach this station, be made aware of



the existence of Thy Hand that controlleth the Fingers of Thy might? How can it attain unto the comprehension of the nature of Thy Will that animateth the movement of Thy Hand? (Prayers and Meditations 92)

Unlike McGinn, who stated that "it is a condition of adequacy upon any account of the mind-body relation that it avoid assuming theism" (17), this cosmological metaphor of transformers provides the means for the vital function played by God: that of inspiring subjective aim or breathing purpose into all entities, thereby guiding them in: the maintenance of their being; their becoming something different than what they are; and their evolution.

In Figure 1 I have tried to express a more graphic portrayal of the concept of step-up, step-down connections amongst various aspects of reality with human consciousness standing at the center of it all. Note that each level of creation has its associated specialists ranging from the Prophets to theologians, psychiatrists, cognitive and behavioral psychologists, physicians, neurobiologists, physicists, and many others. Because these ontological levels are hierarchically organized, with the levels becoming more comprehensive as one moves up the figure, it is the Manifestations of God who stand in a position to convey to us the most holistic, integrative, and general explanations of reality.

#### CONSCIOUSNESS RESEARCH: SOME CUTTING EDGES

During my review of and reflection on the literature on consciousness, I noted various areas which, in my opinion, should constitute some of the topics at the cutting edge of research in this field. I will only outline them briefly.

##### Bottom-up Influences on Consciousness:

The impact of nutrition and environmental factors such as natural surroundings and the specific quality of air, sound, water, and light, on the quality of consciousness and attention needs to be more fully explored, both in a preventative sense and as remediation for mental problems.

##### Consciousness Competence:

Becoming more consciously aware of and in control of one's mind can greatly improve the quality of consciousness, health, self-transformation and general well-being. The processes of reflection, meditation, visualization, verbalization, self-monitoring, learning, self-improvement, self-knowledge and others need to be accepted as lifetime tools as essential as reading, writing, and arithmetic. Consciousness competence is a much more comprehensive concept than metacognition (the conscious control



Figure 1: The Step-Down, Step-Up Transformer Metaphor

God

‡ Holy Spirit

Manifestation (Major Prophets)

‡ Holy Spirit and love (as spiritual force fields)

‡ Inspiration from holy souls

Dreams

Prayer and meditation

‡ **Consciousness**/mind/soul/spirit/psyche

Human body:

Especially:

Brain

Heart

Sympathetic nervous system

‡

Other Interconnective Systems

(such as the circulatory and skeletal systems)

Organs

Tissues

Cells

Molecules

Atoms

Sub-atomic particles

Potentialities pulsating into and out of actuality



of thinking) which has received so much attention during the last decade. (More about this in the 3rd paper.)

#### Dreams:

We need to take greater advantage of dreams. A developmental sequence for research and training could look like this:

- How to recall dreams;
- How to interpret dreams based on the understanding of one's own dream metaphors;
- Maintaining a state of conscious awareness during one's dream;
- Consciously controlling the course of one's dreams during the dream state.

#### Prayer State:

Research needs to be carried out regarding the physiological, psychological, sociological, and spiritual effects of prayer.

#### The Development of World Consciousness:

We need to become more adept in understanding and utilizing the phenomenon of group mind at various social levels from partnerships to humankind as a whole. The concepts of group consultation, group consensus, and the learning organization are leading-edge topics, but the forefront of social evolution is the development of world consciousness which will be characterized by humanity's recognition that we are one interconnected entity living in one home, the earth's biosphere, and that the benefit of each individual depends on the well-being of the whole. The computer, communications, and transportation networks are providing a fast-developing nervous system for this ultimate group mind. What is lacking (and is on the verge of coming into existence) is a world government with a congress, an executive branch and a judicial system. It will be a holographic type of consciousness in which each part/ individual contains the whole. Each person will know about, feel sensitive to, and be willingly responsible for the well-being of all things everywhere. The success of one (individual or nation) will be the success of all; the misfortune of one will be felt as the misfortune of all. Resources will be shared; the prosperity of everyone will be painstakingly sought and methodically increased.

### CONCLUSION

What I have done in this paper is to categorize and describe three basic approaches to understanding consciousness: materialism, mentalism, and spiritualism. I have argued for the spiritual case, which I have termed the physical-psychospiritual theory. Before doing so, I built a cursory, phenomenological and



epistemological case for accepting Bahá'u'lláh as an authority on human nature. I intentionally favored the PPS theory because it is the most comprehensive and because it accounts for the widest range of phenomena which are material, biological, psychological, sociological, and spiritual in nature. I tried to posit some possible "physical/ psychospiritual nexuses," or links between various non-material and material phenomena. And, as a corollary to the theory, I posited a new metaphor for human consciousness. The machine, computer, and multiple drafts metaphors were replaced with the metaphor of the step-up, step-down transformer which views human consciousness as a principal nexus of the non-material, divine realities and the physical, animalistic, instinctual inheritance. In general, I attempted to demonstrate that the PPS theory of consciousness meets the criteria set forth by Matthews for a successful, scientifically-provable, explanatory model: it "accounts for a large number of facts that previously seemed unrelated, correctly predicts a variety of surprising and unexpected new findings, and survives our systematic attempts to disprove it" (33-34).

Personally, I feel that I was able to clarify many concepts about consciousness which I had poorly understood before. However, every insight I gained turned into a door leading to a series of further questions. The nature of consciousness remains very much a mystery to me; a fascinating puzzle only a few pieces of which I have managed to put in place. The importance of continuing to strive to achieve consensus regarding the nature of consciousness cannot, I feel, be over-stressed. The foundation of such an endeavor appears to rest on our common understanding of the nature of reality itself and of human nature in particular, as an integral part of that greater reality. Until these cosmological issues are clarified, I see the advance of philosophy, psychology and education being severely retarded due to the incoherence, so evident in this paper, of the various worldviews held by philosophers, scientists, and practitioners.



## BIBLIOGRAPHY

- 'Abdu'l-Bahá. Selections from the Writings of 'Abdu'l-Bahá, comp. Research Department of the Universal House of Justice. Haifa, Israel: Bahá'í World Centre, 1978.
- . Some Answered Questions. Wilmette, Ill.: Bahá'í Publishing Trust, 1981.
- . 'Abdu'l-Bahá. "Survival and Salvation." The Star of the West 7.19 (March 1917).
- 'Abdu'l-Bahá and Bahá'u'lláh. Bahá'í World Faith. 2nd ed. Wilmette, Ill.: Bahá'í Publishing Trust, 1956.
- Bahá'u'lláh. Epistle to the Son of the Wolf. Translated by Shoghi Effendi. 2nd ed. Wilmette, Ill.: Bahá'í Publishing Trust, 1953.
- . Gleanings from the Writings of Bahá'u'lláh. Translated by Shoghi Effendi. Wilmette, Ill.: Bahá'í Publishing Trust, 1950.
- . Prayers and Meditations by Bahá'u'lláh, trans. Shoghi Effendi. Wilmette, Ill.: Bahá'í Publishing Trust, 1938.
- . Tablets of Bahá'u'lláh. Compiled by the Universal House of Justice. Translated by Habib Taherzadeh et al. Haifa: Bahá'í World Centre, 1978.
- Bahá'u'lláh and 'Abdu'l-Bahá. Bahá'í World Faith. 2nd ed. Wilmette, Ill.: Bahá'í Publishing Trust, 1956.
- Bahá'u'lláh, the Báb, and 'Abdu'l-Bahá. Bahá'í Prayers: A Selection of Prayers Revealed by Bahá'u'lláh, the Báb, and 'Abdu'l-Bahá. Wilmette, Ill.: Bahá'í Publishing Trust, 1978.
- Cowan, Nelson. Attention and Memory: An Integrated Framework. New York: Oxford UP, 1995.
- Danesh, Hossain B. The Psychology of Spirituality. Ottawa: Nine Pines, 1994.
- Davis, Paul. God and the New Physics. London: J.M. Dent and Sons, 1983.
- Davies, Paul and John Gribbin. The Matter Myth. New York: Simon and Schuster, 1992.
- Dennet, Daniel C. Consciousness Explained. Boston: Little, Brown and Company, 1991.
- Ferris, Timothy. Coming of Age in the Milky Way. New York: Anchor Books, 1989.
- Fodor, Jerry. The Modularity of Mind. Cambridge, MA: MIT P/A Bradford Book, 1983.
- Grof, Stanislav. Beyond the Brain: Birth, Death and Transcendence in Psychotherapy. New York: State University of New York P, 1985.
- Hornby, Helen, comp. Lights of Guidance: A Bahá'í Reference File. New Delhi: Bahá'í Publishing Trust, 1983.
- Jordan, Daniel C. Whitehead lectures. National University, San Diego, Summer, 1981.
- Jordan, Daniel C. and Donald T. Streets. "The Anisa Model: A New Basis for Educational Planning." Young Children June 1973: 289-307.



- Jordan, Daniel C. and Michael P. Kalinowski. "Being and Becoming: The ANISA Theory of Development." World Order Summer 1973: 17-26.
- Jordan, Daniel C. and Raymond P. Shepard. "The Philosophy of the ANISA Model." World Order Fall 1972: 23-31.
- Laszlo, Ervin. The Inner Limits of Mankind. London: Oneworld, 1989.
- Lemonick, Michael D. et al. "Glimpses of the Mind?" Time July 31, 1995: 32-42.
- Lowe, Victor. Understanding Whitehead. Baltimore: The John Hopkins Press, 1966.
- Matthews, Gary L. The Challenge of Bahá'u'lláh. Oxford: George Ronald, 1993.
- Moody, Raymond A. Life After Life. New York: Bantam Books, 1975.
- . Reflections on Life After Life. New York: Bantam Books, 1977.
- Nelson, Thomas O. "Consciousness and Metacognition." American Psychologist. February 1996: 102-116.
- Peck, M. Scott. The Road Less Travelled: A New Psychology of Love, Traditional Values and Spiritual Growth. New York: Simon & Schuster, 1979.
- Penfield, Wilder. The Mystery of the Mind. Princeton: Princeton UP, 1976.
- Puente, Antonio E. "Roger Wolcott Sperry (1913-1994)." American Psychologist November 1995: 940-41.
- Sharpe, Kevin. "The Divine Nonlocal Universe." The Network 13.3 (Summer 1996): 28-29.
- Shoghi Effendi. Principles of Bahá'í Administration. Bungay, Suffolk, Great Britain: Richard Clay [The Chaucer Press], Ltd, 1950.
- Sperry, Roger W. "The Impact and Promise of the Cognitive Revolution." American Psychologist August 1993: 878-885.
- The Báb. Selections from the Writings of the Báb, comp. Research Department of the Universal House of Justice, trans. Habib Taherzadeh et al. Haifa: Bahá'í World Centre, 1976.
- Wallis, Claudia. "Faith and Healing." Time June 24, 1996.: 61-70.
- Weintraub, Pamela, ed. The Omni Interviews. New York: Ticknor & Fields, 1984.
- Wellman, Henry M. The Child's Theory of Mind. Cambridge, MA: MIT P, 1991.
- Whitehead, Alfred North. Process and Reality: An Essay in Cosmology, corrected ed. New York: Macmillan Publishing Co., Inc., 1978.
- Wilber, Ken, ed. Quantum Questions: Mystical Writings of the World's Great Physicists. London: Shambhala, 1984.
- Wright, Robert. "Can Machines Think?" Time April 1, 1996: 42-50.
- Zohoori, Elias. The Throne of the Inner Temple. Kingston, Jamaica: University Printery and School of Printing, University of the West Indies, 1985.