Chapter 2

BIOLOGICAL FOUNDATIONS OF TRANSPERSONAL PSYCHOLOGY

Learning Objectives

1. Describe the transpersonal nature of the physical body.
2. Define the "placebo effect," give two examples of the placebo response in the history of medicine, and tell why placebos are important for understanding the relationship between mind and body.
3. Identify the types of physical and psychological effects that have been observed following the administration of a placebo, and the factors that influence placebo effectiveness.
4. Distinguish between the belief system and the healing system.
5. Discuss three implications of the placebo effect for re-visioning the biological foundations of psychology.
6. Define "spontaneous remission," identify two medical disorders observed to go into remission, and list three events or actions that have been observed to trigger remissions.
7. Discuss three implications of spontaneous remission for the biological foundations of psychology.
8. Distinguish miraculous cures and spontaneous remission.
9. List the criteria for miracle cures and describe the process for their medical and ecclesial assessment.
10. Identify the range of maladies for which complete remissions have been documented cures at Lourdes, France and summarize two investigated cases.
11. Discuss two implications of miraculous cures for re-visioning the biological foundations of psychology.
12. Tell why charisms of Catholic saints and mystics are an important source of information about the transpersonal nature of the physical organism.
13. Define hypnosis and tell how it operates in everyday life.
14. Identify three "unchangeable" bodily processes changed by (hypnotic) suggestion.
15. Distinguish three explanations for hypnotic effects on bodily processes.
16. Discuss the implications of hypnosis for re-visioning the biological foundations of psychology.
17. Summarize the evidence of extraordinary psychophysical plasticity in individuals with multiple personality disorder.
18. Discuss two implications of multiple personality disorder for re-visioning the biological foundations of psychology.
19. Identify the variety of bodily functions that can be modulated by biofeedback.
20. Distinguish "instrumented" and "non-instrumented" feedback.
21. Explain why imagery ability is important for biofeedback success.
22. Discuss two implications of biofeedback for re-visioning the biological foundations of psychology.
23. Describe the biological pathways identified by psychoneuroimmunology that facilitate mind-body communication.
24. Summarize how "belief becomes biology."
25. Define the "psychophysiological principle."
26. Discuss the implications of the psychosomatic communication network for re-visioning the biological foundations of psychology.
27. Summarize the evidence for distant mental influence.
28. Discuss the implications of distant mental influence for re-visioning the biological foundations of psychology.
29. Distinguish classical and modern theories of physical matter.

30. Discuss the five "body illusions" and the implications for re-visioning the biological foundations of psychology.
31. Describe the biological perspective and identify four key ideas that define the biological approach.
32. Describe two examples of how the biological approach has expanded understanding of physiological correlates of transpersonal experiences and behaviors.
33. Summarize and evaluate four assumptions underlying the search for physiological correlates of transpersonal states.
34. Identify two kinds of "category mistakes" committed by cognitive neuroscience in explanting mind-body relationships.
35. Summarize the reasons why no answers have been found to the so-called mind-body problem.
36. Describe the positivist, mechanistic, deterministic, and reductionist theory of reality.
37. Tell why the quest to localize spiritual experiences in the brain has been called "the new phrenology."
38. Summarize the chain of questionable assumptions that underlie the localization of spiritual experiences in the brain.
39. Evaluate the conceptual and methodological difficulties that underlie mind-brain localization research.
40. Distinguish the transmission-theory and production-theory of cerebral action.
41. Describe two analogies that illustrate how the brain transmits mind.
42. Discuss the implications of observations of hydrocephalics, brain hemispherectomies, and hypothermic cardiac arrest for re-visioning the biological foundations of psychology.
43. Compare and contrast the position of monism and dualism in their understanding of the nature of mind and body and how they are related.
44. Define "panpsychism" and tell how it solves the mind-body problem.
45. Discuss the idea that "all energy contains consciousness."
46. Summarize Darwinian evolutionary theory.
47. Assess the problems that Darwinian theory pose for understanding the species' origins and development.
49. Assess the negative role of Darwinian theory in contributing to present world conditions.
50. Describe the role of world religions in evolution.
51. Discuss the importance of the species' natural religious knowledge in evolutionary development.
52. Tell how changing concepts of God reflect the evolution of human consciousness.
53. Describe the evolutionary significance of the contemporary search for spirituality.
54. Compare and contrast the fields of "behavior genetics," "sociolobiology," and "epigenetics."
55. Identify four assumptions about the function and operation of genes that are being revised by research in the field of epigenetics.
56. Describe transpersonal approaches to heal and healing and to understanding the relationship between mind and body.
57. Discuss the barriers to actualizing human transformative capacities and the body's healing system.
58. Tell what it means to be healthy in body-mind-spirit according to transpersonal medicine.
59. Discuss the relationship between psychic/physical energy and health/illness.
60. Identify and discuss the two main ideas underlying the foundation of transpersonal medicine.
61. Describe five important elements that should be integrated into any efforts to successfully promote bodymind healing.
62. List and describe three bodymind techniques practices that transform body and mind.
63. Tell why breathing and relaxation are important for bodymind health.
64. List the great physical and psychological benefits of physical exercise.
65. Discuss the role that ultradian rhythms and "natural" hypnosis can play in tuning the transpersonal body.
66. Tell how using visualization and imagery can enhance performance in everyday life.

67. Explain why it takes only one white crow to prove that not all crows are black, and the implications of this idea for re-visioning the biological foundations of psychology.
68. Discuss the implications of the placebo response, spontaneous remission, miracle cures, charisms, hypnosis, multiple personalities, mental imagery, biofeedback, and distant mental healing for re-visioning the biological foundations of psychology.
69. Compare and contrast panpsychism with the materialistic, reductionistic, detemrinistic, positivist framework that is currently operative in mainstream psychology.
70. Summarize the evidence for human transformative capacity and describe the implications for re-visioning the biological foundations of psychology.
71. Describe the transpersonal nature of the human body.
72. Describe the "Quantum Body."
73. Discuss the limitations of research into the psychophysiology of transpersonal states and the attempt to localize spiritual experiences in the brain.
74. Describe the advantages and disadvantages of the transmission-theory of cognitive action as an alternative to modern day production-theory of cognitive action.
75. Summarize transpersonal psychology's contribution to understanding evolution of the species and the role of genetic action in spiritual development.
76. Describe some of the ways that the health of the transpersonal body can be consciously developed.

Chapter 2 – Biological Foundations of Transpersonal Psychology

Chapter Outline

BIOLOGICAL FOUNDATIONS OF TRANSPERSONAL PSYCHOLOGY

I. Evidence of Human Transformative Capacity

A. The Placebo Response: The Healing Power of Belief
1. What is the placebo effect?
2. The varieties of placebo response.
3. The power of belief in the history of medicine.
4. The function of the belief system and the healing system in the biological foundations of psychology.
5. What factors influence placebo effectiveness?
6. Explanations for the placebo effect.
7. Implications for the biological foundations of psychology.
    a. The power of the subconscious mind.
    b. It is not the thing believed that heals or harms.
    c. The physical organism is conscious.

B. Spontaneous Remission: The Body's Innate Ability to Heal Itself
1. What is spontaneous remission?
2. Remissions occur for practically all known medical diseases following a complex range of events that one would not expect to cure a person.
3. Implications for the biological foundations of psychology.
    a. The body has an innate ability to heal itself.
    b. The body has the beliefs of the conscious mind to content with.
    c. A new paradigm of transpersonal medicine is needed.

C. Miraculous Cures: Biological Pertinence of Faith
1. Distinguishing miraculous cures and spontaneous remission.
2. Criteria for miracle cures and their medical and ecclesial assessment.
3. Range of maladies for which complete remissions have been documented cures at Lourdes, France.
4. Can faith reconstruct bone? The remarkable case of Vittorio Michelli
5. Implications for the biological foundations of psychology.
    a. Supernatural intervention is not required.
    b. Suspension of natural law is not required.

D. Charisms of Catholic Saints and Mystics: A Unique Body of Evidence
1. Varieties of charismatic phenomena.
2. Unique body of evidence for human transformative capacities.

E. Hypnosis: Changing "Unchangeable" Bodily Processes by Suggestion
1. What is hypnosis?
2. "Unchangeable" bodily processes changed by suggestion.
3. The curious case of the fish-skin boy.
4. Explanations for hypnotic effects on biological processes.
    a. Hypnotizability, alteration of blood flow, electric voltage change, temporal reversal.
5. Implications for the biological foundations of psychology.
    a. Dualistic dichotomy between mind and body is inadequate.
    b. Conscious beliefs are "soma-significant."

F. Multiple Personality: Change of Mind Creates a Change of Body.
   1. Evidence of extraordinary psychophysical plasticity in multiples.
   2. "Unchangeable" bodily processes changed by shift in self-image.
   3. Implications for the biological foundations of psychology
      a. We have scarcely glimpsed the complicated realities of the human mind.
      b. Biological psychology's understanding of the phenomena of neuroplasticity needs to be extended.
      c. The innate mobility and ever changing quality of the human psyche is expressed in flesh.

G. Biofeedback
   1. Any biological process is potentially controllable via biofeedback.
   2. What is instrumented feedback?
   3. Non-instrumented biofeedback is possible.
   4. Imagery ability is important for biofeedback success.
   5. Implications for the biological foundations of psychology.
      a. Capacity for inner perception of somatic events attributed to specific yogic practices.
      b. Imagination is a bridge linking mind and body.

H. Psychobiology of Mind-Body Communication
   1. Psychoneuroimmunology as a bridge relating mind and body.
   2. How beliefs become biology.
   3. The psychophysiological principle.
   4. Implications for the biological foundations of psychology.
      a. Psychosomatic communication networks operate.
      b. Body and mind as two interweaving processes that are mental and physical at once.
      c. Body, mind, and world form a living system.
      d. The mind is as physical as the body; the body is as spiritual as the mind.

II. The Transpersonal Nature of the Body

A. The Further Reaches of the Transpersonal Body: Distant Mental Influence
   1. What is the evidence for distant mental healing?
   2. Implications for the biological foundations of psychology.
      a. A more comprehensive model of reality is needed
      b. Indirect evidence for the soul.

B. The Quantum Body
   1. Matter in classical physical theory
   2. Matter in modern physical theory
   3. The body electric.
   4. Body illusions
      a. The solid body.
      b. The stable body.
      c. The individual body.
      d. The mechanical body.
      e. The mindless body.

Chapter 2 – Biological Foundations of Transpersonal Psychology

III. Biological Foundations of Transpersonal Psychology

A. The Psychophysiology of Transpersonal States
1. The biological perspective
2. Key ideas that define the biological foundations of psychology
    a. The brain contains the mind within it and produces thought.
    b. Brain and its mind are machine-like in its operation.
    c. Mind is localized in a 3-dimensional space.
3. "Transcendent consciousness" has biological correlates.
    a. Example from the field of neurotheology.
    b. Example from the study of meditation.
4. Questionable Assumptions behind the Psychophysiology of Transpersonal States
    a. Experiences correlated with biological actions are caused by them.
    b. Mindless matter gives rise to matterless mind.
    c. "Category mistakes" in cognitive neuroscience.
        i. Psychology and physiology are logically distinct semantic domains.
        ii. Mediated and unmediated experience fundamentally differ.
        iii. Physiology and psychology deal with different domains of experience.
        iv. Mind and brain do not look or feel the same.
    d. Positivist, materialist, mechanistic, deterministic, reductionistic theory of reality.

B. The New Phrenology: The Quest to Localize Spiritual Experiences in the Brain
1. Conceptual and methodological difficulties in localization research.
    a. Nebulous spiritual experiences are hard to define and are often not directly available for introspective inspection and report.
    b. The brain is a system of overlapping, highly interdependent functional regions that interact in non-linear ways.
    c. Brain regions are not sharply demarcated from one another.
    d. Technological and experimental artifacts confound interpretation of results.

C. Transmission-Theory of Cerebral Action
1. Transmissive theory of brain processes
    a. Thought is a function of brain transmission.
    b. The brain transmits the mind, but does not produce or contain it.
2. Analogies
    a. Thought/language analogy
    b. Video game analogy
    c. Television set-program analogy.
3. The mind itself is not physical, and cannot be contained within matter.
4. Is a brain really necessary?
    a. Observations of hydrocephalics and brain hesterectomy
    b. Observation of a case of hypothermic cardiac arrest.

D. Re-visioning the Mind-Body Problem
1. Monism and dualism defined.
2. Monism vs. dualism compared.
3. The mind-body problem itself is based on faulty premises.
4. Panpsychism
    a. All energy contains consciousness.
    b. No boundary consciousness.

c. "The mystery of the world is its comprehensibility."

IV. Evolution, Genes, and the Transpersonal Body

A. Evolution and Natural Selection
1. Darwinian evolutionary theory
2. The problem with Darwinian man.
3. The negative role of Darwinian Theory in the modern world.

B. The Role of Spirituality in Evolution
1. Few alternative theories of species origin and evolution exist.
2. The importance of natural religious knowledge in evolutionary development.
3. Changing concepts of God as a reflection of the evolution of human consciousness.
4. Evolutionary significance of the contemporary search for spirituality.

C. Genetic Influences on Experience and Behavior
1. Behavior genetics and sociobiology.
2. Epigenetics
   a. Example - Hypnotizability and gene expression.
3. Implications of transmission theory, panpsychism, and evolutionary spirituality for the biological foundations of psychology
   a. The information knit into the genes and chromosomes exists *apart*, and the physical structures merely represent the carriers of information.
   b. Individualized consciousness forms the genes, and not the other way around.
   c. Information transmitted by genes is not neutral or predisposed only toward survival, but provides ideal inner blueprints leading toward the best possible development for the individual and the species as a whole.

V. Tuning the Transpersonal Body

A. Transpersonal Medicine
1. The marriage of body and soul.
2. Barriers to actualizing human transformative capacity and the body's capacity for health and vitality.
3. Transpersonal approaches to health and illness.
4. Health as wholeness and creative tension-in-balance.
5. Energy medicine.
5. Psychic foundation of transpersonal medicine.
   a. The existence of a subconscious power or energy within the mind, latent but appreciable, that exercises control over the functions, sensations, and conditions of the body.
   b. The susceptibility of awakening and harnessing this power to heal the body by positive suggestions, constructive thoughts, optimistic beliefs, creative visualizations, and confident expectancy.

B. Tuning the Transpersonal Body
1. Key mental elements in the self-healing process.
   a. Bodily relaxation and a quiet environment
   b. Focusing attention upon one thing.

c. Learning visualization and imagery techniques
d. Incorporating intentionality into the process.
e. Evoking strong, positive emotions.

2. Body/mind practices
   a. Hatha Yoga
   b. Martial arts
   c. Massage and body work
   d. Washing, fasting, eating, breathing
3. The power to breathe and to relax
   a. Beneficial physiological changes associated with relaxation.
4. The great benefits of physical exercise
5. Ultradian rhythms and self-hypnotic healing
6. Using visualization and imagery to enhance performance in everyday life
   a. What is creative visualization?
   b. Basic elements of creative visualization

VI. Conclusion

Chapter 2 – Biological Foundations of Transpersonal Psychology

Chapter Summary

Evidence of human transformative capacity can be found in a wide range of phenomena that mainstream psychology considers "anomalous" or "not normal" and thus not usually covered in general psychology textbooks. These include: placebo-induced relief from medical disorders, spontaneous remission and the body's innate healing ability, miraculous cures and charisms of Catholic saints and mystics, changing "unchangeable" bodily process in hypnosis and multiple personality, the effect of mental imagery on healing and mind modulation of autonomic nervous system functioning via biofeedback. These phenomena and the mind-body communications they represent are made possible by the biochemical links between mind and body discovered by the science of psychoneuroimmunology and the mind-body psychosomatic communication system that operates according to the psychophysiological principle. Phenomena of intercessory prayer and distant mental influence of one body upon another requires a more comprehensive model of reality.

A psychology for the 21st century seek answers to the question of how mind and body are related not in the classical physical theory of 19th century Newtonian mechanics -- a theory upon which mainstream psychology still prefers to build its models of human experience and behavior -- but in the modern physical theory of Einsteinian concepts and quantum mechanics. Once we recognize, acknowledge, and accept the fact that beneath the body's physical appearance is the energy that composes it, we understand that our perception of it as solid, stable, individual, mechanical, and mindless is mere camouflage (or body illusions), and not a completely accurate way of properly understanding the nature, operation, or capability of the physical organism we call our body.

The discovery of biological correlates of exceptional human experiences and transformative capacities has led mainstream psychology is assume that the nonphysical mind must logically be a by-product of the electro-chemical workings of a physical brain. The Jamesian “transmission theory” provides an alternative explanation to the conventional “production-theory” of cerebral action. Case studies of hydrocephalics and of patients during hyperthermic cardiac arrest suggest that there may be more to mind than matter. The search by modern cognitive neuroscience for demarcated areas of the brain where spiritual experiences are believed to be localized (or the chimerical "God Spot" and "God Gene") ignores the significant conceptual problems and methodological limits that confront any enterprise that wants to localize in physical matter (the brain) that which does not take up three-dimensional physical space (the mind).

From a transpersonal perspective, the marriage of body and soul is an ancient contract. The spirit speaks with a physical voice and the physical body is a creation of the spirit. As our understanding of the biology of belief, intention, and expectation grows, so does evidence that mind matters and matter has a mind of its own. An ancient philosophy known as *panpsychism* describes the mechanisms by which psychic energy or consciousness forms matter.

The transpersonal psyche -- its human expression -- has played an important role in the biological as well as psychological evolution of the species. Mainstream psychology, while focusing on the function of the environment and genetic inheritance in the evolution of human consciousness, has tended to overlook the function that human consciousness has played in the evolution of both the physical environment and genetic inheritance. Transpersonal psychology points out the significant part that humanity's spiritual nature and changing concepts of God have played in human evolution. Traditional assumptions about the function and operation of genes are being challenged by the emerging field of *epigenetics* that offers new insights into how supposedly "unchangeable" genetic events can be changed in response to one's thoughts and beliefs.
The spirituality of our creaturehood and the biological integrity of our spirit need to be both affirmed if we are to ever approach an accurate understanding of the true nature of mind-in-body and of body-in-

mind and their transpersonal actuality both in and out of time. Only when biological psychology recognizes and acknowledges the transpersonal nature of the human body and its multidimensional reality, will it have any true appreciation of the physical organism's capacity for transformative behaviors that lie latent within each individual. These possibilities for human transformative capacity and extraordinary functioning cannot be understood from a physical, biological, evolutionary, or genetic standpoint alone. This is why transpersonal approaches to health and healing include exercises and practices for tuning into and turning on, harnessing and directing the energies of our transpersonal body for increased energy and health, strength and vitality, comprehension and creativity.

BIOLOGICAL FOUNDATIONS OF TRANSPERSONAL PSYCHOLOGY

I. Evidence of Human Transformative Capacity
II.

In 1956, a healthy and vibrantly active individual named Mr. Wright developed cancer of the lymph nodes. His condition had deteriorated to such an extent that the tumors in his neck, groin, chest, and abdomen had grown to the size of oranges. His chest had to be emptied of one to two liters of milky fluid every other day. Doctors did not believe that he had much longer to live. Mr. Wright, however, had heard about an upcoming clinical test of a new experimental drug, called Krebiozen. He pleaded with the doctors to include him in the study. Even though Mr. Wright was past the point of saving, the doctors gave in to his persistent requests and entered him into the clinical trials of what was later to prove to be a worthless drug. Of the 12 people in his experimental group, Mr. Wright alone showed brilliant improvement. His tumors "melted like snowballs on a hot stove" and within 10 days, all signs of Mr. Wright's cancer had vanished. Within two months, news reports of the overall ineffectiveness of Krebiozen in the clinical trials started to reach Mr. Wright. His confidence in the drug began to falter, and soon all his symptoms returned. Near death, his physician decided to perform an unorthodox experiment. He informed Mr. Wright that a new, improved, double-strength formula of Krebiozen has been developed and that Mr. Wright had been selected to prove its efficacy. Within days of receiving the *fresh water* placebo, Mr. Wright's symptoms of cancer again disappeared. Tumors vanished and chest fluid disappeared. Within two months, press announcements declared Krebiozen a worthless drug. Mr. Wright's faith finally gone, he succumbed to the disease within days and died (Klopfer, 1957).

Mr. Wright's remarkable experience tells us a great deal about the unity of body and mind, the body's capacity for physical transformation, and how the body is equipped, ideally speaking, to rid itself of any disease. As we will see in this chapter, these powers of the body are biologically quite achievable in practical terms when there occurs a complete change of focus and belief. In Mr. Wright's case, complete belief in the efficacy of a worthless drug cured him of cancer. Mr. Wright's experience provides us a glimpse of the *transpersonal nature of the physical body* -- the physical organism's inherent capacity for transformation and innate ability to extend and expand biological processes beyond their usual physiological parameters. It refers to the physical body's potential to direct and use its energy with a sense of meaning and purpose to richly form from itself -- from its biological components and inner experience -- a broad range of possibilities for human transformative capacity and extraordinary functioning.

What evidence do we have for the transpersonal nature of the physical body, how are we to understand its functioning, and how may we awaken, harness, and direct its powers for health, comprehension, and creative living? This chapter begins by describing a variety of evidence for human transformative capacity and extraordinary functioning of the human body reported in studies of (a) the placebo response and spontaneous remission, (b) miraculous cures and charisms of Catholic saints and mystics, (c) hypnosis and multiple personality disorder, (d) mental imagery and biofeedback, and (e) distant mental influence. The chapter then examines various explanations for such phenomena in light of the theories and concepts of mainstream biological psychology and transpersonal psychology. We will discover that there is more to the physical organism than meets the eye and that the body indeed has a mind of its own.

Placebo: The Healing Power of Belief

What is the "placebo effect"? In the medical literature, Mr. Wright's experience of healing is regarded as a "placebo effect." What is the placebo effect? "If a physician gives you a pill that contains no ingredients known to influence your rash, your cold symptoms, or your pain, for example, but you

experience relief from whatever ails you, that's the 'placebo effect'" (R. Ader, quoted in O'Regan & Hirshberg, 1993, p. 40). Placebos (from the Latin, meaning "I shall please") can powerfully mimic the effects of active drugs and may actually reverse a drug's action if the person expects it to do so (Liberman, 1962; Shapiro, 1964). For example, morphine can lose as much as 25% of its effectiveness as a pain killer if patients think they have only received a placebo, and placebos can reduce pain by as much as 35% if patients think they have received morphine instead (Beecher, 1959). If a person drink a placebo, but thinks she or he is actually drinking alcohol and expects to get drunk, the person will in fact get drunk (Abrams & Wilson, 1983). One provocative example of the direct physical effects of placebos on bodily processes appeared in the *World Journal of Surgery* in which 30 percent of the control group who were expecting an injection of a chemotherapy agent but were given a placebo instead actually lost all their hair (Fielding et al., 1983). The remarkable power of placebos to heal is considered so reliable and valid that "no drug can be marketed in the United States unless it has been evaluated against a placebo [because] the difference between the effectiveness of the drug and the effectiveness of the placebo is considered to be a measure of the drug's actual effectiveness" (Taylor, 2006, p. 260). Placeboes may even be "as good as surgery" (Justice, 1985, p. 278) with some heart attack patient's experiencing relief of coronary cardiovascular symptoms, not because they actually underwent a surgical procedure, but because they simply *believe* that they did (Benson & McCallie, 1979; National Cooperative Study Group, 1976; Thomsen, Bretlau, Tos, & Johnsen, 1983).

The varieties of placebo response. **Figure 2-1** identifies the many and varied organic disorders (including incurable malignancies), psychiatric syndromes, mood and behavior effects, and adverse reactions that have been observed to occur following the administration of a placebo.

Insert Figure 2-1 here

In one meta-analysis of 15 randomized, double-blind studies involving 1,082 participants, placebos were found to have produced a 35% cure rate of numerous non-life-threatening medical problems, ranging from postoperative pain to angina pectoris discomfort, headache and cold symptoms, nausea and seasickness, which is slightly less than the actual effectiveness of either active pharmacological agents or surgery in relieving such symptoms (Beecher, 1955).

The power of belief in the history of medicine. It is the influence of belief that many historians of medicine believe was responsible for the observed effectiveness of patently useless, inactive and downright harmful medical treatments of the past (Shapiro, 1959). The ingestion of home remedies such as ground-up fox lung for tuberculosis, powered deer antlers for impotence, sheep dung for gallstones, goose dung for baldness, and turtle blood for blood clots reportedly improved the condition for many individuals. Downright harmful medical treatments, such as blood letting, vomiting, blistering, freezing, heating, and leeching actually helped some patients get better. The history of medicine shows that many such home remedies and medical treatments administered in the early days of medicine were pharmacologically inert yet relieved an amazing range of illnesses, produced few toxic side effects, and significantly altered mood and behavior (Shapiro, 1960). Physicians of the time understood that thoughts and beliefs had powerful effects and were used regularly to help activate the healing system of the body.

The function of the belief system and the healing system in the biological foundations of psychology . In addition to the biological systems mentioned in general psychology textbooks – sensory, motor, endocrine, and nervous systems – there are two more systems that are frequently overlooked or under-emphasized in discussions of the biological foundations of psychology, which work together for the health of both body and mind: the belief system and the healing system. "The healing system is the way the body mobilizes all its resources to combat disease. The belief system is often the activator of the healing system" (Cousins, 1981, p. 205). An effective physician is always a changer of beliefs who

replaces an idea of illness with one of health. To be healthy, the individual must believe in health, even in the face of evidence to the contrary that is provided by the physical senses in the present. Changing expectations is a key not only to effective psychological healing, but effective physical healing as well (Kirsch, 1990). In this way, "belief becomes biology" (N. Cousins, quoted in Dossey, 1991, p. 56).

What factors influence placebo effectiveness? Many different variables appear to be involved in turning on the body's innate healing system, including: the physician's beliefs and behavior, the patient's expectation of benefits, patient characteristics, aspects of the patient-physician relationship, situational factors, characteristics of the placebo itself, the treatment's reputation, and social norms (White, Tursky, & Schwartz, 1985). For instance, an active drug's effectiveness can actually decrease from 77% to 10% of cases if the *physician* is doubtful about its effectiveness (Feldman, 1956). Most people seem to have the ability to activate their healing system through a placebo response (Sobel, 1990), although some people consistently respond more positively to placebos than others. "In general, placebo reactors tend to be anxious, can let themselves depend on others for help, and can readily accept others in their socially defined roles. . . . Placebo responders with surgical pain tended to be more dependent, emotionally reactive, and conventional, while the nonreactors were more likely to be isolated and mistrustful" (Frank & Frank, 1991, pp. 137-138).

Explanations for the placebo effect. A number of theories have been proposed to explain placebo effects and how these variables operate to influence the immune system, including expectancy theory, classical and operant conditioning, hypnotic suggestion, observational learning, personal experiences, cognitive coping, attentional focus, and schematic processing (Brody & Brody, 2000; Stewart-Williams, 2004; Wickramasekera, 1980). From a psychodynamic perspective, the placebo response provides a glimpse of the power of the subconscious mind to awaken, harness, and *precisely* direct the complicated, and infinitely varied physiological processes needed to lessen a headache, overcome an allergy, reduce a fever, soothe a peptic ulcer, relieve psychiatric symptoms, or deploy various antibodies needed for the cure of cancer.

Implications for the biological foundations of psychology. *The power of the subconscious mind*. From a transpersonal perspective, belief and expectation activated Mr. Wright's subconscious mind to trigger his mind-body communication system, enabling him to mobilize the autonomic, endocrine, and immune functions of his body, to initiate a healing response. It is important to recognize, psychologically speaking, that as far as the subconscious mind is concerned, there is no important difference between an *imagined* reality (placebo effect) and a purely physical one (active medication). All the biochemical changes that happen during a real-life encounter with an event can happen just as well during an imagined one (Achterberg, 1985). Our conscious beliefs and expectations, images and emotions are reflected in the body, whether those cognitions, imagery, and feelings have a basis in physical reality or are simply imagined. "The placebo does not have imaginary effects though it operates through the imagination" (Cousins, 1981, p. 217).

It is not the thing believed that heals or harms. It was obviously not the worthless drug, Krebiozen that restored the abilities and functions of Mr. Wright's body to its normal state of efficiency and good health. If Mr. Wright had fully believed in the power of some saint's bones or the healing properties of magnets, he would have gotten the same results. *Anything* that leads a person to honestly and fully believe in the theory or method or process will make a healing more likely. It is not the thing believed that heals or harms, however, but the belief, faith, and confident expectancy in the mind that acts as a powerful suggestion to the body, releasing its healing potency (Maltz, 1960). That healing power may be called by many different names – God, Allah, Yahweh, Tao, Nature, Creative Intelligence – and the healing process may be described by different methods – ritual, ceremony, incantation, sacrifice, acupuncture, conditioning, chemotherapy, prayer – they are simply different ways of activating the healing potency residing in the body (J. Murphy, 2000). Whether a person is a believer, atheist, or agnostic, the healing

systems of the body are activated through belief and expectation. Whatever mechanism, methods, or drugs that are used to treat *any* illness will not be effective, efficient, or productive, unless a change of belief takes place and the patient becomes convinced in his or her power to overcome the condition. This doesn't make it unreal or invalid. There are simply some things in which you have to believe in order for them to occur.

The physical organism is conscious. According to conventional psychology, we have an "unconscious" body that understands and responds to meaning, forms emotional responses, and guides actions largely independent of conscious awareness (Kihlstrom, 1984). The conscious mind does not have to regulate bodily processes or keep conscious track of all the muscles, nerves, cells, molecules, and atoms involved in our pumping heart while other visceral organs act without our conscious control and usually without our knowledge. The simple fact is that our conscious mind cannot and need not keep track of such actions. The conscious mind simply cannot contain all the information necessary to grow a cell or an entire physical organism from a fetus to an adult, yet the physical organism does this quite well without the mind having any conscious idea how it is done. We have little idea at a conscious level of the mechanisms that permit us to think, speak, or move across a room, yet all of this proceeds purposefully, intelligently, meaningfully, and spontaneously by a body that is supposedly "non-conscious." It is estimated that as much as 99% of cognitive activity may be nonconscious (Kihlstrom, 1984).

The placebo response suggests that the physical organism-- which so creatively directs and uses its energy to initiate, organize and manipulate inner physiological processes in response to meaning and intent -- is far from unconscious. The physical organism's amazingly specific response to a placebo points to the body's richly creative, purposeful, and *highly* discriminating ability to transform mental energy into physical matter. The physical organism only appears unconscious to a conscious mind whose limited focus makes it simply *not conscious enough* to be able to contain the vast knowledge that belongs to the body. That "unconscious" body, from which the conscious mind derives much of its energy, is necessarily far more conscious than its offspring. A transpersonal perspective would propose that not only is the mind *and* body *conscious*, but are also *conscious of themselves*, both as an individual identity apart from one another and as individualities that are *a part of* each other. Both mind and body are continually aware at a subconscious level of both of this apartness and unity-with one another. At a conscious level, this may not be apparent as when the mind "forgets itself" in the sweep of strong emotion or when it vigorously asserts its individuality and separateness from the body. The physical organism, however, is always aware of both aspects of its reality.

Spontaneous Remission: The Body's Innate Ability to Heal Itself

What is spontaneous remission? The placebo response indicates that private expectations have the power to creatively influence in dramatic ways the functioning of the physical organism. Spontaneous remission is another category of phenomena which indicate that the physical organism has the innate capacity to heal itself even in the face of negative beliefs. Spontaneous remission refers to "the disappearance, complete or incomplete, of a disease or cancer without medical treatment or with treatment that is considered inadequate to produce the resulting disappearance of disease symptoms or tumor" (O'Regan & Hirshberg, 1993, p. 2). Mr. Wright's remarkable experience could be described as an instance of spontaneous remission. This does not, of course, explain how Mr. Wright's belief in Krebiozen turned on his healing system and how disbelief turned it off. The terms "placebo" and "spontaneous remission" are merely descriptive labels and designations applied to the phenomena that only *describe* what had occurred, and do not *explain* how it occurred.

Spontaneous remissions occur for practically all medically known diseases, following a complex range of events that one would not expect to cure a person at all. **Figure 2-2** identifies some of the many and varied medical disorders observed to go into remission following a complex range of physical,

psychological, and spiritual events and actions that one would not expect to cure a person at all of normally fatal diseases (O'Regan & Hirshberg, 1993).

Insert Figure 2-2 here

Other provocative demonstrations of the body's inherent healing ability are cases in which after the organ that was the primary site of cancer was surgically removed, the other organs to which the cancer had spread ("metastases") would frequently also be healed. In other cases, when an simple needle biopsy procedure of the primary cancer site occurred (i.e., there was no surgery to remove the cancer), secondary metastases would disappear. "Biopsy can be part of the process of inducing remission somehow. When you intervene in one area, it sets up a process which can help in another" (O'Regan, 1991, p. 50).

Implications for the biological foundations of psychology. *The body has an innate ability to heal itself.* The phenomenon of spontaneous remission is evidence that the physical organism is equipped, ideally speaking, to rid itself of any disease, and to maintain its health into old age. The inherent ability of the physical organism to heal itself can be illustrated in the context of the phenomenon of cancer.

> It is important to understand that the body develops cancer cells as an apparently natural process throughout the entire lifespan within the growth of clinically recognizable cancer tumors. This is illustrated by the fact that one form of cancer cell (neuroblastoma) is much higher even in babies than in the clinical incidence of the disease. On the other end of the scale, postmortem autopsies on practically all males 50 or over show evidence of prostatic cancer cells, yet actual clinical cancer is not evident in most of them. Since most people do not develop cancer even though cancer cells are continually produced, the body must have a natural immunological surveillance system that seeks out and destroys the single cancer cells before they grow into clinically evident tumors. (Rossi, 1986, p. 159)

Physicians encounter a similar capacity of the human body to heal itself whenever a patient with a so-called incurable disease suddenly recovers.

The body has the beliefs of the conscious mind to content with. Spontaneous remissions are evidence of the body's relative power to heal itself on its own despite negative beliefs held by the conscious mind. Obviously, if thoughts could indeed kill on their own, there would be no over-population problem. Spontaneous remission is an example of those occasions when the body consciousness, organization, and defense systems rise up in spite of the person's negative expectations and concepts and throws aside a condition of illness in a kind of sudden healing. In such situations, it is likely that the individual involved has already begun to question those negative considerations. Even if he or she does not know precisely how to discard those beliefs and transition to a set of healthy ones but desires to do so, the body's healing systems can become activated by that intent and a healing occurs.

In terms of the body's overall health and illness, our mental states nevertheless remain highly important. The body does not operate in isolation. but always has the beliefs of the conscious mind to contend with and upon which it relies for accurate appraisals of threats and opportunities in the physical environment and for proper interpretation of events happening in the human cultural world. When negative expectations and beliefs multiple and harden, however, the body's natural capacity to heal itself does indeed begin to diminish. It is the power of belief that is being demonstrated here, not the *inability* of the body consciousness on its own to heal itself, or an indication of the irrationality, ignorance, or helplessness of the subconscious mind under such conditions.

Free will always operates. The body consciousness is not a sponge indiscriminately soaking up beliefs and suggestions given to it, but only accepts and permits penetration into deeper areas of the physical organism those beliefs and expectations that are first sifted though and accepted by the conscious mind (Roberts, 1974, 1997a). The physical organism does not have full and clear domination over itself in any way that would deny choice or cut off learning of the conscious self. "Illness can be seen as a teacher, alerting us to disharmonies in our lives and demanding that we pay attention to finding a new sense of balance. In some cases, the crisis of illness serves as a gateway to spirituality. Faced with our own mortality, we are propelled to take stock of our lives and look for a new sense of meaning and happiness" (Fields, Taylor, Weyler, & Ingrasci, 1984, pp. 181-182). When we look at our illness as a symptom and symbol for what is missing or out of balance in our lives, we discover its meaning. Unless we believe that our illnesses have meaning, then we will not look for whatever meaning it may have for us.

A new paradigm of transpersonal medicine is needed. Unfortunately, spontaneous remissions remain understudied and undervalued. In fact, the traditional medical view is that spontaneous remissions do not *really* occur at all, but are the result of a mistaken diagnosis on the physician's part of the individual's condition and that the person probably never really had the disease in the first place. Physical illnesses (cancer, ulcers, allergies, warts, heart disease) have purely physical causes (diet, smoking, lack of exercise, viruses, bacteria, faulty genes, hormonal imbalance) and are cured by physical means alone (drugs or surgery). Period. Mental beliefs and expectations simply cannot influence the mindless mechanical operation of the inert and lifeless material of atoms and molecules, chemical neurotransmitters and hormones, cells and organs of the body. Such mind-body communications when they are reported to happen can only be the result of faulty observation, fraud, trickery, deceit, or a simple fluke of nature -- a random event occurring in an impersonal universe, which has no objective meaning or purpose, except that which is mistakenly given to it. Viewed as a contaminating nuisance factor and confounding variable in medical research that needs to be controlled rather than encouraged, the scientific evidence for the existence of spontaneous remission and the placebo effect and the powerful self-healing processes that they represent tends to be denied, ignored, or minimized -- as if such evidence does not exist, no matter how valid it is (Goodwin, Goodwin, & Vogel, 1979).

Nevertheless, these rare and spectacular demonstrations of mind-body communication and healing persist in the annals of medicine. In ignoring or minimizing the phenomena of spontaneous remission and the placebo response as a mere artifact, psychological science risks losing a deeper understanding of the true potential of one of the most powerful therapeutic psychological interventions available to humankind – the belief that our body does indeed have the power and capacity to heal itself. Transpersonal psychologists and physicians who recognize, acknowledge, and accept this innate healing ability of the body propose a new paradigm of *transpersonal medicine* (Lawlis, 1996).

> A new area of biology is emerging: the study of spontaneous remissions from normally fatal illnesses. Of all the astonishing properties of living systems the two most amazing are their ability to reproduce themselves and the ability to repair themselves in a wide variety of ways. As Lewis Thomas suggests, scientists studying spontaneous remission could uncover the mysteries of how the human body can cure itself, turning those mysteries into mechanisms of healing 'at will.' (O'Regan & Hirshberg, 1993, p. 1)

Transpersonal medicine's basic and firm foundation can be found in three key ideas: (a) the physical organism naturally possesses its own overall body consciousness whose main direction is always toward health, strength, fulfillment, vitality, and the fullest possible expression of its transformative capacities and extraordinary functioning, (b) the body possesses an organization that automatically corrects any imbalances, has healing processes that are forever active, and has its own defense systems that protect the physical organism from the mind's negative beliefs and that maintain the body in a condition of excellent

health into old age, and (c) the body's natural healing system can and must be trusted (Schlitz, Amorok, & Micozzi, 2005).

Miraculous Cures: Biological Pertinence of Faith

Distinguishing miraculous cure and spontaneous regression. Some individuals might consider Mr. Wright's remission of cancer described earlierto be an example of a "miracle" cure. Miracle cures are defined as "the sudden, permanent, and complete cure of a long-lasting condition of a more or less organic in nature for which no adequate treatment can be held responsible" (Van Kalmthout, 1985, p. 1). Miracle cures can be distinguished from spontaneous remissions (or regressions) by their time course and the definitiveness of the cure. Whereas miracle cures are sudden and permanent, spontaneous remissions tend to be more gradual and sometimes temporary. Because Mr. Wright's cure lacked permanency, it would likely be considered to be a temporary remission and not a miracle cure -- at least as far as the rules of evidence for miracle cures devised by the Roman Catholic Church are concerned.

Criteria for miracle cures and their medical and ecclesial assessment. Originally formulated in 1735 by Cardinal Lambertini (afterwards Pope Benedict 14th), five sets of criteria must be satisfied in order to be considered a "miraculous cure" (Dowling, 1984, p. 634):

1. The disease must be serious, incurable or unlikely to respond to treatment.
2. The cure must be sudden and reached instantaneously (or developed over a period of days). The disease must not have reached a stage at which it would have resolved by itself.
3. No medication should have been given, or if some medicines were prescribed then they must have had only unimportant effects (or potentially curative treatments demonstrated to have failed)
4. The cure must be complete, not partial or incomplete.
5. All claims for a miracle cure have to pass through the procedures of an International Medical Commission.

Lourdes, France has been a site of cures and healings ever since 1858 when three children saw a vision of the Virgin Mary. In 1954 a medical commission was established to scientifically verify the occurrence of reported cures that have resulted from drinking or bathing in the waters that flow from an underground spring there. Of the 6,000 claims of miraculous cures that have been evaluated by the International Medical Committee of Lourdes, only 64 have been identified as medically inexplicable and officially recognized as "miracles" by the Roman Catholic Church. **Figure 2-3** describes the rigorous procedures of the International Medical Commission by which all claims of cures at Lourdes, France are scrutinized before they can be declared to be miraculous by a bishop of the Roman Catholic Church.

Insert Figure 2-3 here

As the medical and ecclesial assessment process demonstrates, it is not easy for a physical healing to be proclaimed a miracle. The major miracle is that any alleged cure at Lourdes is declared a miracle at all.

Range of maladies for which complete remissions have been documented cures at Lourdes, France. Murphy (1992, p. 271) identifies the range of maladies for which complete remissions have been documented cures at Lourdes, including: ulcers on hands, feet and legs with extensive gangrene; anterolateral spinal sclerosis (motor disorder of the nervous system); tuberculosis (inflammation of the lungs); peritonitis (the inflammation of the walls of the abdomen caused by inflammation of abdominal organs, perforated gallbladder ruptured cyst, internal bleeding; leg and abdominal tumors (a swelling

caused by uncontrolled and progressive new growth of tissue); dorsolumbar spondylitis (a degenerative change in the spine); blindness of cerebral origin; bilateral optic atrophy (a wasting away of the optic nerve resulting in loss of vision and permanent blind spot in the center of the visual field); multiple sclerosis (the demyelization of the white matter of the brain and spinal cord resulting in paralysis); sarcoma of the pelvis (cancer of the hip); and Budd-Chiari syndrome (a circulatory system disorder involving closure or obstruction of blood vessels to the liver). **Figure 2-4** presents brief summaries of four investigated cases of documented miraculous cures at the famous shrine or by waters taken from its springs.

Insert Figure 2-4 here

Can faith reconstruct decaying bone? - The remarkable case of Vittorio Michelli. A remarkable case was documented by the Commission in 1972 of a cure that is considered impossible from the viewpoint of current medical science -- the reconstruction of a hip bone and cavity in the hip that had disintegrated as a result of a malignant sarcoma (Salmon, 1972). In 1962 Vittorio Michelli was admitted to the hospital in Verona, Italy with cancer of the bone and within 10 months the cancerous tumor had entirely eaten away his hip bone to such a degree that his left leg was only attached to his body by soft tissue and skin. As a last resort, with his leg in a plaster cast to keep it in place, he traveled to Lourdes. While bathing in the waters at Lourdes, Vittorio immediately felt a healing heat permeate his body. Soon afterwards his appetite and energy returned, and subsequent X-rays disclosed that the tumor had grown smaller until it eventually disappeared and the bone of his hip actually began to regenerate. Within months Vittorio was walking again and by 1965 his hip joint had completely reconstructed itself, an event unknown in the annals of medical science. The remarkable pelvis reconstruction represented a permanent cure as verified by subsequent X-rays in 1968 and 1969 – an event unparalleled in the history of modern medicine. According to the official report of the Medical Commission:

> Definitely a medical explanation of the cure of sarcoma from which Michelli suffered was sought and none could be found. He did not undergo specific treatment, did not suffer from any susceptible recurrent infection that might have had any influence on the evolution of the cancer. A completely destroyed articulation was completely reconstructed without any surgical intervention. The lower limb which was useless became sound, the prognosis is indisputable, the patient is alive and in a flourishing state of health nine years after his return from Lourdes. (quoted in O'Regan, 1991, p. 51)

Implications for the biological foundations of psychology. *Supernatural intervention is not required.* Orthodox Western science often assumes that "miraculous" cures such as Vittorio Michelli's necessarily require metaphysical concepts linked to a supernatural being having produced the desired results or the temporary suspension of so-called natural and physical law by some outside supernatural intervention. Not necessarily so. If health is a natural state of our being, then "'miraculous' healings are simply instances of nature unhampered" (Roberts, 1979a, p. 330). As St. Augustine put the matter: "Miracles do not happen in contradiction to nature, but only in contradiction to that which is known to us of nature." Miraculous cures are obviously natural and inherent in the body structures. They could not happen unless there were biological mechanisms that allowed for such performances. The 64 cases of documented cures at Lourdes could well be due to the accelerated healing capacity of the body's normal processes of organic repair that were activated by the individual's faith and belief in the healing power of Lourdes and what that place symbolically and psychically represents to the individual. Some of the most powerful beliefs that turn on the healing system are those that embody a person's spiritual faith (Benor, 2001). Or the cures may be due to natural processes we do not yet understand. "There is nothing abnormal in the world- there is only the lack of understanding the normal" (Swami Puri).

Suspension of natural law is not required. The laws of physics (at least those which are revealed to us by our scientific method) are not set in stone and are not as limited as our method of knowing reveals them to be. A parapsychological explanation for extraordinary phenomena that occur within the context of mysticism or religious events should not be ruled out *a priori*. Most of the reported miracles performed by saints throughout history in all of the world's great religions have also been performed by psychics. Many stigmatists including Padre Pio and Therese Neumann were renowned for their psychic abilities (Thurston, 1952). Proposing a supernatural cause is a less satisfactory interpretation of the facts than supposing that the "miracles" are produced by powers and abilities that lie deep in the individual human psyche that are latent within all of us or outcomes that are a result of the collective psychic action of large numbers of devote worshippers, intense faith, and fervent belief (Rogo, 1982; Gowan, 1980; Murphy, 1992).

Charisms of Catholic Saints and Mystics

Varieties of charismatic phenomena. Charismatic phenomena that are recognized by the Catholic Church are exceptional human experiences that frequently accompany mysticism and religious devotional practice. **Figure 2-5** lists some of the "charisms" or extraordinary phenomena identified by the *New Catholic Encyclopedia* (1967) that have been subjected to thorough investigations by church officials, medical researchers, and skeptical civil authorities not unlike the scrutiny that miracle cures at Lourdes have undergone.

Insert Figure 2-5 here

Unique body of evidence for human transformative capacities. Many saints and mystics of the world's great religions have exhibited these dramatic psychophysical changes in many cultures and throughout history, observed by reliable witnesses and thoroughly investigated and documented by highly informed religious authorities and medical researchers in volumes of medical reports, ecclesiastical reviews, and investigative journalists' accounts to uncover pious fraud or moderate uncritical belief.

> Taken as a whole, studies of Roman Catholic sanctity provide a unique body of evidence for human transformative capacities. . . . Roman Catholic canonization records provide compelling evidence for several types of metanormal capacity, and they undoubtedly contain clues about extraordinary functioning that no one has yet pursued. Someday, perhaps, their immense store of first-hand reports will be searched more thoroughly for insights about psychosomatic transformation. (Murphy, 1992, pp. 478-481)

Thurston (1952) provides an excellent summary of the canonization proceedings, psi research findings, and psychiatric interpretations related to the charisms of Catholic mystics and saints. Although the charisms of Catholic saints and mystics are not by themselves considered proof of sanctity by the Roman Catholic Church, they do demonstrate the extraordinary psychophysical transformations that accompany intense devotion and belief (Murphy, 1992, chap. 22; Schimberg, 1947).

Hypnosis: Changing "Unchangeable" Bodily Processes by Suggestion

What is hypnosis? Hypnosis or "trance" refers to a quite normal state of consciousness in which an individual narrows the focus of his or her awareness and concentrates attention upon a particular idea or belief to the exclusion of others, thereby activating subconscious mechanisms which dutifully materialize those suggestions in physical experience. What is suggestion? "Suggestion is no more and no less than an inner willingness and consent to allow a particular action to occur; and this consent is the *trigger* which sets off the subconscious mechanisms that allow you to construct inner data into physical reality"

(Roberts, 1997c, p. 215). Hypnosis seems strange and esoteric only when it is set aside from ordinary life and special procedures are assigned to it. Structured, formal induction procedures of hypnosis used in the laboratory demonstrate in a dramatic and accelerated way how beliefs and expectations dictate sense experience in everyday life (Roberts, 1974).

Hypnosis is a natural function of the conscious mind that goes on all the time and that everyone uses constantly in the alteration of beliefs. Without any formal hypnotic procedures used at all, each of us have quite literally "hypnotized" ourselves into all the beliefs that we have through the constant inner chattering that goes on in our heads throughout the day. Certain stages of dissociation resulting from this activity of the conscious mind being so focused, intensified, and narrowed to a specific area with all other stimuli cut out, allows the suggestions we are giving ourselves to go directly to the subconscious, where they are acted on.

"Unchangeable" bodily processes changed by suggestion. **Figure 2-6** illustrates the variety of so-called "unchangeable" bodily structures and functions that have been altered as a result of individuals willingly suspending certain beliefs and allowing themselves to accept others for a moment.

Insert Figure 2-6 here

Hypnotic phenomena -- like the placebo effect and spontaneous remission, miraculous cures and charisms of Catholic saints and mystics -- provide yet another glimpse of the *transpersonal nature of the physical body* -- the physical organism's inherent capacity for transformation and innate ability to extend and expand biological processes beyond their usual physiological parameters. In their summary of published research concerning hypnotic influences on bodily processes, Sarbin and Slagle (1979) conclude that the altered physiological processes observed following a traditional hypnotic induction are not unique to the use of formal hypnotic induction procedures, or to the peculiarity of the hypnotic context established in laboratory and clinical settings. Hypnotic phenomena are able to be produced by a wide range of "stimulating conditions including symbolic stimuli and imagining" (Sarbin & Slagle, 1979, pp. 299-300).

> Are observed alterations in physiological processes specific to the hypnotic "trance"? The answer is an unqualified no. …Can symbolic processes produce changes in biological processes? The answer is an unqualified yes. That somatic processes can be influenced by symbolic stimuli is an observation that goes back at least to Aristotle. The reviews of Dunbar (1954) and the reports to be found in *Psychosomatic Medicine* make clear that the introduction of a large variety of stimulating conditions including symbolic stimuli and imaginings, can influence life processes (Sarbin & Slagle, 1979, pp. 299-300)

The curious case of the fish-skin boy. Mainstream biological psychology can provide no satisfying explanation for many of the curious hypnotic phenomena listed in Figure 2-6. Suggestions received in a trance state, for instance, can cure warts that are caused by *viruses*, implying that suggestions received in a trance state can affect bodily diseases all the way down to the genetic level. Our genes are believed to be permanent, irrevocable blueprints for bodily processes that are not susceptible in any way to manipulation or control by either thought or emotion. Yet hypnosis has been documented to cure a genetic condition known as "congenital ichthyosis" or more generally, Brocq's disease, where the outer layer of skin forms a thick, hardened, cracked, scaly surface that resembles the skin of a fish or reptile such as an alligator. Despite the fact that it is a genetic disease for which there is no known medical or surgical treatment, a highly hypnotizable patient succeeded in healing the disease gradually on one portion of the body at a time until all of the scaly skin was gone -– as if the mind somehow knew how to target precisely the right portion of the body needed to carry out the suggestions offered (Mason, 1952). Permanent improvement of the skin was observed for 60-70% of the body over a period of 4 years.

Dossey (1991) makes two important observations about this case. One is that an important ingredient in the sixteen-year-old English boy's cure was the fact that he was highly hypnotizable. Hypnotic suggestions for the cure of asthma, the removal of migraine headache symptoms, and increased lymphocyte functioning have been found to be most effective in individuals who are capable of medium to deep levels of hypnosis as measured by standard hypnotizability scales (Collison, 1975; Hall, 1982-1983). A second observation is that "people suffering from genetic diseases need not change the genes themselves, only their manifestations" (Dossey, 1991, p. 154). Although hypnosis may not have changed the genes themselves (genotype), it definitely did change their physical expression (phenotype). Genetically-related diseases then are capable of responding to hypnosis. This means that beliefs and expectations are apparently able to reach down into the interior environment of the cell, the chromosomes, and even the genes themselves.

Explanations for hypnotic effects on bodily processes. Many possible mechanisms have been proposed by which hypnosis accomplishes somatic alterations, including subject hypnotizability, alteration of blood flow and limbic-hypothalamic system activity, electrical voltage change, and temporal reversal. It is known, for example, that individuals who score high on standardized scales of hypnotic susceptibility (e.g., Harvard Group Scale of Hypnotic Susceptibility, Stanford Hypnotizability Scale) are most likely to exhibit the capacity to influence autonomic, endocrine, and immune system functioning following a formal hypnotic induction procedure (Hilgard, 1986). Hypnotic susceptibility, however, does not correlate highly or consistently with any personality characteristic as measured by global test of personality, such as anxiety, social desirability, conformity, social influencibility, or attention (Hilgard, 1968). The hypnotizable person is

> one who has rich subjective experiences in which he can become deeply involved; one who reaches out for new experiences and is thus friendly to hypnosis; one who accepts impulses from within and is not afraid to relinquish reality testing for a time….These free, irrational, reality-distorting characteristics may be found in flexible combination with realistic academic and social adjustment. (Hilgard, 1968, p. 268)

Rossi (1986) proposes that trance state-dependent suggestions likely initiate and direct mind-body communication and facilitate the mind's ability to select and influence the precise processes by which it brings local effects on specific body functions by "altering the direction of blood flow" via specific neuropeptide channels and receivers (p. 109). Justice (1987) suggests that hypnosis may work by "producing changes in the electrical voltage that alter the chemical and cellular processes at the target areas of the body" (p. 317). Transpersonal writer and mystic Jane Roberts (1974) offers a more esoteric explanation for the observed changes in bodily processes following hypnotic suggestion, placebo, spontaneous remission, and miracle cures.

> You must understand that basically time is simultaneous. Present beliefs can indeed alter the past…A new belief in the present…can cause changes in the past on a neuronal level. In some cases of healing, in the spontaneous disappearance of cancer, for instance, or of any other disease, certain alterations are made that affect cellular memory, genetic codes, or neuronal patterns in the past. In such instances there is, as easily as I can explain it, a reaching into deep biological structures as they existed at one time; at that point the probabilities are altered, and the condition erased in the present – but also in your past. A sudden or intense belief in health can indeed "reverse" a disease, but in a very practical way *it is a reversal in terms of time.* New memories are inserted in place of the old ones, as far as cells are concerned under such conditions. This kind of therapy happens quite frequently on a spontaneous basis when people rid themselves of diseases they do not even know they possess. (pp. 325-326)

Implications for re-visioning the biological foundations of psychology. Wherever the explanations for how *beliefs about the body become expressed in changes in bodily functions,* so-called hypnotic phenomena have important implications for re-visioning the mind-body problem.

> The data presented. . . should, once and for all, topple the dualistic dichotomy between mind and body which has strongly dominated Western thought since Descartes. The meanings or ideas embedded in words which are spoken by one person and deeply accepted by another can be communicated to the cells of the body (and to the chemicals within the cells); the cells then can change their activities in order to conform to the meanings or ideas which have been transmitted to them. (Barber, 1984, pp. 115-116)

Dualistic dichotomy between mind and body is inadequate. How the mind is able to concisely isolate the right part of the body and select and influence precisely the right antibody, hormone, nerve-cell activity, enzyme, neurotransmitter, cellular processes, and so forth in order to carry out a verbal suggestion made during hypnosis remains a mystery at this time. *That* it can do so in some people under certain circumstances through the use of mental imagery or carefully chosen words and communications (suggestions) in a predictable, measurable, and reproducible way is a fact to which greater cognizance needs to be given by mainstream biopsychology. Obviously, the alterations in physiological processes that are observed in hypnosis could not happen if our physical body did not have built-in capacities allowing them to occur.

The mind-body communication that occurs in an accelerated form in formal, structured hypnosis also occurs on a daily basis in our everyday lives. Cancer surgeon Bernie Siegel (1986), in his work with "exceptional" patients who survived five years or more from time of diagnosis, found that nearly all diseases to some degree originate in the conscious beliefs of the patient that subsequently generate the emotional reactions and influence the subconscious processes that play a significant role in the creation of physical health or illness (a relationship he calls "soma-significant"). One practical application of this fact is for individuals to become more alert to their own stream of consciousness, and to notice when negative suggestions are being given to oneself. Feelings of depression, for example, do not suddenly swoop down upon a person for some unknown reason. The individual has actually been entertaining negative beliefs and expectations over a period of time that have, in turn, generated those feelings. No individual is helpless, however, in the face of negative beliefs, but can choose to focus upon positive concepts instead so they become as natural as the negative beliefs may have become. If negative habits of thought and withheld feelings and emotions can get an individual into illness, then positive habits of thought and the expression of feelings and emotions can get the person out (Roberts, 1974).

Multiple Personality: Change of Mind Creates a Change of Body

Evidence of extraordinary psychophysical plasticity in multiples. The physioplasticity demonstrated in the dissociative state of consciousness called multiple personality disorder (MPD) provides yet another source of evidence of the physical organism's potential to form from its own biological components and inner body consciousness a broad range of possibilities for transformative capacity and exceptional functioning. **Figure 2-7** lists the sorts of exceptional psychological and physiological changes observed to occur when beliefs related to self-image take over the conscious mind and become reflected in the physical organism.

Insert Figure 2-7 here

Unchangeable" bodily processes changed by shift in self-image. As noteworthy as the remarkable psychological differences that may occur between sub-personalities in name, age, memories, handwriting, sex, cultural and racial backgrounds, artistic talents, foreign language ability, and IQ, more noteworthy are the supposedly "unchangeable" biological changes that occur in the physical body as a result of switching from one ego-state to another different ego-state (Braude, 1995).

> One of the hallmark research findings in MPD ego state experiments is the discovery that different states vary in regard to internal self perception (physical appearance, age, voice quality, etc.) as well as external physical characteristics, such as visual acuity, EEG patterns, allergies, drug sensitivity, skills, habits, vocabulary, taste discrimination and performance on IQ and projective tests (Greaves, 1980). In the same physical body an adult ego state who smokes, wears glasses, is right-handed, good at math, allergic to sulfur, diabetic, and possesses a normal IQ can exist alongside a child ego state who has never smoked, has 20/20 vision, is left-handed, paints, has no medication allergies, is not diabetic, and scores in the 130's on the same test. (Damgaard, 1987, p. 128)

The received wisdom of biopsychology tell us that such bodily processes -- many of which have genetic "determinants" -- are supposed to be unchangeable and uninfluenced by stimuli as intangible as the self-image or self-concept (Freberg, 2006). *Handedness* is a characteristic that does not undergo sudden shifts once established. A person who is *color-blind* remains that way. *Visual acuity* does not automatically change from nearsightedness to farsightedness at will. *Intelligence* is a stable personality trait that does not change from one moment to another. *Blood flow* and *brain wave activity* is not ordinarily subject to conscious control without biofeedback training or years of disciplined yogic training. *Allergic responses* are not simply turned on and off when one wants them to. Yet they can be and are in the provocative demonstration of personality action known as multiple personality (Bliss, 1980; Braun, 1983a, 1983b; Coons, 1988; Greaves, 1980; Miller, 1989; Putnam, 1984; Putnam, Zahn, & Post, 1990; Sutcliff & Jones, 1962; Taylor & Martin. 1944). It is important to note that the anomalous physiological phenomena observed in MPD are not unprecedented, being discovered and reproduced by the pioneers of *hypnosis* at the turn of the century (Braun, 1983b; Hilgard, 1986; Kroger, 1979; Putnam, 1986a).

Implications for re-visioning the biological foundations of psychology. *We have scarcely glimpsed the complicated realities of the human mind.* MPD clearly supports the idea of the existence of subconscious layers within the human psyche and multiple controls in human experience and behavior (Beahrs, 1982). It also clearly shows that the integration of mind with body and of body with mind is not illusory. Imagine the degree to which mind and body must interweave with one another for a change in mood and thought to produce the complex and multifaceted processes involved in restoring destroyed or injured cells, in stopping the production of specific antibodies, in reversing the inflammation of individual capillaries of the lung and the release of fluid, or in deactivating the action of particular chemicals, especially histamine, to stop an allergic reaction in its tracks. Imagine all the physiological processes that must be controlled at a moment's notice to decrease the lactic acid and uric acid in the blood and decrease fat in the liver and in the blood in order to cancel the effects of alcohol in the blood system. Imagine the metabolic processes and body cells that must be precisely manipulated to restore sufficient insulin production from the beta cells of the islands of Langerhans in the pancreas, or decrease the insulin requirement by the tissue cells, or increase the effectiveness of insulin by deactivating one or more insulin antagonists in order to turn diabetes on and off. How does one change the color of the iris which is genetically determined in the same way as skin color? If it seems that biological psychology has glimpsed the complications of the human body, MPD shows that we have scarcely begun to glimpse the complicated realities of the human mind.

The alterations in physiological processes that are observed in switching from one identity state to another could not happen if our physical body did not have built-in capacities allowing them to occur. Biological

psychology's understanding of the phenomena of *neuroplasticity* -- how the brain can generate new connections between brain cells; how one brain area previously devoted to one function can take over the function of another damaged area; how certain brain structures such as the hippocampus can restore lost brain cells -- would be deepened if it were to include an understanding of the physical organism's capacity to undergo rapid biological change in response to changes in psychological identity states, as demonstrated by the psychophysical plasticity of multiple personalities. In multiple personality disorder (MPD) we have evidence of mind (consciousness) creating different manifestations of biological events (matter) *at will* as different ego states emerge, shift, and change. When different personalities are in control of the body the chemical make-up may vary considerably, for example, showing significant differences over the dominant personality's usual hormonal status. It is important to recognize in phenomena of this kind, that "the chemical changes are caused by the transition of beliefs that operate, and not the other way around (Roberts, 1974, p. 131).

The innate mobility and ever changing quality of the human psyche is expressed in flesh. MPD demonstrates in a dramatic and focused way the innate mobility and ever-changing quality of the human psyche as expressed in flesh. Transpersonal psychiatrist Roberto Assagioli (1991/1988) proposes that areas of the subconscious in *normal* human personality are indeed populated by many and various subpersonalities. Is it any wonder, then, considering the mind-body communications displayed in MPD, that our body so often sometimes seems to be besieged with ailments that come out of the blue or that our personalities so often appear to behave in contradictory terms? Interestingly, "once a multiple has undergone therapy and in some way becomes whole again, he or she can still make these switches at will. This suggests that somewhere in our psyches we *all* have the ability to control these things" (Talbot, 1991, p. 100).

Biofeedback

Any biological process is potentially controllable via biofeedback. Biofeedback research has demonstrated that a broad range of internal biological processes once believed to be *beyond voluntary control* (e.g. heart rate, blood flow, muscle firing, skin temperature brain wave activity) can in fact be brought under conscious control when the ongoing activity of these physiological processes is made known and provided as "feedback" to the conscious mind (Green & Green, 1977; Green, Green, & Walters, 1970; Miller et al., 1974; Murphy, 1992, chap. 16; Olton & Noonberg, 1980). **Figure 2-8** identifies the variety of bodily functions that can be modulated by feedback.

Insert Figure 2-8 here

"It may be possible to bring under some degree of voluntary control any physiological process that can continuously be monitored, amplified, and displayed" (Green & Green, 1977, pp. 42-42). "To date, there is evidence that every physical function that can be measured in this way can be controlled and regulated to some extent" (Achterberg, 1985, p. 99).

What is instrumented feedback? In traditional forms of *instrumented* biofeedback, information obtained from electronic instruments (e.g., temperature sensors attached to the skin, electrodes attached to the back of the scalp, monitors of the electrical conductance of the skin) is presented to subjects in the form of an auditory tone that varies in pitch or in the form of a visual display that varies in brightness as the biological process being monitored increases or decreases in functioning. Through a combination of focused concentration, high degree of involvement with the feedback stimulus, a restful state of relaxation that lowers awareness of body sensation, low levels of internal mind chatter, coupled with a relaxed desire to influence the stimulus display in the intended direction, so-called "unconscious" biological processes can be influenced through conscious will, intention, and purpose via mental imagery.

Non-instrumented biofeedback is possible. Once a particular biofeedback for producing specific physiological states is thoroughly learned and mastered, then mechanical devices can be dispensed with. "Numerous studies have shown that self-regulation skills acquired through biofeedback training can be dispensed with. By 1990, for example, more than 2,000 subjects at the Menninger Foundation had learned to modify various bodily processes through a combination of feedback, Autogenic Training, and visualization so that their new self-control did not depend upon machines" (Murphy, 1992, p. 350). What is truly amazing is the *degree of specificity* of self-regulation that can be developed and achieved following training in biofeedback procedures, and the ability to maintain such control *without overt feedback.*

Imagery ability is important for biofeedback success. What are the characteristics of people who respond to biofeedback training and therapy? Apparently "not everyone responds well to biofeedback therapy. . . .The best success rates across all diagnoses average around 60 percent" (Achterberg, 1985, p. 100). The successful individual needs to be motivated to learn the technique, willing to spend time practicing it, believe that it will work, and trust the trainer. Beyond these issues of motivation, "the basis for individual differences in learning biofeedback… [appears] to be the ability to use the imagination. Those individuals who were unable to fantasize, who seldom remembered their dreams, and who were not regarded as particularly creative, had the most difficulty in learning the biofeedback response. . . . The person learns to do 'something' with his mind that allows conscious communication with the body. This 'something' does not relate to words, but to *images* engaging various sensory and motor systems" (Achterberg, 1985, pp. 99, 101). The ability to learn to consciously regulate bodily processes is apparently normally distributed across the population with a majority of people able to use their imaginations in this way. "The widespread success of biofeedback training has shown that most, if not all people [with sufficient practice, motivation, and self-awareness to achieve mastery] can improve their powers of self-regulation" (Murphy, 1992, p. 350).

Implications for biological foundations of psychology. *Capacity for inner perception of somatic events attributed to specific yogic practices.* The effects that compelling mental images may have on local bodily functions provides one kind of evidence for the transpersonal nature of the physical body. Somatic awareness and self-regulation mediated by visual imagery hints at *capacities for inner perception* historically attributed only to practitioners of Hindu, Buddhist, and Taoist Yoga. Such extrasomatic awareness has been reported to be acquired by certain specific yogic practices (Aranya, 1977) and consists in an awareness of cells, molecules, and even atomic events within the body. Such enhanced kinesthetic awareness mediated by visual imagery or immediate feedback of the body's processes points to the extraordinary, metanormal capacity for the perception of somatic events through "inner senses" that does not depend upon bodily organs (i.e., extrasomatic).

Imagination is a bridge linking mind and body. Humans are a species that specialize in the use of imagination (Brann, 1991). We can anticipate and conceive of a vast number of probable events and not just actual ones, manipulating possible outcomes in our imagination with each one remaining probable until we activate it. As a consequence, humans inevitably show a wider variety and range of biological and behavioral reactions than nonhuman animals do to the same stimuli. The applied use of the imagination is one of the most distinguishing marks of our species. Imagination is not only a channel connecting waking and dreaming activity, but it is also a bridge linking thought and bodily processes. The use of mental imagery has been used in a variety of health care settings to successfully treat cancer, chronic pain, rheumatoid arthritis, diabetes, severe orthopedic trauma, burn injury, alcoholism, and stress-related disorders such as migraine headaches and hypertension (Achterberg & Lawlis, 1980, 1984; Sheikh, 1984). "Images… are the language the body understands, particularly with regards to the autonomic or involuntary nervous system" (Achterberg, 1985, p. 99). Achterberg (1985) describes research demonstrating that mind-body imagery can be used to control very specific physiological

processes, including the electrical activity of neurons and the number of particular types of white blood cells in the body (e.g., neutrophils or T-cells) that combat cancer.

Imagery has long been a part of the mental training of the world's greatest athletes to promote peak performance (Garfield, 1984). The role of the imagery in setting and overcoming limitations is dramatically illustrated in the story of Roger Bannister who broke the four-minute mile barrier.

> Roger Bannister who, in the face of absolute 'irrefutable' scientific evidence that the human being could not run faster than four minutes in a mile, had an image of being able to break the four minute mile. This proved to have been a *psychological*, not a physiological, block because within the same year that Roger Bannister broke the four minute mile barrier, [John Landy did it five weeks later], 52 other men broke the record too. (McNeill, 1991, p. 33)

Ian Stevenson (1997a), Professor of Psychiatry at the University of Virginia, recounts an evocative clinical case of physical changes in the body corresponding to mental images accompanying the revival of intense memories of earlier trauma.

> In the 1950's, several examples of this phenomenon were published. In one of the most impressive, the subject relived (with the help of ether) an occasion when, being in a hospital and requiring restraint, his arms had been tied with a rope. When the patient relived this experience, deep curved depressions appeared on his lower arms. They were exactly like those that occur on the flesh of a person tied with ropes…. In another published case a patient relieved a severe caning inflicted on her by her sadistic father. He had used a carved cane, and the unusual pattern of the carving on the cane appeared on the skin of the patient as she relived being beaten with this cane. (p. 17)

The effects that compelling mental images may have on local bodily functions provides another sort of evidence for the transpersonal nature of the physical body and its capacity to richly form from itself a broad range of possibilities for transformative capacity and extraordinary functioning.

The Psychobiology of Mind-Body Communication

Psychoneuroimmunology as a bridge relating mind and body. *What are the biological pathways through which belief and expectation, faith and prayer, suggestion and self-image, imagery and imagination work their magic to change supposedly "unchangeable" bodily processes? The science of psychoneuroimmunology (PNI) specializes in the study of the interactions between the mind (psycho-), central nervous system (neuro-), and immune system (immunology). PNI research indicates that consciously-meditated expectancies and noncognitively-mediated classical conditioning activate the body's healing system by way of the central nervous system (Kiecolt-Glaser & Glaser, 1992; Maier, Watkins, & Fleshner, 1994). Based on a variety of neurochemical and neuroanatomical evidence obtained in experimental and clinical studies, PNI has documented the existence of bidirectional (feedback and feedforward) communication pathways between the central nervous system (the brain via the hypothalamus-pituitary-adrenal axis) and the body's immune system, involving responses of many cells to multiple stimuli, with each providing important regulatory control over the other (Ader, Felton, & Cohen, 2000; Pert, 1997; Rossi, 1986).* ***Figure 2-9*** *identifies five ways in which mind modulation of autonomic, endocrine, and immune systems can occur.*

Insert Figure 2-9 here

"The findings of psychoneuroimmunology and related fields reveal: (1) the highly interactive, feedback-laced nature of psychophysiological functioning; (2) multiple ways in which particular alterations of consciousness, behavior, bodily structure and processes are mediated; and (3) the immense specificity with which significant changes are happening, moment by moment, throughout the nervous, endocrine,

and immune systems" (Murphy, 1992, p. 23). PNI has identified some of the hard-wired pathways by which the belief system and the healing system communicate with each other.

How belief becomes biology. Health psychology has shown that, in terms of the body's health and illness, our mental states are highly important. Thoughts and feelings form an "interior" environment of concepts to which the body responds. Beliefs that foster apathy, despair, or hopelessness are biologically destructive, causing the body to automatically suppress the immune system and lower bodily defenses, change body chemistry and alter hormonal balances and, under certain circumstances, initiating disease conditions (Dunbar, 1954; Herbert & Cohen, 1993). How we physiologically react to environmental stressors depends on how we psychologically appraise them which, in turn, influences how we behaviorally cope with them (Lazarus & Folkman, 1984). In the words of Norman Cousins (1989), "belief becomes biology." How does this occur?

> The body perceives the physical universe, and sends messages to the mind about it; the mind interprets the perceptions according to its own individual past experience and its belief system, and signals the body to react in a way which it feels is appropriate. If the mind's belief system (on a conscious or unconscious level) says that it is appropriate or inevitable to get sick in a certain situation, it will signal the body accordingly, and the body will obligingly manifest symptoms of illness; it will in fact become ill. So the whole process is closely tied in with our deepest concepts and ideas about ourselves, life, and the nature of disease and health. (Gawain, 1982, pp. 57-58)

The psychophysiological principle. The effects of the body are felt in the mind and the effects of the mind are felt in the body. This transactional relationship between body → mind and mind → body operates according to what is called the *psychophysiological principle*: "Every change in the physiological state is accompanied by an appropriate change in the mental-emotional state, conscious or unconscious, and conversely, every change in the mental-emotional state, conscious or unconscious, is accompanied by an appropriate change in the physiological state" (Green, Green, & Walters, 1970, p. 3). The operation of the psychophysiological principle is one way of understanding how mind modulation of the autonomic, endocrine, and immune systems occurs.

Implications for biological foundations of psychology. *Psychosomatic communication networks operate.* There is then a "psychosomatic communication network" that links beliefs, moods, and attitudes with the body (Hafen, Karren, Frandsen, & Smith, 1996; Justice, 1987; Rossi, 1986; Schlitz, Amorok, & Micozzi, 2005). This seems to be the physical basis how something supposedly purely "mental" - such as ideas, emotions, meaning, and intent - can have physical effects on the body powerful enough to melt tumors through placebos, reverse terminal illnesses in spontaneous remissions, reconstruct decaying bone in miraculous cures, eliminate warts through hypnosis, alter "unchangeable" physiological processes through shifts in self-image in multiple personality, lower blood pressure without drugs or surgery through biofeedback, and modulate immune responses through visual imagery.

Body and mind as two interweaving processes that are mental and physical at once. Thought has a physical reality in addition to its recognized mental aspects; the body has mindful aspects in addition to its acknowledged physical reality; the mind affects the body and the body affects the mind in return. Thus,

> Do not think of the mind as a purely mental entity and of the body as a purely physical one. Instead, think of both mind and body as continuing, interweaving processes that are mental and physical at once. Your thoughts actually are quite as physical as your body is, and your body is quite as nonphysical as it seems to you're your thoughts are. You are actually a vital force, existing as part of your environment, and yet apart from your environment at the same time (Roberts, 1997a, p. 131).

The thoughts and images, feelings and desires, purposes and intents that form the inner environment of the conscious mind is also a part of the inner environment of so-called "unconscious" cellular reality. This interior psychic environment is as real, valid, varied, and important as the exterior physical environment for the species' survival and well-being and, however private, forms a part of the inner environment of communication between body and mind.

Body, mind, and world form a living system. The soma (body) and psyche (mind) form a natural living system. A "systems" view sees the world in terms of relationships, patterns of organization, and interactions rather than as a composite of individual entities or structures existing in isolation, independently of each other. Although we may feel subjectively separate from nature and each other, we are actually interdependent and interconnected within the whole "field" of reality. We are a part of what physicist Fritjof Capra (1996) called "the Web of Life." There are no closed systems. Open living systems are wholes whose specific processes arise from the interactions and interdependence of their parts, just as organs within the body may carry out their unique and individual functions while remaining totally interconnected and interdependent one upon the other.

The mind is as physical as the body; the body is as spiritual as the mind. Transpersonal psychology recognizes that while we are physical creatures in the world of space and time, there is no division between the mental and the physical. If we think there is, then we do not sufficiently understand the physical reality of our thought. In physical life, our conscious mind is largely dependent upon the workings of our physical brain. Our mind in life is connected with the brain and the physical organism. Thoughts are as natural as any portion of the body. They are as much a part of nature as feelings are. We always dwell within a natural framework which means that our thoughts are as natural as the cells within our body -- and as real. There is no difference between the energy that shapes your ideas and that heals your finger. The same power that moves your mind forms your body.

II. The Transpersonal Nature of the Body

Further Reaches of the Transpersonal Body: Distant Mental Influence

When Norman Cousins (1989) says that "belief becomes biology" he is referring to this living system of interweaving body-mind processes and to how "an external suggestion can become an internal expectation, and that internal expectation can manifest in the body" (Radin, 1997, p. 148). Fifty years ago this idea was scientific heresy. Today, studies of the placebo response and spontaneous regression, miracle cures and charisms, psychophysical plasticity observed in hypnosis and multiple personality, and mind modulation of the autonomic nervous system via biofeedback and mental imagery have made the notion of mind-body interaction more commonly accepted. We still do not completely understand the precise biochemical and neurological actions that *transduce* and *transmit* mental intention to their precise bodily targets. Nor do we know the limits of mental influence on the body. If the mind interacts with its own body (proximate mental healing), can it also interact with other physical bodies distant from it?

What is the evidence for distant mental healing? A great deal of evidence exists for "distant mental interactions" with living organisms, including cell cultures, bacteria, plants, and other living organisms (see, for example, Becker, 1990a; Benor, 1990, 1993a, 1993b, 1993c, 2001; Braud, 2003; Collip, 1969; Gerber, 1988; Joyce & Welldon, 1965; Loehr, 1969; Schouten, 1993; Solfin, 1984). The entire Fall 1993 issue of *Advances: The Journal of Mind-Body* Health (Vol. 9, No. 4). is devoted to the question of "Is There Evidence for Spiritual Healing"? Dossey (1993) identifies more than 56 double-blind, randomized-control group design experiments dealing with healing effects of prayer on cells, bacteria, plants, and on human and nonhuman animals showing statistically significant results out of the more than

131 studies he reviewed. The odds of obtaining 56 successful results out of 131 experiments are beyond a trillion to one.

Implications for the foundations of biological psychology. *A more comprehensive model of reality is needed* . The power of intercessory prayer to influence bodily processes *at a distance* suggests something important about the nature of life, mind and consciousness, and the transpersonal nature of the physical body (Krippner & Villoldo, 1976). Psychiatrist Eric Leskowitz (1993) observes:

> Clearly the standard biomedical model of man as an isolated biologic machine is not adequate to explain these dramatic physical effects of absent prayer. Nor, in this case, is the common psychoanalytic view that prayer is simply a defense mechanism which decreases anxiety. Yet neither is the paradigm of psycho-neuro-immunology adequate, for it postulates mind-body connections mediated by cellular biochemistry, limited by physical constraints, and unable to span the boundaries of space and time set up in [these] studies. Hence, once one has convinced oneself that [these] studies [are] methodologically rigorous, one must find a more comprehensive model of reality to explain the surprising results. (p. 51)

Extraordinary psychophysical plasticity as a result of placebo response and spontaneous remission, miraculous cures and charisms, hypnosis and multiple personalities, directed imagery and biofeedback provide some indication of the degree to which thoughts and images in a person's mind may affect changes one's own physical body. Intercessory prayer provides an indication that thoughts and images in one person's mind may affect changes in *another* person's body. This latter phenomenon requires a new model of the nature of physical reality, human personality action, and the physical organism itself.

Indirect evidence for the soul. The empirical data supporting distant mental influence contribute in an important way to the substantial body of research providing "indirect evidence for the soul" (Dossey, 1993, p. 6) . This body of evidence generally supports the overall hypothesis of the survival of the human personality after death (Becker, 1993; Doore, 1990; Myers, 1903/1961; Tart, 1997). This body of evidence includes (a) out-of-body experiences (Monroe, 1973; Rogo, 1978; Osis & McCormick, 1980), (b) psychic phenomena (Nash, 1986; Tart, Puthoff, & Targ, 1979; Jahn & Dunne, 1987), (c) near-death experience (Moody, 1975; Morse, 1990; Ring, 1984; Ring & Cooper, 1999), (d) death bed experiences (Osis & Haraldsson, 1997), (e) bereavement apparitions (Sidgwick, 1962), (f) reincarnation research (Stevenson, 1974, 1987, 1997b; Woolger, 1987), and (g) vibrational (energy) medicine (Benor, 1993a, 1993b; Gerber, 1988; Kunz, 1985; Leadbeater, 1980; Moss, 1979) . This research evidence outlines the parameters of what may be identified as actions of the transpersonal body (see also Kelly et al., 2007; Murphy, 1992). How are such provocative demonstrations of biological action possible and how are they to be explained? The physical organism's range of extraordinary functioning and possibilities for transformative capacity can perhaps be initially understood within the framework of modern physical theory of quantum mechanics (i.e., since Einstein proposed that matter and energy are interchangeable, the body may be perceived and understood as energy rather than matter).

The Quantum Body

Matter in classical physical theory. Mainstream psychology has carried forward the false belief based on classical Newtonian physical theory that the way a thing appears to the physical senses on the "outside" is the way the ultimate units of which it is composed appear on the "inside" (Griffin, 1997, p. 134). If something appears to be solid, stable, indivisible, mechanical, mindless on the outside extrinsically, then that is the way it is on the inside intrinsically. What you see is what you get – all the way down. Such a perspective is unable to look beyond the surface, however, or to provide an adequate understanding of the transpersonal nature of the physical body and its transformative capacities. According to transpersonal writer and mystic Jane Roberts (1972):

> You observe the outside aspect of objects. Your physical senses permit you to perceive the exterior forms to which you then react, but your physical senses to some extent force you to perceive reality in this manner, and the inside vitality within matter and form is not so apparent. …Physical form is one of the camouflages that reality adapts. The camouflage is real, and yet there is a much greater reality within it – the vitality that gave it form. Your physical senses then allow you to perceive the camouflage, for they are attuned to it in a highly specialized manner. But to sense the reality within the form requires a different sort of attention, and more delicate manipulations than the physical senses provide. (pp. 12-13)

Matter in modern physical theory. Modern physical theory consistently shows that the physical entities that compose our body – molecules, atoms, electrons, electromagnetic waves, and so forth – do not inherently possess the sensory qualities of solidity and stability, indivisibility and duration which we experience our body to have (Bohm, 1980; Friedman, 1997; Goswami, 1995; Mindell, 2000; Talbot, 1991; Wolf, 1999; Zohar, 1990). The perceivable shape and measurable physical mass of the biological body (and brain) is actually a kind of camouflage and apparent form that gives the body its outward physical appearance – its three-dimensional face. The more matter itself is explored, the more apparent it becomes that within it *energy* takes certain forms – organs, cells, molecules, atoms, electrons, electromagnetism, light, sound – each less physical than the last, each combining into mysterious patterns to form the matter of the body (Becker & Selden, 1985; Davidson, 1988). Once we acknowledge that beneath the neuron's physical appearance is the energy that composes it, we understand that our perception of the physical body (and brain) as a *solid, stable, individual, mechanical,* and *mindless* thing provides only a superficial, narrow, and incomplete way of representing the facts about the physical nature of our being (Dossey, 1982, 1991).

The body electric. It is known that the body exists as many things. It exists as radio waves, electromagnetic energy, light and sound, and so forth that can be detected using instruments designed for that purpose. The electrical reality of the physical organism has long been recognized by mainstream psychology (e.g., resting potential or membrane potential; nerve impulses or action potentials; local potentials or graded potentials). "Electrical signals are the vocabulary of the nervous system" (Rosenweig, Leiman, & Breedlove, 1999, p. 56). Psychologists routinely use devices in research to record the electrical activity associated with biological functioning in neurons (EEG), the skin (GSR), the heart (EKG), and muscles (EMG). All this electrical activity occurs against the more general background "noise" of the naturally occurring, random atomic oscillations produced by ordinarily invisible thermal energy in the human body. As major technological advancements occur in our ability to detect and measure various forms of energy, such as SQUID (superconducting quantum interference detector) technology, for example, our understanding of the bioenergetic nature of life expands. Although psychologists have long recognize the electromagnetic reality of mind and body, mainstream biological psychology has been reluctant to acknowledge the existence of a human energy field that surrounds the entire body and which can be photographed, as in Kirlian photography (Ostrander & Schroeder, 1970). One reason for this reluctance is the philosophic commitment to a Newtonian-based physics that has created a barrier to psychology's ability to perceive the physical organism's underlying transpersonal dimensions and action (Moss, 1979).

Body illusions. Five "illusions" regarding the physical organism -- that it is solid, stable, individual, mechanical, and mindless -- have shaped mainstream psychology's perception an understanding of the biological foundations of behavior and mental processes for over 125 years (Dossey, 1982, pp. 72-81; 1991, pp. 105-137). It is not that these "illusions" are false. In fact, they are quite practical perceptions that are necessary for physical survival of the body as it manipulates and moves about within the physical environment.. The problem of perception in biological psychology is that sensory data only reveal one-half or one-third of reality and need to be supplemented with the additional understanding that

transpersonal psychology can provide at this time. Mainstream psychology, despite its outward appearing scientific face, still acts as if Einsteinian concepts and quantum physics have no application to understanding the operations of cells in the body or the actions of the physical brain. Mainstream psychology is a perceptually-based psychology that has become slavishly dependent upon the physical senses for its knowledge of human experience and behavior. As modern physical theory reveals, however, there is always more going on than ordinary sense data show, and "everything that is apparent three-dimensionally has an inside source, out of which it appearance springs" (Bohm, 1980; Roberts, 1979a, p. 340). Physically we are more than we know. What we see of the neuron and other body cells is not all there is to the neuron or the cell. There is much more to the matter of matter than meets the eye of flesh.

The solid body. In order to understand the nature of these "body illusions" examine for a moment your experience of your own body. You experience your body as solid just as you perceive all other physical matter in the environment. Your body is composed of the same "stuff" as all other matter in the universe: atoms. The atoms within your body, however, spin in a cloud of constant commotion and activity. Your body and its organs are actually objects and events in constant motion - atoms and molecules forever moving. The body that we perceive as being so solid and the very senses that make such a deduction are the result of the behavior of swiftly moving particles orbiting each other in which great exchanges of energy continually occur – atoms and molecules literally coming together to form the organs, filling a pattern of flesh (Dossey, 1982). The atoms themselves are composed almost totally of thin air with most of their mass concentrated in the nucleus, with the electrons that are directing their motion separated from the nucleus by a vast expanse of empty space. "To get an idea of this immensity, imagine an orange in the center of the Astrodome. This gives a relative picture of the 'stuff' of the body; almost all of it is nothing" (Dossey, 1991, p. 107). "We have two realities: one in which our bodies appear to be concrete and possess a precise location in space and time; and one in which our very being appears to exist as a shimmering cloud of energy whose ultimate location in space is somewhat ambiguous" (Talbot, 1991, p. 191).

The stable body. You experience your body as a constant, stable physical object among other objects that changes only slowly and gradually over the years. The body, however, is in a state of constant change, and cannot be said to be the same from one moment to the next, even though it appears as a stable duration. The processes of "homeostasis" is one example of the body in a state of constant change - maintaining balances among all of its systems, adjusting hormonal levels, regulating body temperature, heart rate, and blood pressure - in response to changes not only inside the body but to a constantly changing external environment. When stress disturbs homeostasis, multitudinous actions and reactions are simultaneously and automatically set in motion and intricate calculations instantly made to correct the disequilibrium, with no conscious thought on your part at all and at speeds too fast to consciously follow.

Your eyes and ears certainly seem to be permanent appendages, even while the molecules and atoms and cells that compose those sense organs continually change with you none the wiser. Physically speaking, the substance of your body is made up of completely different atoms and molecules than it was composed of five years ago. "Each year, 98 percent of the 10^{28} atoms in the body are replaced; at the end of five years all are renewed, down to the very last one" (Dossey, 1991, p. 107).

> The skeleton that seems so solid was not there three months ago. …. The skin is new every month. You have a new stomach lining every four days, with the actual surface cells that contact food being renewed every five minutes. The cells in the liver… [make] a new liver every six weeks. Even within the brain, whose cells are not replaced once they die, the content of carbon, nitrogen, oxygen, and so on is totally different today from a year ago. (Chopra, 1990, pp. 48-49)

The flesh that we perceive as being so stable physically breaks apart on numerous occasions, its stuff literally falling off into the earth. "All in all we lose about a soup plate full of cells every day. . . . Fortunately… bone marrow and generative tissue endlessly pump new cells into the system. There are millions made every day" (Watson, 1979, p. 100). The cells *within* your body die constantly only to be replaced by other cells numerous times over the course of years. Physically and in the most basic of terms, the body dies many times, though we do not perceive it, with our consciousness bridging the gap of those minute "deaths" that **we** do not recognize as such. The stability of the body

that we perceive is actually dependent upon an instability -- the birth and death of its cells -- of which we are blissfully unaware.

The individual body. You experience yourself as basically enclosed inside your body, separated from other physical objects by your skin, unaware of the constant interchanges that occur between the structure or form called "your body" and the seemingly empty space outside it. These include the indispensable chemical interactions without which life as we know it would be impossible. Through the skin, which is itself alive and breathes, we receive nutrients from the air and sunlight without which we could not exist or survive. Emotions trigger endocrine glands to release adrenalin into the bloodstream that create pheromones that are released through the skin and liberated into the air to affect the atmosphere. Each breath you exhale flows out from what you are, passing into the world that seems to be not you. Each breath you inhale "has millions of molecules breathed recently by each and every one of the five billion people on earth ...and any living thing that breathes – cows, horses, snakes, birds, bees, and so forth" (Dossey, 1991, p. 108). Chemically, the physical organism is dependent the planetary environment and is intimately connected with it, in the same way that it is dependent upon green plants, for example, for its very physical survival.

Physically, portions of ourselves leave our body and intermix with elements of the environment constantly. The body assimilates and uses elements and properties of the environment that would otherwise be considered "alien" to it, and immunizes itself through such methods. We eat portions of the world in the form of animal, vegetable, and mineral and make them a part of ourselves, to be used by our body and then returned to the earth to be used again to form other portions of the natural environment. There is a constant intermixing, so that the molecular components of the body's cells may become a part of the cells of a plant or an animal, and vice versa. "Bodies are incessantly mixing with other bodies through the endless shuttle of atoms. …These molecules actually become the stuff of the body" (Dossey, 1991, p. 108). The chemicals that leave through our skin, the breath that leaves our lungs, and the atoms and molecules of our body that intermix with the environment become a part of the atmosphere of the room, and eventually the building, the town or city, the country, and the world. "This inner and yet physical transmigration [of cellular components]…represents a natural method of communication, uniting all species and all physical life" (Roberts, 1979a, p. 318).

In basic terms, then, the body that we perceive as being so isolated and separated from everything that is not-self also connects us with those very same elements, extending the self out into the environment. The space just outside our body is composed of the same elements as our skin, for instance, but in different proportions. There are gradations, and that is all. The skin is as much, if not more, a necessary connective as it is boundary between what is self and what is not self. Except for a difference of molecular organization and density, the body is composed of the same physical stuff (electrons, protons, and neutrons appropriately arranged) as a rock, a star, a frog, or a peach. The seemingly objective physical world "out there" is sensed and perceived by physical eyes that are part of that very world that they sense and perceive. The body and the self who has it have no real boundaries. All boundaries are merely apparent caused by our necessary and beneficial reliance upon physical senses that limit what can be perceived, focusing attention and awareness in a narrow fashion along certain lines of physical sensation, grouping perceptions and comprehensions into a severely restricted range of what might otherwise be perceived.

The mechanical body. It may seem that your body is nothing more than a complex machine with interchangeable parts, that runs itself pretty much on its own, and that its workings can be explained in mechanical terms. The machine metaphor has been a prevalent model for how the body operates ever since the mechanical clock became the ideal 17th century metaphor for the universe. Not only was the universe a clockwork machine; that idea was projected upon the physical organism as well. Biologists have used a variety of machine metaphors to explain the physiological functioning of the body: the heart is likened to a pump, the lungs to bellows, circulation to an hydraulic system, and limbs to pulley and levers. The construction of artificial hearts, lungs, and limbs has followed these metaphors and the principles of classical Newtonian mechanics in both design and function. Biological psychologists use words like "sodium-potassium pump" to describe the electron-charge exchange that occurs during neural transmission and liken human cognitive processes to a modern computer. One negative consequence of this particular body illusion can be seen in the field of medicine. The physician becomes the biological mechanic who knows your body better than you do. Patients come to look upon their own bodily processes as if they somehow stood apart from them, effectively separating themselves from their own bodies, losing any sense of identification with it or any sense of control over their own health or illness.

Chapter 2 – Biological Foundations of Transpersonal Psychology

The fact of the matter is that the body, *your* body, remains a living, breathing, growing *organism* that is responsive to your every thought and feeling. Bodies are alive, machines are not. The cells that compose your body eat and grow, divide and multiply, collaborate and communicate with each other, accommodate to changes in physical environments, exchange material with each other and excrete waste material. Ideally speaking, the physical body has a great natural healing ability to rid itself of any diseases, the capacity to keep itself in excellent health, and maintain its stability into advanced old age. What machine do you know can do that?

The mindless body. When you examine your experience of your own thoughts it may seem to you that ideas have little to do with the living flesh. The body, after all, seems physical and ideas do not. This is the traditional mind-body problem first formulated by the French mathematician and philosopher Rene Descartes (1596-1650) who denied any sentience to physical matter and any physical matter to sentience, insisting that matterless mind (res intensa) and mindless matter (res extensa) were strictly separate in substance and essence. For over 400 years, philosophy and psychology have labored under the Cartesian assumption that all matter, including the body, contains not the smallest smidgeon of sentience (i.e., the capacity for awareness and experience). With reality divided into a world of mindful concepts (mind-spirit) and a world of mindless flesh (body-matter), it is difficult to see how any valid interactions between mental or emotional states and physical ones can occur.

Psychology's half-way solution has been to turn mind into matter (or brain) without completing the equation and also turning matter (or brain) into mind. Mind and matter thus remain divided in psychology's eyes with the conscious mind connected to the brain while the body, its visceral organs, and autonomic nervous system seem independent of that connection, functioning for the most part completely separate from conscious awareness, acting without our conscious control and usually without our knowledge, possessing not a wit of consciousness of their own. Valid and actual interactions do occur between body and mind as the field of psychosomatic medicine amply documents (Dunbar, 1954). From the perspective of mainstream psychology, this interaction is, for all practical purposes, mindless. From the perspective of transpersonal psychology, the interaction is mindful.

III. The Biological Foundations of Transpersonal Psychology

The Psychophysiology of Transpersonal States

In order for mainstream psychology to recognize, acknowledge, and accept the transpersonal nature of the physical body, a thorough re-visioning of the mind-body problem that has plagued philosophy and psychological science since Descartes' initial formulation of it in the 17th century is required. No one would deny the existence of his or her own private experience or say that ideas are nonexistent and unimportant. No one would deny the existence or importance of his or her own physical body. We each have our own consciousness, and we each have our own body. Mind exists. Body exists. Mind and body interact. So what is the problem? The problem is the way that mind and body are understood.

The biological perspective. The biological perspective "attempts to relate overt behavior to electrical and chemical events taking place inside the body. Research from the biological perspective seeks to specify the neurobiological processes that underlie behavior and mental processes" (Smith, Nolen-Hoeksema, Fredrickson, & Loftus, 2003, p. 10). The biological perspective views all behavior and experience to be the result of chemical and electrical activities taking place within and between nerve cells in the brain, nervous system and endocrine system, and ultimately explainable in terms of the units of heredity - genes. As one popular introductory psychology textbook states: “Researchers who take the biological perspective generally assume that psychological and social phenomena can be ultimately understood in terms of biochemical processes: Even the most complex phenomena can be understood by analysis, or reduction, into ever smaller, more specific [biological] units” (Gerrig & Zimbardo, 2008, p. 13).

Key ideas that define biological foundations of psychology. The biological perspective is defined by several key ideas. The idea that *the brain (while itself being "mindless") contains the mind within it and produces thought* is inferred from the observation that brain traumas, tumors, injury and infections in the body can result in dramatic changes in cognitive processes and behavior. The idea that *brain and its mind are machine-like in their operations* is deduced from the observation that parallel distributed processing computer programs are able to produce striking real-life simulations that resemble human memory capacities. The idea that *mind is localized in a 3-dimensional space* within the brain is construed from inspection of brain imaging scans that reveal strong correlations between electrical and blood flow activity in the brain and specific conscious intentions. The idea that *spiritual-transpersonal experiences are localized in specific brain regions* is deduced from the observation that the application of complex magnetic fields to the temporal lobe induce mystical-like states of awareness in some individuals. These observations, correlations, and experimental manipulations are usually interpreted as scientific proof that brain *is* mind, and that a religious-spiritual-transpersonal experience is nothing more than an epiphenomenal by-product generated by brain processes, like heat from a candle flame or steam from boiling water (see for example, Crick, 1994; Damasio, 1994; LeDoux, 2003).

Every general psychology textbook that speaks of the “foundations” of human psychology does so from this perspective and defines them in terms of biological counterparts. Neurons are “the building blocks of the nervous system… Neurons hold the secret of how the brain works and, in turn, the nature of human consciousness” (Smith, Nolen-Hoeksema, Fredrickson, & Loftus, 2003, p. 32). The application of this point of view to transpersonal experiences such as mysticism is illustrated by quite clearly in the following statement by Newberg, D’Aquili, and Rause's (2001) :

> Brain makes mind. Science can demonstrate no way for the mind to occur except as a result of the neurological functioning of the brain. Without the brain's ability to process various types of input in highly sophisticated ways, the thoughts and feelings that constitute the mind would simply not exist. ….Neurologically speaking, then, the mind cannot exist without the brain, and the brain

> cannot exist without striving to create the mind. ... Mind needs brain, brain creates mind, and...the two are essentially the same entity seen from different points of view. (p. 33)

"Transcendent consciousness" has biological correlates. The biological perspective has assisted in expanding our understanding of the psychophysiological correlates of a variety of transpersonal experiences and behaviors that are not reducible to biological correlates, but not purely "transcending" them either. These transpersonal experiences and capacities include: lucid dream states (LaBerge & Rheingold, 1990), the voluntary control of bodily processes (Green & Green, 1977), spontaneous remission and miracle cures (O'Regan & Hirshberg, 1993), multiple identity states (Putnam, 1984), mind-body communication (Rossi, 1986), out-of-body experiences (Monroe, 1985), near-death experiences (Greyson & Flynn, 1984; Sabom, 1982, 1998), psi functioning (Dean, 1962, 1966; Tart, 1963; Ullman, Krippner, & Vaughn, 1973), meditation (Austin, 1999; Earle, 1981; Murphy & Donovan, 1997), entheogenic experiences (Lukoff, Zanger, & Lu, 1990), and trance channeling (Hughes & Melville, 1990).

Examples from the field of Neurotheology. So-called "transcendental" states of awareness facilitated by drugs, alterations in breathing, fasting, fever, excitement, exertion, fatigue, loss of sleep, and so forth involve altering basic physiological conditions of the body that correlate with the self-reported occurrence of altered states of awareness (Ludwig, 1972; Neher, 1990). The field of *neurotheology* applies the methods of basic neuroscience to the study of religious/spiritual/transpersonal experiences and behaviors (Matthew, 1996; Newberg, d'Aquili, & Rause, 2001; Persinger, 1987, 2001; Strassman, 1995). One example of neurotheology research is the twin-studies conducted by Dean Hamer, the chief of the National Cancer Institute's Section on Gene Structure and Regulation, who claims he has identified a gene for spirituality (VMAT2 or vesicular monoamine transporter #2) that is involved in the transmission of three neurotransmitters - dopamine, serotonin, and norepinephrine –which have been associated with mystical states and spiritually transforming experiences (Hamer, 2004). Another example of neurotheology research is the study of entheogens - psychoactive substances that engender spiritual experiences (H. Friedman, 2006; T. Roberts, 2001; Smith, 2000). Entheogenic research has identified the presence of 5-methoxy-dimethyltryptamine (DMT), the active ingredient in *ayahuasca*, a entheogenic plant used by shamans in the Amazon, and naturally synthesized by the pineal gland, to be correlated with the occurrence of out-of-body and encounter-type exceptional human experiences (Strassman, 1995). All exceptional human experiences and behaviors are now presumed to have some biological correlates that can be studied using scientific instruments (e.g., EEG machines, PET and fMRI imaging scans, GSR devices, ERP and EMG recordings, MEG technology).

Examples from the study of meditation. Meditation experience is another area in which the biological approach has expanded our understanding of the changes which occur in a wide range of biological systems that accompany this contemplative practice, including: the cardiovascular system (e.g., heart rate, redistribution of blood flow, blood pressure and hypertension), brain wave activity (e.g., alpha, theta, and beta brain wave activity, EEG hemispheric synchronization and dehabituation, specific cortical control), blood chemistry (e.g., adrenal and thyroid hormones, amino acids and phenylalanine, plasma prolactic and growth hormone, lactate, white blood cell count and red blood cell metabolism, cholesterol levels), metabolic and respiration systems, muscle tension, skin resistance, and other physiological effects (e.g., brain metabolism, salivary changes, effectiveness in the treatment of disease such as cancer, body temperature, alleviation of pain) (see Murphy & Donovan, 1997, for a review of contemporary research into the physical and psychological effects of meditation). The biological approach has revealed, for instance, that self-reported meditative states of awareness occur simultaneously with measured changes in brain wave patterns (high amplitude theta and delta waves, hemisphere synchronization) and changes in cerebral blood flow to specific lobes of the brain (Murphy & Donovan, 1997). In one study, SPECT scans of Tibetan Buddhists in meditation showed increased prefrontal lobe and decreased parietal lobe brain wave activity compared to baseline (Newberg, Pourdehnad, Alavi, & d'Aquili, 2003).

Questionable Assumptions Underlying the Psychophysiology of Transpersonal States

Spiritual experiences correlated with biological action believed to cause them. Because measured changes in brain waves patterns, cerebral blood flow, blood chemistry, electrical and chemical activity take place concurrently with a psychological experience, does this mean that the brain and nervous system are the source of the experience? Correlation does not mean causation, but many neuroscientists appear to think so when they take this key discovery ("All transpersonal experiences can be *related to* the activity of the brain and nervous system") to its extreme ("All transpersonal experiences are *caused by* and *result from* the activity of the brain and nervous system"). Psychological events are equated with their physiological counterparts, while avoiding the reverse inference of reducing physiological events to their psychological correlates. Religious-spiritual-transpersonal experiences are believed to have no substantial reality *on their own*, but are regarded as mere *by-products* of what is considered to be insentient, mindless neurobiological activity which alone is really real and which caused them to come into being (LeDoux, 2003; Damasio, 1994).

Mindless matter gives rise to matterless mind. If the body is a nonconscious, lifeless machine composed of essentially "dead" matter, then how does a basically insentient, comatose brain give rise to an energetic, vital mind? How can inert, passive physical matter gives rise to creative, active, living consciousness? "Nothing that we know about these neurons from biology and brain physiology explains why the joint activity of such entities should give rise to conscious experience" (Griffin, 1997, p. 119).

> Neurology cannot completely explain how such a thing can happen – how a nonmaterial mind can rise from mere biological functions; how the flesh and blood machinery of the brain can suddenly become "aware." Science and philosophy, in fact, have struggled with this question for centuries, but no definitive answers have been found, and none is clearly on the horizon. (Newberg, D'Aquili, & Rause, 2001, p. 32)

"Category mistakes" in cognitive neuroscience. *Psychology and physiology are logically distinct semantic domains in their own right.* There are a number of reasons why such an explanation has not yet been found . One reason is because of a confusion of terms used in most discussions of what has come to be called "the mind-body problem." To say that all psychological terms (empathy, compassion, love, self) refer to nothing other than some physiological event or process is to make what Gilbert Ryle (1949/1963) called a "category mistake" - mistaking two things as similar that are categorically different. This occurs quite frequently in mainstream psychology. An example of a category mistake is equating galvanic skin response (GSR) which is a physiological index of anxiety for the psychological experience of anxiety. Another example is describing psychological actions in physiological terms (e.g., "the biochemical basis of indecision") or describing physiological actions in psychological terms (e.g., "the brain sees and recognizes a cup"). Words like "anxiety," "indecision," and "cup" are not physiological concepts; they are psychological or perceptual ones. The brain can be publicly observed, it occupies space, and can be dissected and weighted and bottled. None of this is true of anxiety, indecision, the idea of "cup." Physiology and psychology deal with logically distinct and unrelated semantic domains (Bannister, 1958). We hear the two linguistically unrelated domains (physiological psychology) conflated so frequently in ordinary discourse that the oddness of their juxtaposition is not as apparent as it would otherwise be (e.g., chemical sociology, biological astronomy).

Mediated and unmediated experience fundamentally differ in important ways. We are dealing with at least two planes of reality, dimensions of action, aspects of being that ought not to be confused simply because it is expedient to do so. When a person burns her or his hand on a hot stove, the pain felt is nothing like that described in neuropsychology textbooks. No diagram of the brain will capture the encounter that occurs between a person and a flower when she or he sees, smells, and touches a rose. All the accumulated knowledge obtained by learned science about how the eye sees cannot convey the aesthetic experience of a beautiful sunset. All the brain- facts about how the ear functions do not and

cannot add up to the direct sense encounter of one person with a piece of beautiful music. Brain imaging devices (e.g., PET, fMRI, EEG, SPECT scans) can discover every single thing about what every single atom and molecule in your brain is doing but will tell nothing about the specific contents of a single thought. Just as diagramming a sentence into its constituent structure tells us little about the *spoken* language, so does dissecting, categorizing, and diagramming the neural pathways, synaptic junctions, and innumerable neurotransmitters in the body tell us little about the miraculous psychic mechanisms that allow us to walk, run, or speak. Detailed conscious knowledge of the physiology of the muscles that the individual may possess does not help an invalid get out of his wheelchair or make a sprinter run faster. This is simply not the kind of knowledge that can be translated directly into inner experience or outer behavior.

Physiology and psychology deal with different domains of experience. Just as the data known about how the brain works cannot be translated directly into a diagram of your inner experience, the experience of your own mind cannot be translated directly into the data we know about the factual brain. We do not experience the stimulation of receptors in our retina or the transmissions of neural impulses along our optic nerve or the firing of neurons in our striate cortex -- we experience a perceptual image. Although thoughts and emotions may accompany brain processes, in other words, this does not mean that they *are* brain processes. To argue that mind (one quality) emerged out of body (another quality) confuses two different category of events or two kinds of actions under a single category. "Mind" and "body" are two different conceptual terms referring to two different types of experiential data (Ryle, 1949/1963).

Mind and brain do not look or feel the same. One could correctly say that the brain is what consciousness looks like from the outside (its surface structure), and the mind is what consciousness looks like from the inside (its deep structure). The physical brain is the nonphysical mind in electro-chemical clothing, but they are not the same thing. Thoughts obviously do not take up space as neurons do that you can pile one upon the other, measure and weigh. "What bulk can we ascribe to thoughts? Are they small, large, long, thin, heavy, fluid, straight, circular, or what? If we wished to form a living picture of a non-spatial, fifth-dimensional being, we could not do better than to take thought for our model" (Jung, 1934/1960, pp. 347-348). A dream, an idea, a feeling, or a value -- any psychological experience, for that matter -- even though it cannot be scientifically observed in any laboratory and does not take up three-dimensional physical space, definitely exists. And even though it may be born in time, after its conception, it is free from time and is as real as -- and in certain respects *more* real than -- the physical, material chair upon which one sits because of the effect that it has upon our individual behavior or in our collective human cultural world.

Positivist, materialist, mechanistic, deterministic, reductionistic theory of reality. Another reason why no answers have been found to the so-called mind-body problem is because of fixed ideas and beliefs *through which* biological psychologists organize and interpret their sensory perceptions of the brain and its action. These ideas and beliefs amount to theory of reality (or ontology) which assumes that Reality is limited to sensory phenomena or facts that are publicly observable using the physical senses (positivism), is completely explainable in physical terms by the existence of matter alone (materialism), is sufficiently understood in terms of the mechanical laws of Newtonian physics and chemistry (mechanism), endures in linear time through cause-and-effect principles (determinism), and is fully explicated in terms of its simplest parts (reductionism) (Slife & Williams, 1995). Operating for the most part outside of awareness, these psychologically invisible beliefs program experience to such an extent that they take on the appearance of fact in modern psychology (Tart, 1975/1992. Transpersonal psychology does not deny that interior, subjective, nonmaterial psychic realities such as thoughts, feelings, and dreams have exterior, objective, material, biological correlates. What is denied is the claim that there are no interior realities, only exterior ones; that all interior psychic states are nothing but neurobiological processes; that the psyche has no existence independent of the brain, and that the brain makes the psyche.

The New Phrenology: The Quest to Localize Spiritual Experiences in the Brain

Philosophy cannot be divorced from action. The positivist, materialist, mechanistic, deterministic, reductionistic theory of reality (or worldview) that currently shapes biological psychology's perception and understanding of life, mind, and consciousness is also reflected in its research methodology (or epistemology). Thus, parts of the brain may be removed (ablated), destroyed (lesioned), electrically or chemically stimulated, or photographed (PET, fMRI) in isolation to infer the psychological significance of specific biological structures and processes for the whole organism (Cacioppo & Tassinary, 1990; Sarter, Berntson, & Cacioppo, 1996). Complex psychological phenomena are reduced to selected variables that are isolated and then manipulated or controlled in artificial laboratory demonstrations to identify those aspects of the phenomenon that can be predicted, repeated, and controlled. Such an approach is misleading when it leads us to believe that bodily processes operate in isolation from one another when in fact they do not. For example, "the typical view, held as recently as [1984] was that the immune system was a closed system" (Maier, Watkins, & Fleshner, 1994, p. 1004). This faulty understanding of the immune system was a direct consequence of the bits-and-pieces research methodology employed by science.

The observation that spiritual-transpersonal experiences have biological correlates has given rise to the hypothesis that localized regions of the brain are associated with particular kinds of experiences. Thus our experiences of insight, independence, relationships, initiative, creativity, human and morality are said to "reside" in the frontal and temporal lobes of the brain. Or feelings of empathy and compassion, love and social bonding are "made," "regulated," and "facilitated" by neurons in the anterior insular cortex and neural circuitry in the limbic system. According to MacDonald & Friedman (2008),

> One of the more widely known investigators associated in this area within psychology is Persinger who has not only built his temporal lobe continuum model. . . on the work done on with temporal lobe epileptics. . . but has even developed a magnet helmet (known as the "God helmet") which has been used to purportedly induce non-ordinary states (such as a felt sense of presence and mystical experiences) by changing the magnetic fields around the temporal lobes (Persinger & Healey, 2002). As it stands, the temporal lobes and the associated limbic system structures are viewed as one of the most common brain regions implicated in spiritual and paranormal experiences. (pp. 12-13)

Despite the enthusiasm with which such research is carried out and widely accepted and promoted in the psychological sciences, there are a chain of frail assumptions, logical and conceptual difficulties, technical and instrumentation artifacts, and ill-posed questions that make the prospect of the localization of spiritual experience -- or any cognitive process, for that matter -- problematic.

Conceptual and methodological difficulties in mind-brain localization research. Much of modern localization research is based on a chain of questionable assumptions: (a) nebulous and notoriously vague mental states such as non-ordinary states of consciousness can be adequately defined, (b) experiences occurring within non-ordinary states of consciousness are directly accessible for introspective inspection and are of sufficient duration to be available for concurrent, intermittent, or retrospective verbal reports, (c) spiritual-transpersonal experiences are isolated in such a way that they are individually analyzable into distinct and separable modules, traits, qualities, attributes, or components, (d) cognitive processes generally, and spiritual experiences in particular, are located in the 3-dimensional space inhabited by the brain, and (e) cognitive processes and spiritual experiences are circumscribed in localized brain regions that instantiate, cause, or produce them.

> Although the 'bumps on the skull' idea is no longer with us, the idea that mental components exist and that they can be assigned to specific locations of the brain very much is. Indeed, the central problem facing cognitive neuroscience is how to deal with the unproven assumption that mental processes are as accessible, separable, and localizable as are the material aspects of the brain. (Uttal, 2001, pp. 108-109)

Nebulous spiritual experiences are hard to define and may not be either directly available or of sufficient duration for introspective inspection and self-report. The fact of the matter is that transpersonal-spiritual experiences studied in the laboratory are extremely difficult to describe, much less define. There are considerable conceptual difficulties involved in defining exactly what is meant by a spiritual-transpersonal experience in the laboratory. An even when they are defined by inadequate, nebulous, and reified hypothetical psychological constructs ("felt sense of presence," "mystical experience," "transcendent states of consciousness"), they are presented as being both specific and "real" enough to be localized. Localization of a spiritual experience in the brain requires a very clear definition of the spiritual experience for which a locus can be sought. Given the inadequacy of efforts to precisely define mind and consciousness generally (is it a thing, property, or process?), the unavoidable hypothetical and speculative nature of spiritual-transpersonal experiences created in the laboratory makes the prospect of localizing mystical experiences in the brain extremely difficult, no matter now precisely the coordinates of the brain regions themselves may be defined or mapped. The self-reported spiritual experiences more often are a function of the experimental methods used (i.e., states of consciousness defined operationally, mode of self-report) and the theories employed to interpret experiences that are generally ineffable or verbally inaccessible (Cunningham, 1986; Ericsson & Simon, 1984; Pope & Singer, 1978).

The brain is a system of overlapping and highly interdependent functional regions that interact in non-linear ways. There is also the assumption that what would otherwise be considered a composite, integrated, and unanalyzable spiritual-transpersonal experience of a unified mind involves only a single brain area. Brain areas, like mental activities, overlap to a considerable degree, however. The brain and the spiritual experiences it purportedly generates does not constitute a linear system or process that can be decomposed into separate components or factors like some one-way analysis of variance that can be added together but do not interact. The brain's structural and organizational complexity (e.g., high interconnectivity, feedback and feedforward processes, redundant coding, massive parallelism, interplay of excitatory and inhibitory nerve functions) indicates that the brain is a system of overlapping, highly interdependent functional regions that interact in non-linear ways. As a result, it will always be uncertain what the observed activity a particular brain region really means (Fodor, 1983).

Brain regions are not sharply demarcated from one another. Rather than consisting of isolated, modular, linearly functioning, independent, precisely demarcated areas, brain regions instead gradually fade one into another with a "gradient of probability" function that is moderated by the experimental task and by psychological factors such as attention. Spiritual experiences, like cognitive functions generally, activate multimodal neurons that are scattered in large and broadly distributed regions within the brain. The brain is a complexly interconnected, interactive, and integrated system and is not a simple conglomeration of functionally isolated processing sites. No brain action then can be considered by itself. There is no solitary action. Such a possibility is basically meaningless. All brain action occurs in relationships to all other brain action. There is no real or actual boundary between any of the brain areas of the whole brain. The boundaries are functional units, and functions may blend one into the other.

Brain actions may *appear* to be separate, but they are all part of other actions, this being the basis for the brain's organization. Groupings of brain actions of any kind merge into other groupings. All apparent modules, units, locales are merely formed by functions, and these functions are plastic, changeful. The phenomenon of "recovery of function" points to the fact that dynamic changes in localization do occur, and demonstrates the inherent, flexibility and *fluency* of brain functions to reorganize themselves such

that new neural networks and brain locales appear to be created after an injury or after new experiences (Kolb, 1989; Zheng & Knudsen, 1999). Brain areas long considered to have a single function are now known to be activated in many different ways (e.g., cerebrum considered to be involved solely in motor coordination is now known have a substantial cognitive function).

Technological and experimental artifacts confound interpretation of results. As brain imaging techniques improve, it is likely also that spiritual-transpersonal experiences previously assigned to one part of the brain (e.g., temporal region) may be assigned to another brain region in the future. Sharp boundaries between brain activity versus no brain activity detected by various imaging technologies (e.g., PET, fMRI) may be artifactual -- being a function of poor choices made by the experimenter about arbitrary criterion threshold cut-off limits below or above which regional levels of activation are deemed "significant" and thus present (i.e., decisions made about signals hidden in noise). It is also known that brain systems are not organized the same way in every individual. This cortical variability is a source of individual differences between subjects that is artificially reduced through the extensive manipulation of data that results from "data cleaning" in all imaging technologies.

> The result of all this correcting, noise reducing, standardizing, and averaging is that the final image obtained tends to obscure the sometimes wide differences between different subjects. More seriously, it can produce the illusion of a localized process emphasizing fortuitous regions of overlap to the exclusion of the more widely distributed active regions in the individual subject. (Uttal, 2001, p. 197)

In addition to the artifacts introduced by the many averaging and normalizing procedures and other efforts to reduce image noise by various filtering algorithms, the temporal and spatial properties of the images produced can be distorted by emotional effects, muscular responses (e.g., teeth clenching), and tasks that subjects are asked to perform -- all of which can produce false localization by distorting or even misplacing portions of the image (Shallice, 1988).

The conceptual and methodological difficulties of localizing transpersonal-spiritual-paranormal experiences in a particular part of the brain (or even in several parts of the brain) are significant and suggest that the fundamental assumptions that underlie the question of localization require further critical analysis and discussion (Fodor, 1983; Shallice, 1988; Uttal, 2001). And then there is the further question:

> Suppose that it turns out that our brains are actually organized such that each psychological process was localized in a particular part of the brain. What exactly would that tell us about how our brain-mind actually accomplished their function? . . .Imaging systems such as a PET Scan can tell us only where something is happening, not what is happening there. . . . *How* we measure in large measure determines *what* we measure or rather, what we *think* we are measuring. . . . There is no independent assurance that the cognitive effects desired when the experimenter sets up the experiment are actually extant during the course of the measurements (Uttal, 2001, pp. 26, 70, 90, 171-172).

Transmission-Theory of Cerebral Action

If the source of transpersonal experience and behavior cannot be localized in three-dimensional space within the brain or body, then what is its source? Or to put the question differently: Where do thoughts come from and where do they go when you are done with them, if not the brain?

Thought is a function of brain transmission. An alternative explanation for the observed correlations between mental action and brain activity is the "filter" or "transmission" theory of cognitive action (Broad, 1953; James, 1898/1956; Kelly et al., 2007, pp. 603-639; Myers, 1903/1961; Schiller, 1891/1894)

William James (1898/1956) proposed the brain-transmits-mind theory as an alternative to the brain-produces-mind explanation for observed mind-brain correlations in his essay, "Human Immortality: Two Supposed Objections to the Doctrine." James considered the transmission-theory as an important philosophical rebuttal to the "production-theory" of brain function popular among physiologists of his time and still popular among biopsychologists today. William James noted that there are *other kinds of function* that the brain may have besides a productive function – namely, a transmissive function. While retaining the doctrine that *thought is a function of the brain,* the Jamesian transmission theory of cerebral action, asserts that the function of the brain is to *transmit* thought, not to produce or create it. The brain tunes into thought, but does not contain it. "If a man loses consciousness as soon as his brain is injured, it is clearly as good an explanation to say the injury to the brain destroyed the mechanism by which the manifestation of the consciousness was rendered possible, as to say that it destroyed the seat of consciousness" (James, 1898/1956, p. 68).

The brain does not produce thought; the brain transmits thought. From the point of view of the transmission theory of cognitive action, thoughts do not have to be "produced" by the brain – they exist ready made by the mind. The brain would be the physical counterpart of the mind, the means by which the functions of awareness, attention, intention, purpose, planfulness, memory, creativity, and intellect are connected with the physical body. Through the filtering and focusing effects of the physical brain, events that are basically of nonphysical origin and essentially independent of the physical brain become physically real (Bergson, 1911). Taylor (1996) summarizes James's argument:

> In modern biology. . . it is presumed that consciousness is a product of physiological brain functioning, and that when the brain dies, consciousness ends with it. The brain, therefore, produces the mind. It is not incompatible with the tenets of biology, however, to conceive that the brain, rather than being a mere producer, might actually be a *transmitter* of consciousness….. If this second view were true, it meant that when the brain died, consciousness would also cease, *but only in the sense of no longer being transmitted through that particular unique organ.* The important point about the transmissive view is that something existed prior to and something persists after the demise of the unique transmitter, upon which the life and experiences of the transmitter makes its mark….The benefit of this view. . . is that it allows the biological relation of the brain and the mind to remain intact while opening up the possibility that religious and spiritual explanations of the ultimate might not be entirely incorrect…..[and shows] that the transmission view was not incompatible with the brain-function theory of our present mundane consciousness. (pp. 83-84)

The mind itself is not physical, and cannot be contained within matter. The brain, according to the transmissive view of cerebral action, does not contain learning and memory, which is one reason why the search for the elusive memory engram is so misguided and has proven to be so unfruitful. We will not get closer to solving the mystery of memory and learning by dissecting the neurons of the California sea slug, *Alplsia,* for example, because when we dissect the sea slug, we are actually destroying that which we seek. We are left only with memory and learning's outer disguise, false front, and "camouflage." According to the transmission-theory of cognitive action, the brain and physical body is a "receiver" for electromagnetically-coded thoughts and ideas, memories and emotions, whose origins lie in a multidimensional reality that is trans-spatial and trans-temporal, and outside of three-dimensional space and time -- similar to Rupert Sheldrake's (1981) morphogenetic fields in certain respects and radically different in other aspects. Mind expresses itself directly through the brain, and is structured through the brain's actions and reactions. The brain is used to express the mind, but the brain is not the mind that it attempts to convey. The brain is the physical counterpart of the mind, the means by which the functions of the mind are expressed in four-dimensional physical reality.

One provocative hypothesis about how this transmission process occurs is proposed by transpersonal writer and mystic Jane Roberts (1998a) in her personality theory Aspect Psychology. According to Aspect Psychology, all emotionally or subjectively felt experiences exist originally as purely electrical actions, productions of an inner, transpersonal self, within what may be called electrical reality. Initially an electric action, each thought or emotion is received, broken down, translated and interpreted into a psychoelectric pattern set up by the mind which, taking up no physical space and is not physically represented in the material body, has its existence purely within electrical reality and independent of physical reality -- though its *effects* appear within the physical field where they are directly felt by the brain. The brain, which is that small portion of the mind that appears within matter and is a part of the mind in its electric structure, exists physically and is the physical mechanism that receives and transduces, transforms and translates the mind's thoughts and emotions -- which are not bound by or held within the physical body -- into a psychological symbol code in order to be used by the physically-oriented self, and then initiates *reactions*.

Analogy A: Thought-language analogy. The transmission theory of cerebral action can be illustrated with the help of several analogies. Consider the relationship between thought and language, for example. In this analogy, the physical brain is like the spoken or written words of a natural language (the surface structure), and the nonphysical thought is like the meaning of the experience (the deep structure) that is being expressed or conveyed through those words. Just as a thought or feeling is structured by the words used to convey it, so also is mind structured and expressed by the brain. The words used to tell of an experience obviously are not the experience that they attempt to describe. The words are not your thoughts, and so there must always be a gap between your thought (mind) and your expression of it (brain). At the same time so much of our thought is verbally-structured that it is difficult to separate the two. Words are used to convey or transmit or express information. Nevertheless, the information (mind) and the words (brain) used to convey it are two different things. This same relationship between mind-brain and word-thought applies when you are reading a book, magazine, or newspaper. The physical words upon the page have the physical reality only of black marks on white paper. The letters that compose the words are symbols that have agreed upon meanings. The nonphysical information that is being transmitted is not an attribute of the letters or the words themselves. The information is not contained in the written letters any more than the thought or feeling is contained in the spoken phonemes. The printed (or spoken) word does not contain information – it *transmits* information. The page is simply a carrier of information; the information it conveys is invisible. Where is the information that is being transmitted, if it is not upon the page? The words transmit information which resides within the self.

Analogy B: Video game. Consider a second analogy -- a video game. Suppose your private memories correspond to the visual and auditory stimuli of a video game that are displayed on the computer screen of the mind, and the computer represents your brain. The actions of the computer appear to have a cause-and-effect relationship with the images that appear on the screen. If a particular key is pressed on the keyboard a specific image or movement is displayed on the screen, for example. The proper functioning of the video game is entirely dependent on the proper functioning of the computer. If the computer lacks a sound card, then no sounds will be heard accompanying the images; if the sound card is damaged, then specific distortions or malfunctions in sound production will be generated. If we want to repair the problem, we can bring the computer to a technician who can repair or replace the damaged sound card to make sound properly function again. No one would conclude based on these observations that the computer monitor or the computer itself stores in its component parts the visual and auditory stimuli that are displayed on the screen. The visual display is actually built up from electrical pulses that bear no translatable resemblance to the images on the screen. They are actually two orders of events. The computer “transduces” or converts one form of information (1’s and 0’s) into another form of information (pixilated dots on an LCD array). In the same way, the brain acts a transducer that converts psychic energy into physical energy, but does not “contain” it in usual terms. A similar process occurs during the action of sensation and perception. Our physical senses transduce physical electromagnetic wavelengths,

waves of oscillating air pressure, and chemical molecules into electro-chemical information the physical organism can handle and the brain organizes and interprets that information with the help of the mind into psychological experiences of light, sound, taste and smell. Electromagnetic waves, sound waves, and chemical molecules do not "contain" the psychological experiences we experience them to have but are instead carriers, agents, channels, mediums through which and by which those experiences are shaped and appear in awareness. With a different set of specialized receptors or senses, perception of those very "same" electromagnetic waves would be entirely different or psychologically invisible altogether.

Analogy C: Television set / TV program/ TV station. The analogy can be extended by considering the relationship between a television set (the brain), a television program (thoughts, images, and feelings), and the television station (the human psyche) from which it is broadcast. Stanislav Grof (1985) and Rupert Sheldrake (1981, 1990) discuss the first two components of this analogy in detail. Television sets are wired and contain transformers and transistors and its overall reception is dependent upon that wiring and the inner workings of the TV set. Good picture and sound quality of a particular television program, say *Star Trek* by Gene Roddenberry, that appears on the television screen and that is broadcast on a specific day and at a particular time depends, first of all, on the proper working of the picture tube, the receiver, the sound box, transistors, capacitors, and all other hardware components. In the language of philosophy, the TV set is the "material" cause of the *Star Trek* images you see on the television tube. If these physical components are damaged or malfunction, then the picture and sound quality of the TV program suffers. No one would claim the television program is created by or stored within the components of the TV set, yet this is the conclusion biological psychology would have us make regarding how memories are stored at the site of synaptic junctures or brain structures. The images you see on the TV screen are also dependent on the proper functioning of the electric current and voltage and incoming electromagnetic signals coming into the set – what philosophy calls the "efficient" cause of the *Star Trek* program that appears on the TV set. Again, no one would claim the TV program is contained or stored within the current or signals received by the TV set, yet this is the conclusion that explanations of memory in terms of brain electrochemical neural activity would have us believe. What is the origin of the *Star Trek* program , if the material components of the TV set or in the efficient electromagnetic signals it receives? In the language of philosophy, the origin is to be found in the "formal" and "final" causes of those TV sounds and images -- the program concept in the mind of Gene Roddenberry and in the purpose and intent of the TV show to expand the imagination of its viewers and motivate them to face and overcome their problems and create a better world.

Transpersonal writer and mystic Jane Roberts (1979b) develops the third component of this analogy with observation that the workings of the TV set (brain) exist apart from the TV programs (mind with its memories), and both exist apart from the "stations of consciousness" (psyche) that originally transmit the TV programs. All of the stations exist at once within the psyche, but we recognize only one signal on one station at a time as the mind tunes in to a certain frequency, experiencing the television station's overall programming from its own unique TV-viewpoint. While all the stations are playing at the same time, the conscious mind only experiences or sees one at a time. Different portions of the mind tune into different stations, concentrate upon them, and tune out others for immediate practical purposes, otherwise it would be highly confusing to the physically-oriented portions of the self. In normal waking consciousness, we are tuned to our "home station." The television picture or signal can fade in and out producing "ghost" images or voices. The overall quality of the reception has much to do with the nature of the mind itself and its brain's wiring. When we begin to travel away from that home station - by altering the frequency to pick up different programs through alterations in body chemistry or modifications of attention - we become more aware of the other frequencies that are buried, embedded, implied, or that form the background for the program we perceive on our home station.

When tuned into our home station, data of all kinds come through to us. This data is sifted and filtered through the brain's network of synaptic connections that transform and transduce it into time-segmented experiences, which then flows "out" into our experienced perception of reality. Pools of data are held in abeyance in separate neurological pockets beneath the objective threshold of consciousness where information collects for processing before flowing into the normal station. Experience with such unprocessed "sidepools" of experience brings into awareness greater knowledge about the self. Our neural network allows us to experience this information (often in dreams) in a vivid, alive, ever-present, and ever-fresh way as it "arises" above the subjective threshold of consciousness and enters awareness. Not all brain activity is recordable, however, and brain imaging technology picks up only a small percent of it. At certain levels of consciousness, direct neurological activity may be by-passed entirely.

Is a brain really necessary? -- Observations of hydrocephalics and brain hemispherectomy. Is there any physical evidence that cognitive processing can occur in the absence of requisite brain matter or in the absence of measurable brain functioning? There is.

> For example, superior general intelligence and linguistic functioning have been observed in a man whose entire left hemisphere has been removed at age 5 1/2 for control of seizures (A. Smith & Sugar, 1975). Fully functioning adults are also occasionally discovered who altogether lack major neural structures such as the corpus callosum or cerebellum, structures that are usually thought to be required for such functioning. In some well-studied cases of hydrocephalus, normal or even exceptional mental functioning has been found in persons who have only 3-5% of the normal volume of brain tissue (R. Lewin, 1980). And to take a still more extreme case, high-level forms of learning and memory are certainly present in the octopus, an invertebrate whose nervous organization is radically different from ours. It even lacks a hippocampus, the one structure that everyone agrees plays an essential role in mammalian memory systems. (Kelly, Kelly, Crabtree, Gauld, Grosso & Greyson, 2007, p. 4)

British neurologist John Lobor has conducted brain scans of over 600 children with hydrocephalus – a condition in which an abnormal build-up of cerebrospinal fluid occurs in the brain (Lewin, 1980). As a result of this condition, children no longer possess an entire cerebral cortex (i.e., the portion of the brain physiologists believe to be the seat of consciousness). The skull may be lined with only a thin layer of cells a millimeter or so thick with the rest of the cranium being filled with cerebrospinal fluid. In one study, four groups of patients with varying degrees of severity of the disorder were studied: those with minimally enlarged ventricles; those in which cerebrospinal fluid fills between 50 to 70 percent of the cranium; those whose ventricles fill 70 and 90 percent of the intracranial space; and the most severe group in which 95% of the cranium is filled with cerebrospinal fluid. Lobor found that "many of the individuals in this last group, which forms just less than 10 percent of the total sample, are severely disabled, but *half of them have IQ's greater than 100* [my emphasis]" (Lewin, 1980, p. 1232). Despite the presence of "virtually no brain," the mental development of some of the children appeared normal.

In other reported cases where surgeons have removed the entire left hemisphere of persons suffering from epilepsy, a procedure called "brain hemispherectomy," no dramatic changes resulting in personality, language, or memory have been observed in some patients (Shulins, 1987). This remarkable phenomenon is usually interpreted as evidence of the brain's plasticity and the ability to shift functions from one side of the brain to the other, especially in children below the age of 6. Is this what happened in Lorbor's remarkable patients with hydrocephalus? Did the lower brain structures (e.g., limbic system or brain stem) take over the functions of the deteriorated higher cortical areas in those most severe hydrocephalic patients with IQs over 100 or is something else involved? The transmission theory of cerebral action would propose that something else is happening here.

Is a brain really necessary? -- Observation of a case of hypothermic cardiac arrest. The hypothesis of brain plasticity does not take us very far in explaining the following case reported by physician Michael Sabom (1998). Pam Reynolds was a 35-year old woman in Atlanta, Georgia who had an aneurysm in the wall of a large artery at the base of her brain that had swollen to such a large size that its safe removal by standard neurosurgical techniques was impossible. The only way the aneurysm might be successfully removed without rupturing was by a surgical procedure known as *hypothermic cardiac arrest* that "would require that her body temperature be lowered to 60 degrees, her heartbeat and breathing stopped, her brain waves flattened, and the blood drained out of her head" (Sabom, 1998, p. 37). According to Pam's attending surgeon, Dr. Robert Spetzler: "If you would examine that patient from a clinical perspective during that hour, that patient by all definition would be dead. At this point there was no brain activity, no blood going to the brain. Nothing. Nothing. Nothing" (Sabom, 1998, p. 5).

What is remarkable about Pam's experience was not that she survived such a daring surgical procedure, but that during the entire time, although she was totally unconscious and "her electroencephalogram was silent, her brain-stem activity was absent, and no blood flowed through her brain" (Sabom, 1998, p. 49), she reported having a profound NDE (near death experience) and OOBE (out-of-body experience) observing actual events in the operating room that were later confirmed to be an accurate representation of the facts. The production-theory of cerebral action that consciousness is "secreted" by the brain, and that the brain is necessary in order for conscious experience to exist at all, cannot explain, in their own terms, a case such as this.

> A brain in this state cannot create any kind of experience. Yet the patient reported a profound NDE (near death experience). Those materialists who believe that consciousness is secreted by the brain, or that the brain is necessary for conscious experience to exist, cannot possibly explain, in their own terms, cases such as this. An impartial observer would have to conclude that not all experience is produced by the brain, and that therefore the falsity of materialism has been empirically demonstrated. (Grossman, 2002, p. 31)

Re-Visioning the Mind-Body Problem

Two main theories (with numerous derivative theories) have evolved to help explain and understand the relationship between the material brain and nonmaterial mind. These two theories are "monism" and "dualism."

Monism and dualism defined. Monism is the metaphysical theory that our being is based on one fundamental element – matter. Dualism is the metaphysical theory that our being is based on two fundamentally different elements: matter and mind. Monism asserts that mind (or consciousness) *is* matter (or brain). The two are identical. There is only one reality – the physical one. Dualism asserts that mind (or consciousness) is *not* matter (or brain). The two are ontologically different entities (i.e., belonging to different orders of reality) basically independent of one another. Within the two main metaphysics of monism and dualism, there is a bewildering array of variations (Hergenhahn, 2005).

Monism vs. dualism compared. Monism says that mind is all matter; dualism says that mind has no matter, and *both say that body has no mind*. Monism fails to acknowledge the nonphysical nature of thought; dualism fails to acknowledge the physical reality of thought. Whereas dualism denies matter to mind, monism denies mind to matter – only mind experiences, not matter. The problem with monism is not that it recognizes the unity of mind and body, but that it fails to recognize their differences. The problem with dualism is not that it recognizes the differences between mind and body, but that it fails to recognize their unity. The virtue of monism is its recognition of the physical reality of thought. The virtue of dualism is its recognition of the basically independent nature of mind (or consciousness). The

failure common to both monism and dualism is its inability to acknowledge that the body possesses its own consciousness that is as alive and vital, though different in focus, as our normal waking one.

The mind-body problem is based on faulty premises. The fundamental reason why no answers have been found to the modern mind-body problem (i.e., how is it possible for mindless matter to interact with or give rise to matterless mind) is that the problem itself is based on faulty premises (i.e., that matter is mindless). It is a metaphysical, scientific, and creative error to separate matter from consciousness. The problem of how to understand interactions of mind and body raises a problem in psychology only as long as the ideas of purely insentient matter and a purely nonphysical mind are maintained (Wright, 1977). The failure to understand the role of consciousness in matter and the physical reality of thought is "an artificial problem, created solely by the human decision to define them as totally unlike things" (Griffin, 1997,p. 107). If neurons possessed some elementary form of awareness, then it would be "easy enough to see how neurons could generate consciousness" (McGinn, 1991, p. 28). Candace Pert, research professor at the department of physiology and biophysics at Georgetown University Medical Center said: "We need to start thinking about how consciousness can be projected into various parts of the body" (Pert, 1986, p. 16). Consciousness is not limited within the skull but circulates throughout the entire physical organism. One thought could not leap from an infinite number of nerve endings, if matter itself was not initially alive with consciousness. From this perspective,

> Each most microscopic portion of the body is conscious, strives toward its own goals of development, and is in communication with all other parts of the body…The molecules and even the smaller aspects of the body act and react, communicate, cooperate with each other, and share each other's knowledge, so that one particle of the body knows what is happening in all other parts. Thus, the amazing organization usually works in a smooth, natural fashion. (Roberts, 1997a, pp. 15-16)

Panpsychism. A solution of the so-called mind-body problem is known by many names: "radical naturalism," "panentheism," "panexperientialism," "panpsychism." (Clarke, 2003; de Quincey, 2002; Griffin, 1988, 1997; Skrbina, 2005). Panpsychism has a long and venerable tradition in the history of philosophy and psychology that recognizes two-fold aspects of consciousness: (a) an *active* aspect as the agent that initiates and directs the transformation of energy into matter and of matter into energy; and (b) a *receptive* aspect as a quality intrinsic to matter. Panpsychism is a transpersonally-oriented alternative to the metaphysical foundations of the biology of mind (consciousness) and body (brain) that is presented in general psychology textbooks. Those biological foundations are grounded in the classical Newtonian-based assumptions of mechanism (matter is composed of inert elements that are themselves lifeless and devoid of experience or consciousness), materialism (whatever exists is material or physical; if it is not material or physical, then it does not exist), and reductionism (complex things are really no more than its elementary parts in isolation) that has characterized mainstream psychology's philosophy of science for over 125 years, and that is reflected in its research methodology (Slife & Williams, 1995). The new metaphysical foundations of the biology of mind and body, according to panpsychism, asserts that the mind is as physical as the body and the body (or brain) is as mental or nonphysical as the mind. Panpsychism overcomes the bifurcation of reality into a world of spirit and a world of flesh (dualism) and the limitation of reality to a world of matter alone (monism) by asserting that sentience (awareness of self and not-self) goes "all the way down" to the most basic elements of matter.

Panpsychism's primary contribution to mainstream psychology in general, and to biological psychology in particular, lies in the concept that consciousness itself creates the physical matter of the body, that consciousness is not only projected into the various parts of the body but forms them. The body itself is alive with a consciousness of its own. The social characteristics of the cells of which the body is composed indicates clearly that the desire for communication, contact, motion, and the psychological

capabilities of awareness, recognition, and memory do not belong to humans, or even to animals, alone (Watson, 1979). On this view, "your sense perception, physically speaking, is a result of behavior on the part of organs that. . . are themselves composed of atoms and molecules with their own consciousnesses. They have, then, their own states of sensation and cognition. They work for you, allowing you to perceive physical reality (Roberts, 1981a, p. 38).

All energy contains consciousness. We are not separated from the rest of existence by virtue of possessing an inner consciousness, in other words. Such consciousness is within *all* forms of living and so-called "non-living" entities. This means that

> nothing exists – neither rock, mineral, plant, animal, or air – that is not filled with consciousness of its own kind…You are yourselves physically composed of conscious cells that carry within themselves the realization of their own identity, that cooperate *willingly* to form the corporeal structure that is your physical body. I am saying, of course, that there is no such thing as dead matter. There is no object that was not formed by consciousness, and each consciousness, regardless of its degree, rejoices in sensation and creativity. You cannot understand what you are unless you understand such matters (Roberts, 1972, p. 12)

Various gestalts of consciousness (electrons and protons into molecule-gestalts, molecules into cell-gestalts, cells into organ-gestalts, organs in body-gestalts, and so forth) result in different kinds of "interior" nature, different qualities of conscious experience, and different ways of perceiving reality. The combined and cooperating generalized consciousness of all the body's individual cells, atoms and molecules, while retaining their own identity, along with the consciousness of the inner, transpersonal self, would compose a gestalt consciousness that is the ego, for example (Roberts, 1997c). The individual cells and molecules and atoms that form into the gestalt of this more complicated structure (the outer ego) would benefit and gain from this relationship by being able to participate in experiences and value fulfillment that simply would not be possible for them in their own simpler isolated forms. In this way, all species and all living things cooperate in maintaining and constantly renewing the physical construction of the world and universe that we know.

This is not to say that the consciousness that is present in the body's cells or its atoms and molecules is the same as our ego's. It is not. The nerve cells in the brain do not know what a Star Trek program is, for example. Yet our ability to watch that program, to learn and remember its message, is dependent upon the existence of those nerve cells. For them, we explore realities "where no one has gone before" and that they do not know. They join their reality with ours. Theirs is a reality that is as vivid, real and legitimate as our own, but it is not ours, and yet it is a part of ours, and they permit us to perceive realities that they do not know that are ours alone. If entities such as the cells that compose our bodies do not reflect upon the nature of their own identities as human do, it is because they intuitively comprehend that nature in a way that human self-consciousness does not, and hence have no need to. There are as many luxuriant and diverse focuses of consciousness as there are physical objects and forms of life. There are varieties of consciousness so different from our own that we can only approximately grasp the meaning inherent in some of them. Consciousness has a reality that we do not know and do not perceive.

In affirming that "all energy contains consciousness," transpersonal psychologists are not personifying matter or the body's cells. Nor are they assigning human traits to energy. They are simply acknowledging that our human traits are the *result of* energy's characteristics. And if consciousness creates and informs the brain, and not the other way around, then thoughts would exist before the brain and after it. And if thoughts exist before and after the brain, then so would the self who has them. Death would not be an end, but a transformation of consciousness into another form and a means to its continuation, leading toward a spiritual rebirth and regeneration, and an opportunity for other kinds of experience, development, and expression.

No boundary consciousness. Body and *mind* are one. Body and *world* are one. Therefore mind and world are one, and reality is participatory and deeply connective (synchronicity and nonlocal events happens). There is ultimately no division between the physical world and our inner psychological processes. No real boundaries exist, only diversity of function. All boundaries, therefore, are apparent boundaries, boundaries in appearance only. Mind and body are two aspects or dimensions of our experience and behavior that, *while we are physical creatures alive in time and space*, completely interpenetrate one another and can only be separated in abstraction. For practical purposes there is an apparent division between mind and body. In basic actuality there is no such division. One action affects all others, so intimately that it is basically impossible to speak of one action in isolation. There are no sharp boundaries between the various portions of the whole self. There are shadings and variations and that is all.

The mystery of the world is its comprehensibility. Physicist Albert Einstein once exclaimed: "The mystery of the world is its comprehensibility." The response of transpersonal psychology is that the world is comprehensible to the human intellect because the world and the human intellect are made of the same "stuff." That stuff is consciousness. The human intellect emerged out of what the world is. Comprehensibility is a part of energy's characteristics. Only when the two are viewed as separate and drastically different things does the gap between the world and the human intellect, ego, and conscious mind seem unbridgeable and its crossing "mysterious."

When the philosophy of panpsychism and modern physical theory of quantum mechanics are combined, there emerges an understanding of the transpersonal body in which we are able to recognize how the kinship between every atom and molecule and cell in the universe is a basic enduring connection, regardless of the separate appearance which is seen using the physical senses. The human physical structure's cells, atoms, and molecules possess the potentiality to form into an almost infinite variety of forms (Quantum Body: There are no real boundaries that separate self from non-self). The cells, atoms, and molecules that compose the physical body have a generalized consciousness and contain within themselves a compressed comprehension of the universe as a whole (Panpsychism: Consciousness comes first, and forms the physical body)). In these terms, then, each body is infinite, unbounded, connected in a most intimate way to all other things in the physical universe. The transpersonal nature of the physical organism will then be know for what it is: A patterned structural formation composed of a cooperative psychic gestalt of cells and molecules that in general have consciousness and contain the ability to form into many varieties of shapes and structures, brought together into a strong, cohesive identity by an inner, transpersonal self that enables the physical organism to exist as a separate construction and maintain the necessary sense of identity (Roberts, 1997c). Any particular self connected to such a body and able to utilize its atoms and molecules a stepping stones could theoretically expand his or her consciousness to contain the universe and everything in it.

IV. Evolution, Genes, and the Transpersonal Body

Evolution and Natural Selection

Darwinian evolutionary theory. The biological perspective (how the body and brain relate to experience and behavior) and the evolutionary perspective (how genes and environment select adaptive characteristics of brain and body that promote survival of the entire physical organism) often merge together in mainstream psychology so that biological correlates of experience and behavior are viewed within the context of evolutionary theory. Darwinian evolutionary theory states that organisms evolve or develop over time as a result of the "selection" by the environment of *whatever* physical and psychological characteristic or attribute enables the species to adapt to a given environment, survive and reproduce (called "adaptive features") -- whether it be bipedalism, strength, intelligence, aggressiveness, capacity for language, sense of self, feelings of free will, or sense of right and wrong. Adaptive fitness is a

function of our genes which are believed to be the source of our body build (its physical characteristics such as eye and hair color, body build, shape of nose), body physiology (size of endocrine glands, reactivity of autonomic nervous system, balance among neurotransmitters), and certain personality traits (intelligence, emotional reactivity, activity level, sociability) that enable us to survive and reproduce in a particular environment. Due to the propensity of species to prolifically reproduce, there will always be more species members than there are natural resources to support them in any given environment, leading to an inevitable competition among species members for resources; hence, there is a struggle for survival.

Individual differences in genetic inheritance (genotype) play an important role in evolutionary theory because it is the creative source for new adaptive features that lead to changes in a species' physical appearance (phenotype). Among the many different offspring of a species, certain physical and psychological attributes will spontaneously emerge over a long period of time from the species' genetic pool (called "random mutations") that are much more conducive than other attributes to survival in a particular environmental niche. Those organisms who, by nature or nurture, do not possess these adaptive features do not survive, perish, and their genes are not passed on to future generations through reproduction; hence, the survival of the fittest. In other words, only those psychological and behavioral traits that are conducive to survival in a particular environment which have emerged from slight, accidental genetic differences occurring among offspring of a species are "selected" by the environment or further reproduction and inherited through the generations, resulting in the gradual physical transformation of earlier versions of the species. Or so the theory goes.

> Evolution just happens; there is no direction or purpose involved. The direction that evolution takes is completely determined by the features possessed by members of various species of organisms and the environments in which those organisms exist. As environments change, the features that are adaptive also change, and on it goes forever. (Hergenhahn, 2005, pp. 275-276)

The problem with Darwinian man. Charles Darwin (1809-1882) spent over half his life proving the validity of his theory of evolution. Generations of psychologists since have viewed the natural world through its light, taking Darwinian theories for granted as being a literal interpretation of the origins of species, and attempting to make human nature conform to the picture of evolution as Darwin conceived it. Certainly Darwin's considerable achievement in classifying the different species and in describing their struggle for survival is an entirely true and objective representation of the natural world (Dewsbury, 2009). Indeed, evolutionary *theory* is so commonly held to be a scientific *law* in mainstream psychology that it seems heretical to even suggest that Darwin's theory and the "facts of evolution" may be little more than a working hypothesis or an unproven proposition open to serious challenge (Rennie, 2002).

The Darwinian theory of man, nevertheless, poses several problems when it comes to explaining our species' origins and development. No one denies that development happens, that changes occur *within* species, or that survival is an important *means* so that quality of life may be pursued and lived. The problem lies in the *mechanisms* by which species development is said to occur: (a) the "upward" transmutation of one species into another through the impersonal workings of a predatory, natural selection process; (b) the random, chance genetic mutations among offspring of a species that prove adaptive in a blind struggle for survival; (c) the idea that all species – human and non-human animals, plants, viruses, and bacteria – originated from a single primordial source that spontaneously came into being from protein or nucleic acid molecules which emerged by pure chance out of "dead" nonliving matter and which subsequently demonstrated an ability to reproduce themselves on a single planet just once in a universe in which entropy eventually conquers all. It is somewhat ironic to imagine that such a vital consciousness as our own could even suppose itself and the magnificent workings of its physical body to be the end product of inert physical and chemical elements that are themselves lifeless, but that somehow randomly managed to combine in such a way that our species attained logic and imagination,

thought and language, learning and memory, technologies and civilizations. It almost makes one believe in magic!

Evolutionary psychologists cannot conduct controlled experiments that vary the course of evolution; therefore, the theory cannot be experimentally verified. Many evolutionary tenets about possible mechanisms for human species development are proposed on a *post hoc* basis, accommodating virtually any disconfirming evidence by putting such data aside as an unexplained anomaly to be explained in the future, or by making the adequate adjustments in the theory so that sometimes evolution can be gradual or sudden, convergent or divergent depending on what geological/fossil record is being explained. Often circular reasoning is involved in that the theory of evolution is used to prove the theory of evolution. And after all this time since Darwin (1859) originally proposed his theory in *On the Origin of Species by Means of Natural Selection*, the geological/fossil record by now should have provided evolutionary biologists evidence in support for those supposed intermediate species that are presumed to link fish, reptiles, birds, cats, monkeys and human beings together in the hypothetical evolutionary tree of life.

Because attributes such as precognitive abilities of the species violate basic tenets of evolutionary theory, especially the idea of linear time, no evidence of psi functioning is considered in evolutionist writings. Evolutionary psychology, despite its outward appearing scientific face, still prefers to build its models along the lines of mechanistic Newtonian cause-and-effect theories of evolution to support its conclusions, while ignoring those very scientific discoveries of modern physics that might give a theoretical basis for an alternative explanation of the origin and evolution of species. For example, consider the possibility that life "began" spontaneously in a given number of species at the same time. Suppose a unity of consciousness pervades all elements of the environment whether "alive" or "dead" and that there is a mutually cooperative, interactive, and intertwining evolutionary process going on such that the environment formed the species and the species formed the environment. What if the design and designer are so combined that it is impossible to separate them? Is it not possible that consciousness evolves form, and not the other way around?

The negative role of Darwinian theory in the modern world. In certain terms, Darwinian evolutionary theory, as conventionally held, has played an important negative role in present world conditions (Roberts, 1981a). H*ow can we trust ourselves or live lives of honor* when we are tainted with selfish genes and violent impulses from our evolutionary past and that our species has no intrinsic purpose other than a mindless determination reproduce, as implied by some theories of evolution? *How can people feel that individual actions matter* when they believe they are victims of an indifferent Nature that cares little for the individual, but only for the group? *How can we perceive our part in the great cooperative venture that is involved in nature* when each individual is in natural competition with one another, with other species, and even the earth itself in a desperate and even deadly struggle to survive? *How can we expect moral and virtuous behavior from ourselves or from others* if we take it for granted that we are a predatory, blood-thirsty species whose nature is amoral and where there are no standards of right or wrong as anything goes for survival sake. *How can anyone believe that each individual has a right to pursue an equitable, worthy life with dignity* when people view themselves as members of an aggressively combative race who must seek their own good at the expense of others? *How can we learn to cooperatively work together for a more humane world* if we believe that competition is a grand ideal to be pursued and promoted at all levels of activity? There is no possibility of spiritual survival as far as evolutionary theory is concerned because evolutionary Darwinian man and woman are not created with a soul. All psychological activity is scaled down in between life and death. Death becomes an affront to life and comes to imply a certain kind of weakness, for is it not said that only the strong survive?

The Role of Spirituality in Evolution

Few alternative theories of species origin and evolution exist. Transpersonal psychology is generally silent about the role that Darwinian evolutionary theory plays in understanding the spiritual nature of man because there are just not many good alternative theory to choose from (Wilber, 1981). Creationism with its literal interpretation of the Biblical story of creation and view of the relative immutability of the species has serious shortcomings as does the modern version of the theory of "Intelligent Design" (Rennie, 2002). There are many different shades of meaning and interpretation of evolution that lie between the two opposite poles of Darwinian theory and Creationism. In scientific and religious terms, both these theories ignore too much. Moreover, our conscious lack of knowledge about the origin of the universe and our species, and its amazing variety of "living" and "nonliving" forms is a lot more than what we do know. There are likely a large variety of systems of checks and balances in the body of which we are intellectually ignorant and which go into the construction and maintenance of the physical organism. There may well be many other fields of reality or dimensions of actuality within which the physical organism exists and moves and reacts and influences (and is influenced by) than we realize -- or is considered possible by a Newtonian-based psychology -- that remain to be discovered.

The importance of natural religious knowledge in evolutionary development. Transpersonal psychologists are generally dissatisfied with mechanistic explanations that confidently assert that life arose by chance, perpetuates itself through random mutations and natural selection, and basically has no meaning except its own survival, while overlooking or denying the validity of the species' capacity for religious feelings. Many transpersonal psychologists and scholars of religion recognize that

> there is a *natural* religious knowledge with which you are born. It is a biological spirituality translated into verbal terms. It says: 'Life is a gift (and not a curse). I am a unique, worthy creature in the natural world, which everywhere surrounds me, gives me sustenance, and reminds me of the greater source from which I myself and world both emerge. My body is delightfully suited to its environment, and comes to me, again, from that unknown source which shows itself through all the events of the physical world.' That feeling gives the organism the optimism, the joy, and the ever-abundant energy to grow. It encourages curiosity and creativity, and places the individual in a spiritual world and a natural one at once. (Roberts, 1981a, p. 74)

Understanding the role that such natural religious knowledge has played in species evolution is important for achieving a deeper understanding of our collective overall purpose as a species in the human cultural world we have created. Zoologist Alister Hardy (1966) has proposed that early man "'consciously chose' to attend to the spiritual dimension of their awareness…because spiritual awareness gave them additional strength to cope with the dangers and difficulties of their physical and emotional environments....[and that] subsequent genetic mutations that enhanced this kind of awareness would be selected for because they gave an advantage in the process of evolution" (Hay, 2006, p. 39).

Changing concepts of God as a reflection of the evolution of human consciousness. Transpersonal psychologists who recognize world religions as spiritual psychologies – Judaism, Christianity, Islam, Hinduism, and Buddhism – acknowledge that religions have played an important role in the collective psychological evolution of our species (Tart, 1975/1992). From the perspective of transpersonal psychology, the historical progression of religion, philosophy, and science gives us a perfect picture of the development of human consciousness. The species' changing concepts of God – from the Old Testament concept of Jehovah the Righteous to the New Testament concept of God the loving Father – went hand-in-hand with the development of our consciousness as a species, reflecting -- sometimes in distorted form -- those greater inner realities of our being. Christianity's God concept was an important aid to humanity's emerging ego, and changed as humanity's consciousness did. Ultimately Christianity would set forth the initial precepts upon which Western Civilization was built. The study of the psychology of God as it appears in our histories, myths, and Scripture would help us discover much about our own psychology (Armstrong, 1993).

In other terms, our species' constructed images of God may be regarded as expressions of biologically-pertinent impulses that were intended to prompt the evolution of the species in certain directions. The species' constructed images and ideas of God and gods reflected not only the state of species' consciousness as it was or "is" but also pointed toward its desired future state, operating as a kind of spiritual blueprint just like an architect's plan, only at a different level. On this view, the various ideas of God that our species creates may be thought of as "intuitive projections" intended to give conscious direction to the species and to act as stimulators of development and evolution (Roberts, 1986a, 1986b). There is an important dynamism and vitality to our God concepts then that go beyond being simple intellectual containers for "religious sentiments" (Allport, 1955, p. 94). They act as transpersonal symbols of intuitive insight and transmitters for impulses toward "higher" stages of development that arise from the deeper dimensions of our species' nature (Assagioli, 1991/1988). Seemingly outside of the self, our God images, symbols, and concepts are be meant to lead the species into its greatest areas of fulfillment.

Evolutionary significance of the contemporary search for spirituality. The natural spiritual knowledge and cultural religious traditions of our species have had their extraordinary influence because behind their power lies the unending reality of our species' inner source. It is this inner reality that each individual tries to explore, express, and define in his or her private or personal struggle to believe in something "More." In the great sweeping changes in religious concepts that are abroad in our world today, the consciousness of our species – its collective psyche – is constructing and projecting greater images of the species' own probable fulfillment, and these are seen in its changing concepts of God (Chandler, 1988; Lewis & Melton, 1992; Needleman & Baker, 1981; T. Peters, 1991). Often the personality of God as generally conceived is based upon our small knowledge of our own psychology (Vitz, 1977). The promise and hopeful outcome of the sweeping changes in religious concepts that are abroad today is that in our attempt to reshape our understanding of God, in so doing we reshape ourselves. Transpersonal psychology is a part of this consciousness evolution.

Genetic Influences on Experience and Behavior

Behavior genetics and sociobiology. Genes play an important role in evolutionary theory and in mainstream biological approaches to human psychology. Genes are the agents and "carriers" of evolutionary change. The field of *behavior genetics* combines the methods of psychology and genetics to study the degree to which psychological and behavioral characteristics – such as intelligence, ability, emotional stability, activity level, rhythmicity, approach/withdrawal behavior, adaptability, threshold of responsiveness, intensity, quality of mood, distractability, and persistence – are inherited from parent to offspring. The field of *sociobiology* studies how natural selection has predisposed social species to behave in adaptive ways. Both behavior genetics and sociobiology view organisms as little more than survival machines for genes to make more genes ("A hen is only an egg's way of making another egg"). The cellular components regulating inheritance, such as DNA and genes, care nothing about the nature of what it created or whether its host is human, plant, or virus but only about its own genetic survival (Dawkins, 1976). Heredity and environment are viewed as the prime causes of behavior and experience, and exceptions – the children who do not seem to fit the patterns of their families or environments – escape notice almost completely, except by transpersonal psychologists who recognize that the individual can and does have access to other kinds of information than physical.

Epigenetics. Mainstream biological psychologists use to regard genes as existing within a closed system that simply holds information without any reference to the body's living systems. The genetic structure was thought to exist like some highly complicated mechanism, already programmed, and once turned on functioned "blindly" with no chance for modification. The field of *epigenetics* – the science of what

regulates the turning on and off of genes – is forcing the revision of at least four of these assumptions about the function and operation of genes.
First, the genetic system is not closed, but participates in a much greater give-and-take with the environment than is supposed. Second, genes do not simply hold information without any reference to whose body it is. Differences in genetics and evolutionary history make extrapolation of biochemical research between species utterly invalid, highly misleading, and medically dangerous (Greek & Greek, 2000, 2002; LaFollette & Shanks, 1996). Third, genetic events are not irrefutable or rigid in a deterministic sense but flexible enough to take advantage of changing circumstances. Biology is not destiny and no outcome is predetermined as far as our genes are concerned. Instead, chromosomal messages represent strong biological preferences or inclinations that lead each individual member of the species to the activation of certain *probable* biological, psychological, and behavioral events over others. Fourth, so-called "programmed" genetic activity can be altered by conditions in the exterior environment (a nuclear accident, toxic wastes) and by the overall interior mental environment of our thoughts and emotional state as illustrated by the extraordinary psychophysiological plasticity demonstrated in hypnosis and in multiple personalities.

Example - Hypnotizability and gene expression. Mainstream biological psychologists cannot specify the unknown pathways that the mind of one individual takes to transduce the simple *words* spoken by another individual (the hypnotist) into a *meaning* and *intention* that causes physical changes in the expression of one's genetic make-up or in DNA programming, as in the case of the fishskin boy (Mason, 1952). Here we have evidence of a thought tapping into the nucleus of a cell and the 46 chromosomes and an estimated 100, 000 genes in each cell that provide the blueprint for the synthesis of some 50,000 proteins. So-called "programmed" genetic activity apparently can be altered or changed by a change in beliefs. We may not know how it occurs; the fact remains that it can and does occur. "The meanings or ideas embedded in words which are spoken by one person and deeply accepted by another can be communicated to the cells of the body (and to the chemicals within the cells); the cells then can change their activities in order to conform to the meanings or ideas which have been transmitted to them" (Barber, 1984, pp. 115-116). Whatever the explanation, *beliefs about the body become expressed in changes in bodily functions*. Beliefs and expectations, emotions and feelings apparently are a part of the interior environment of the cell, the chromosomes, and the genes themselves.

V. Tuning the Transpersonal Body

Transpersonal Medicine

The marriage of body and soul. The body, like the mind, needs stimuli, variety, and richness. The body should not be overlooked because of some privileged position that the mind may have in some traditional views of spiritual development ("The body belongs to nature, while the mind belongs to God"). To ignore the bodymind is to risk developing the personality in an imbalanced way. Both body and soul dwell in a natural framework. Our mind is as natural as our body; our body is as spiritual as our mind. Both are a part *of* nature and not apart *from* nature, for nature itself is *super-natural* from the point of view of panpsychism. We are bodyminds - not just minds and not just bodies (Dychtwald, 1977/1986). If we identify with our body alone or if we identify with our minds alone, then we miss an essential dimension of ourselves. The body is not just a tool to be used. It is not just a vehicle. It is *oneself* in flesh. In a moment of identification, we don't just *have* a body; we *are* our body (Assagioli, 1965/1993). The body is spirit in flesh, its three-dimensional face, the soul in electro-chemical clothing. The spirit speaks with a physical voice and the physical body is a creation of the spirit. The relationship between the mind and body or the soul and flesh can be depicted by the evocative analogy of a marriage covenant: "As men and women are married to each other, so is each self wedded to its body. . . . Let no soul in flesh ignore its Earthly counterpart, or be unkind to its mate in time" (Roberts, 1995b, p. 213).

> Honor your body, which is your representative in this universe. Its magnificence is no accident. It is the framework through which your works must come; through which the spirit and the spirit within the spirit speaks. The flesh and the spirit are two phases of your actuality in space and time. . . .The body is the soul in Earth-garments. It is the face of the soul turned toward the seasons, the image of the soul reflected in Earth waters. The body is the soul turned outward. Soul and body are merged in the land of the seasons. . . . The knowledge of the soul is written in the body. Body and soul are the inner and outer of the self. The spirit from which the soul springs forms both – soul and body. In Earth time, the soul and the body learn together. The genes are the alphabets by which the soul speaks the body – which is the soul's utterance in flesh. So let the soul freely speak itself in flesh. (pp. 213-214)

Barriers to actualizing human transformative capacities and the body's capacity for health and vitality. One's attitude toward one's own body is highly important. On it depends whether we see our body as an obstacle to be overcome or as a companion on our journey to spiritual change. It is difficult to recognize the body's biological integrity and its effectiveness to protect itself from disease when modern medicine regards its natural defense system as at the mercy of alien diseases and viruses that can strike us down without warning and over which we have no personal control, except as it is medically provided, despite our feelings of good health. It is not easy for a person to expect a life filled with exuberance, health, and vitality if he or she feels alienated and separated from his or her body, and sees it as an unreliable machine and disease-prone adversary that cannot be trusted. A new kind of medicine -- a transpersonal medicine -- is needed that employs transpersonal approaches to health and healing, that understands what it means to be truly "healthy" in body and mind, and that recognizes the transpersonal energetic nature of the physical organism.

Transpersonal approaches to health and healing. Transpersonal psychologist Frank Lawlis (1996) defines transpersonal approaches to health and healing in the following way:

> Transpersonal approaches assume within each individual planes of wisdom beyond the primary intellectual strength of the ego. They use therapeutic strategies that attempt to bring out from inner sources the knowledge of the unconscious. Transpersonal psychology tries to engage as many levels of the personality for their valuable skills in dealing with particular issues. It views healing as the result of harmonizing and balancing the body-mind-spirit dynamics within a person's sphere of being. It holds that individual growth can be actualized through awareness and the utilization of mythic and symbolic imagery, incorporating cultural and personal dynamics. (Lawlis, 1996, p. xvii)

Health as wholeness and creative tension-in-balance. What does it mean to be truly healthy in body-mind-spirit? The root meaning of health is *wholeness*, from the Anglo Saxon word for "whole," " hale," and "holy"*;* the word "disease" comes from Old French meaning "lack of ease" or dis-ease. Health then is wholeness and wholeness is balance. "Far from being simply the absence of disease, health is a dynamic and harmonious equilibrium of all the elements and forces making up and surrounding the human being" (Weil, 1988, p. 51). "From the holistic perspective, health is seen as the balanced integration of mind, body, and spirit. Rather than merely being the absence of disease, health is viewed as a positive state of creative self-expression, usually accompanied by feelings of joy, vitality, happiness, and love" (Fields et al., 1984, p. 184). What we perceive as illness is a sign that the body is out of balance and is automatically taking steps to correct it. This is the natural healing process that occurs in cycles, and each person has a different pattern. In these terms, illness and disease are therapeutic, intended to maintain the body's stability. It is important to remind oneself of the body's natural healing abilities. The body's leanings are toward health, not toward disease.

> Healing comes from inside, not outside. It is simply the body's natural attempt to restore equilibrium when equilibrium is lost. Healing cannot be prevented from occurring (although it can be obstructed in its expression), nor can it be obtained from anyone or anything external. Your are born with the power to heal because healing is an innate capacity of every person, as it is of every animal and plant, and…of every created thing…. Medicines and medicine men can sometimes catalyze a healing response or remove obstructions to it, but they can never give you what you do not already have. (Weil, 1988, p. 55)

Energy medicine. Transpersonal medicine acknowledges that we are beings of energy. The vital force that composes our being is the inside source out of which the three-dimensional appearance of our body springs. That vital force also has an inner source. The Chinese call this vital force that supports and sustains all life "chi'i". The Hindus call it "prana." The Hebrews call it "ruach." The Native American Indians called it "The Great Spirit."

According to these holistic healing theories, health reflects our on-going ability to effectively organize, focus and command our own psychic and physical energy in a constructive way. We are the energy that we use and health occurs when our vital energy is organized, focused, and formed into creative patterns that flow through us in a balanced way. When this energy is blocked through lifestyles, habits, or negative emotions, then we become at the mercy so to speak of the very energy of which we are composed and these distortions manifest as physical or mental disease. In these terms, our physical state of health perfectly mirrors one's psychological state, one's practice in organizing inner vitality well enough to give it form, and balance of spontaneity and discipline in day to day living. When we consciously harbor negative ideas that are charged with fear and resentment, for instance, then the *flow* of our energy becomes blocked, causing the energy to be distorted and misused, resulting in bodily illness.

Poor health does not mean one is an evil person, or an indication of one's spiritual wealth or lack of it, but simply that the person has a block in that particular area in which he or she is unable to utilize mental and physical energy constructively and effectively. We all do well in certain areas and are blocked in others. Ideally, we want to get rid of the blocks in particular areas so that we are able to utilize our energy more effectively, use all of our abilities and capabilities, express ourselves fully, and fulfill our purposes as an identity and as an individual. From this perspective, mental and physical health is not an end product in itself or an unchanging situation, but a means by which the human personality strives to achieve value fulfillment in everyday life.

The psychic foundation of transpersonal medicine. Mind-body actions manifesting as placebo responses and spontaneous remission, miraculous healings and charisms, hypnosis and multiple personalities, biofeedback and mental imagery may involve any system of the body and influence the prognosis of any physical disorder, all the way down to the expression of genes (Moyers, 1995; Targ & Katra, 1999). These phenomena clearly show the importance of belief and the intimate connections between suggestion, behavior, and health. The substantial work done by respected scientists in these areas prove beyond doubt two main points: (1) the existence of a subconscious power or energy within the mind, latent but appreciable, that exercises control over the functions, sensations, and conditions of the body, and (2) the susceptibility of awakening and harnessing this power to heal the body by positive suggestions, constructive thoughts, optimistic beliefs, creative visualizations, and confident expectancy.

Tuning the Transpersonal Body

Key mental elements in the tuning process. Individuals who understand the transpersonal nature of the personal body and its possibilities for health and healing, are motivated to help individuals train themselves to develop the capacity to facilitate their own mind-body communication and healing processes (e.g., Houston, 1982; Leonard & Murphy, 1995; Maltz, 1960; Masters & Houston, 1978; Miller, 1987). "Knowing that mind-body communication and healing involve a real process that can be seen and measured, the next question becomes, 'How do we learn to utilize these natural processes of mind-body communication to facilitate our emotional and physical well-being" (Rossi, 1986, p. xiv)?

Transpersonal psychologist William Braud identifies 5 important elements that should be integrated into any efforts to successfully promote mind-body healing (cited in Schmicker, 2002, p. 161). They include:

1. *The need for bodily relaxation and a quiet environment.* A deeply relaxed body in a quiet environment slows down brain wave activity (from busy beta to relaxed alpha)
2. *Learning to focus your attention on one thing* (e.g., your breathing) which allows you to develop mental self-control and avoid distractions. Focused concentration and elimination of distractions are important ingredients.
3. *Learning visualization or imagery techniques* since pictures are the preferred language of mind-body interactions. In the passive receptive mode, relax and allow whatever images or impressions may come. In the active control mode, consciously choose and create what you wish to see or imagine.
4. *Incorporating intentionality into the process*, a wish that some goal be reached, and an expectation that it will. Total intention is formed by the desire and will to have or create what you choose to visualize, belief in the possibility of attaining it, the willingness to act on behalf of the belief, and an acceptance to have what you seek.
5. *The evocation of strong, positive emotions* during the healing process. Doubts and fears of one's own energy, emotions, and spontaneous impulses, or what may be encountered by venturing within one's own psyche creates conflicting messages and blockage of energy.

Bodymind practices. One way we can tune into the body/mind unity that is ourselves is to enter into the practice of one or more of the following bodymind techniques intended to transform not only body but mind as well (Fields et al., 1984, chap. 9).

- *Hatha Yoga* – One of four major forms of yoga (from "yolk" meaning union or communion) that makes use of slow stretching body postures (asanas) and controlled breathing to open the energy channels of the body (Iyengar, 1966).
- *Martial Arts* (Tai Chi Kuan, Aikido, Judo) – Designed to train the body to react spontaneously, naturally, immediately and develop the body's vital energy (chi in Chinese and ki in Japanese) in order to bring oneself into harmony with the movement of the universe itself.
- *Massage and Bodywork* (Acupuncture, Acupressure, Alexander technique, Bioenergetics, Chiropractic, Feldenkrais technique, Reflexology, Reichian massage, Reiki, Rolfing Structural Integration, Seiki-jutsu, Shiatsu, Therapeutic Touch) "Tunes the body through relaxation, and at the same time enhances self-awareness… [releasing] blocked energy in the body, allowing the chi, or life force, to flow more freely. When our bodies open, energy of the universe can move through us" (Fields et al., 1984, p. 169).
- *Washing, fasting, eating, and breathing.* Frequent bathing, occasional fasting, moderate consumption, and breathing mindfully all develop a respect for the body.

The power to breathe and to relax. Breathing is important, not only because improper breathing is a common cause of ill health, but also because breathing is linked to our Voice and the energy level of our body. Whole-body breathing techniques are designed for building energy and vocal power (Joseph, 1994). Spiritual practices such as Hatha-Yoga draw upon the power to breathe to maximize *prana*, or life energy, in order to restore the body and transform the self (Rosen, 2002). Breath training is used in psychotherapy as a recognized treatment for relieving anxiety, depression, hypertension, and chronic fatigue (Hendricks, 2005). Breathing is also important because it is an autonomic nervous system function that we can consciously control without prior training in biofeedback instrumentation.

> As such it is bridge between the conscious and unconscious minds as well as between mind and body. Proper breathing nourishes the central nervous system, establishes a harmonious pattern for other bodily rhythms, and also regulates moods and emotions…. Learning how to breathe and working consciously with breath is a simple, safe, effective, and inexpensive way to promote good health of mind and body. (Weil, 1983/1989, p. 62)

Figure 2-10 describes several breath exercises that develop the power of attention and increases awareness for healing of the body.

Insert Figure 2-10 here

Focusing one's attention upon the breath during meditation practice has been proven to help individuals cope with stress and diminish the self-reinforcing stress cycle that has become a part of our hurried, work-a-day world (Kabat-Zinn, 1990; Murphy & Donovan, 1997; Shapiro & Walsh, 1984; West, 1987).

There are a number of beneficial physiologic changes associated with body relaxation: hypothalamus is stimulated, breathing and heart rate decreases, blood pressure and levels of blood lactate (anxiety) lower, sympathetic nervous system activity (flight-or fight response) and metabolism is reduced, parasympathetic nervous system activity and alpha brain waves increase, oxygen consumption and muscle tension decreases (Benson, 1975). Once learned, relaxation of the physical organism can help tune the body's defenses against stress and stress-triggered illnesses, including high blood pressure (Benson, 1984, 1987). Benson (1996) documents scientific studies that validate the significance and importance of belief-inspired healing that utilizes the "faith factor." **Figure 2-11** presents three different techniques for relaxing the body.

Insert Figure 2-11 here

The great benefits of physical exercise. The benefits of physical exercise for transformative learning, growth, and development are great and result in many different kinds of beneficial effects on mind and body, including: strengthened heart muscle, lowered resting heart rate, increased blood and hemoglobin levels, improved venous return, improved circulation, decreased blood pressure, greater bone mass, decreased degeneration of joints and ligaments, increased muscular strength, improved reaction time, improved ability to utilize fats and carbohydrates, decrease in body fat, normalized blood lipid levels, improved mobilization of lactic acid, improved hormonal balance, increased blood-clot-dissolving enzymes, strengthened immune system, reversal of coronary heart disease, and improved resistance to cancer (Murphy, 1992, pp. 425-431).

Physical exercise also aids in coordination, and satisfies the need for creative variety. The nervous system is regenerated and nerve impulses quicken, as does circulation. Spontaneous motion is elicited as impulses are aroused. Physical exercise aids in keeping the channels open between the conscious and

subconscious, and helps in ridding the personality of harmful influences. It helps in generating new energy, and provides a mental rest. It ensures the mobility of the inner personality and dissipates resistances before they accumulate. Physical exercise stimulates different portions of the psyche, and allows mental concepts to be re-arranged and new insights to emerge.

Ultradian rhythms and self-hypnotic healing. "Psychobiologists are finally beginning to discover the biochemical steps by which mind can modulate molecules at the cellular and genetic levels, thereby explaining the mysteries of spontaneous healing, the placebo response, and so-called miracle cures. The challenge for hypnotherapists is to determine how to facilitate these specific biochemical stages within the cells, as they are illuminated by basic research" (Rossi, 1986, p. 109). Correct self-suggestions given to our subconscious mind, reinforced by emotions and imagination, can help us do this. Rossi and Cheek (1988) provide many different hypnotic scripts for inducing mind-body healing that can be readily adapted for use as a natural form of self-hypnosis to improve most stress-related mind-body and mood disorders. Rossi and Cheek recommend that we take advantage of those natural 90-minute "break-rest-activity-cycles" (BRAC) or "ultradian rhythms" that occur during the day to allow our unconscious self to do its own inner healing work for 5, 10, 15, or 20 minutes. **Figure 2-12** presents three exercises that utilize "natural" hypnosis to insert positive, healthful beliefs into the subconscious where they may be acted upon.

Insert Figure 2-12 here

The goal is to recognize and acknowledge the power of one's conscious mind in the present moment to insert new beliefs more in line with the kind of experience one desires in daily life. The aim is to utilize the power of *conscious* belief, expectation, and intent to mobilize subconscious reactions that will bring into one's experience the desired new conditions. When used in conjunction with breathing and relaxation exercises, natural hypnosis creates a dissociated state of consciousness in which beliefs may be more easily inserted, and the powers of the subconscious mind more easily awakened and harnessed for creative problem-solving purposes (Miller, 1987).

Using visualization and imagery to enhance performance in everyday life. Creative visualization and imagery are tools that can enhance performance in daily life (Druckman & Bjork, 1991; Richardson, 1987). When visualization and imagery is integrated with other transformative educational practices such as diaphragmatic breathing, progressive relaxation, natural hypnosis, bodymind practices, and physical exercise, then daily performance is enhanced to an even greater degree (Greenspan & Feltz, 1989; Suinn, 1983; Whelan, Meyers, & Berman, 1989).

What is creative visualization? Creative visualization is the technique of consciously using your imagination to regularly create a clear image or mental picture of something you wish to transpire in your daily life (Epstein, 1989; Fanning, 1988; Gawain, 1982).

> Creative visualization is the technique of using your imagination to create what you want in your life… Imagination is the ability to create an idea or mental picture in your mind. In creative visualization you use your imagination to create a clear image of something you wish to manifest. Then you continue to focus on the idea or picture regularly, giving it positive energy until it becomes objective reality…in other words, until you actually achieve what you have been visualizing. (Gawain, 1982, pp. 2-3)

Successful outcomes in the use of creative visualization require an understanding of the following four ideas or principles (Gawain, 1982, pp. 5-8):

1. *Physically, we are beings of energy*; that is, what appears to the physical senses to be solid, separate, stable, mindless objects are actually composed of energy. Everything around us is made up of energy; we are all part of one great energy field.
2. *Thoughts and emotions have their own electro-magnetic energy* in addition to their recognized mental aspects.
3. *Thought creates form; form follows idea.* Thought guides and channels physical energy to flow into specific forms, acting as the blueprint around which physical form is later manifested. The "self-talk" in our minds are as effective as hypnotic self-suggestions, influencing our perceptions and coloring our moods, and serves as the basis on which we form our experience of reality.
4. *Like attracts like*. The electromagnetic energy of thoughts and feelings, like all energy, attracts energy of a similar nature. "We always attract into our lives whatever we think about the most, believe in most strongly, expect on the deepest levels, and/or imagine most vividly" (Gawain, 1982, p. 7).
5.

Unlike "positive thinking," creative visualization involves taking into consideration habitual negative feelings and attitudes, fears and repressions, guilt and resentment that hold ourselves back, blocking achievement of growth and value fulfillment. These are not to be swept under the rug, but are recognized and acknowledged and then, like a passing storm cloud, let go to dissolve and disappear through the *substitution* with more open, constructive, positive beliefs and expectations.

Basic elements for effective creative visualization According to Gawain (1982, pp. 16-18), effective creative visualization requires the successful performance of the following four basic steps: (1) set your goal, (2) create a clear idea or picture, (3) focus on it often, but not so often that the problem is overly emphasized, and (4) give it positive energy. **Figure 2-13** presents two exercises in creative visualization for health that describes the formal steps in the utilization of creative visualization, and provides an exercise in active imagination that uses both imagery and symbolism to work at a more deep subconscious level to deconstruct negative thoughts and feelings and replace them with more positive outcomes.

Insert Figure 2-13 here

During the visualization process, it is important that all of your sensory representational systems be employed to create as vivid, immediate, and direct a mental image as possible (Grinder & Bandler, 1976, Part I; Fanning, 1988). For example, using all five sensatory representational systems - visual, auditory, kinesthetic, olfactory, and gustatory – is more effective than engaging one or two alone (e.g., visual and auditory). Associating with an image (i.e., seeing what you would see as if you were in the image) is more effective than dissociating from the image (i.e., seeing yourself outside of the image). Images can be manipulated and altered to find out which works best for you (e.g., color vs. black-and-while, moving vs. static, near vs. distant, louder vs. softer, clear vs. fuzzy, changes in intensity, duration, tempo, brightness, etc.) (Bandler, 1985). On occasion, the visualized suggestion(s) will reach all levels of the personality, and be heard throughout the whole self. Effective action will follow.

VI. Conclusion

New biological foundations of psychology. The phenomena discussed in this chapter are regard as "anomalies" by mainstream psychology (Cardena, Lynn, & Krippner, 2000). Unusual observations and experimental data are only regarded as "anomalous," however, until theoretical frameworks change. Anomalous experience and behavior always provides genuine science an opportunity to enlarge its net of evidence and web of assumptions through which it views the nature of physical and psychological reality. The history of science is full of examples in which seemingly impossible phenomenon became possible and eventually accepted as facts within currently accepted scientific frameworks through a "paradigm shift" (a paradigm is "the entire collection of beliefs, values, and problem-solving methods and models shared by the members of a given scientific community") (Kuhn, 1970, p. 175). The existence of the subconscious and it corollary phenomenon of hypnosis, for instance, was ridiculed and scorned by skeptical orthodox psychological science for over 100 years as being a fraudulent phenomenon before a shift in beliefs, values and problem-solving methods led to its acceptance (Ellenberger, 1970). When first proposed to the scientific community, Harvey's theory of blood circulation was called "crack-brained," Jenner's small-pox vaccination was rejected, Louis Pasteur's germ theory met hostility, Lister's introduction of antiseptics was ignored, Thomas Edison's demonstration of the phonograph and invention of the incandescent light bulb were declared preposterous, Wegner's theory of "continental drift" was ridiculed, Einstein's General Theory of Relativity was declared incomprehensible and contradictory to common sense (Milton, 1996). "Yet the history of science itself demonstrates how often yesterday's heresies turn into today's orthodoxy" (Schmicker, 2002, p. 32)

White crows abounding. Placebo healing response and spontaneous remission, "miraculous" cures of Lourdes and the charisms of saints and mystics, changing "unchangeable" bodily processes in hypnosis and multiple personality, mind modulation of autonomic nervous system functioning using imagery and biofeedback, and distant mental action (i.e., healing-at-a-distance using intercessory prayer -- provide evidence of human transformative capacity. They are provocative demonstrations of personality action and the transpersonal nature of the physical organism that are not supposed to exist but do anyways. When we learn that something that psychology tells us cannot happen but does anyway, we should take a second look at the universal propositions biological foundations of psychology. As William James noted:

> If you will let me use the language of the professional logic-shop, a universal proposition can be made untrue by a particular instance. If you wish to upset the law that all crows are black, you mustn't seek to show that no crows are black; it is enough if you prove one single crow to be white. (Murphy & Ballou, 1973, p. 41)

We need only one verified case to cast doubt on the principle that transformative capacity and exceptional functioning of the human body is impossible and does not exist. "As in the case of subliminal perception, all that is needed is one solid finding to change the way we think about the mind" (Kihlstrom, 1984, p. 117). The fact of the matter is that we have not one, but many white crows, in the form of a Mr. Wright, a Pam Reynolds, a Vittorio Michelli, a Miss Beauchamps, a fishskin boy, a mentally normal hydrocephalic, and many others (Murphy, 1992). As transpersonal psychologist Frank Lawlis (1996) in his book *Transpersonal Medicine: A New Approach to Healing Body-Mind-Sprit* states: "Any medicine [or psychology] that does not honor and engage the transpersonal dimensions of human experience is limited and incomplete" (Lawlis, 1996, p. xiii). We cannot understand what we are or truly appreciate he transpersonal nature of the physical organism (i.e., our bodies) unless we understand such matters.

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Figure 2-1

Placebo: The Healing Power of Belief

(Hurley, 1991, pp. 28-31; Murphy, 1992, chapter 12; White, Tursky, & Schwartz, 1985)

Placebo-Induced Relief from Medical Disorders

- Angina Pectoris, and Essential Hypertension
- Warts
- Asthma
- Pain
- Rheumatoid and Degenerative Arthritis
- Hay fever and Other Allergies
- Coughing
- Migraine Headache
- Diabetes
- Peptic Ulcer
- Seasickness
- Common Cold
- Cancer
- Acne
- Radiation Sickness
- Multiple Sclerosis
- Parkinsonism and Other Organic Brain Disorders
- Obesity
- Urinary Incontinence

Placebo-Induced Relief from Psychiatric Syndromes

- Anxiety
- Depression
- Schizophrenia

Mood and Behavior Influenced By Placebos

- Pulse Rate
- Observable Calm or Nervousness
- Feelings of Comfort or Euphoria
- Insomnia and other Sleep Difficulties
- Emotional and Perceptual Changes that Mimic Marijuana Drug Experience
- Grip Strength
- Blood Pressure
- Memory

Adverse Reactions to Placebos

- Nausea
- Dry Mouth
- Heaviness
- Headache
- Concentration Difficulties
- Drowsiness
- Fatigue
- Unwanted Sleep
- Diarrhea
- Swelling of the Lips
- Weakness
- Rash
- Decreased or Increased Libido
- Bloating of the Lower Abdomen
- Dizziness
- Lumbar Pain
- Anorexia
- Blurred Vision
- Palpitations

Figure 2-2.
Spontaneous Remission: The Inner Healing Response
(O'Regan & Hirshberg, 1993)

Spontaneous Remission Occurs for Practically all Medically Known Disorders and Diseases	
• Cancers	• Disorders of genitourinary system
• Infectious and parasitic diseases	• Pregnancy and childbirth-related disorders
• Endocrine, nutritional and metabolic diseases	• Diseases of the skin
• Immunity disorders	• Subcutaneous and connective tissue diseases
• Diseases of the circulatory system, blood and blood forming organs	• Musculoskeletal disorders • Respiratory and digestive system disorders
• Disorders of the nervous system and sense organs	• Injury-related disorders.
Spontaneous Remission Occurs Following Physical Events That Would Not Be Expected to Effect A Cure	
• Diagnostic biopsy procedures	• Heat (fever)
• Bacterial skin infections	• Hepatitis
• Wound infections	• Hysterectomy
• Hypoglycemic coma	• Cauterization
• Hemorrhage	• Inflammation
• Menopause	• Pregnancy
• Smallpox infection and typhoid fever	• Abortion
• Pneumonia	• Incomplete operations
Spontaneous Remission Occurs in Conjunction with a Host of Psychological and Spiritual Factors	
• Group support	• Faith/positive outcome expectancy
• Hypnosis/suggestion	• Fighting spirit,
• Meditation	• Denial
• Relaxation techniques	• Lifestyle/attitude/behavioral (changes)
• Mental imagery	• Interpersonal relationship changes
• Psychotherapy/behavioral therapy	• Positive emotions/acceptance of negative emotions
• Prayer/spiritual belief	• Environmental/social awareness/altruism
• Religious/spiritual conversion	• Expression of needs
• Sense of purpose	• Sense of control/internal locus of control
• Placebo effect	• Desire/will to live
• Diet/exercise	• Increased or altered sensory perception
• Autonomous behavior/increased autonomy	• Taking responsibility for illness

Figure 2-3.
Spiritual Cures and Their Medical and Ecclesiastical Assessment
(Dowling, 1984, pp. 635-636)

"At present there are 25 members of the Commission: thirteen French, two Italian, two Belgian, two English, two Irish, one each from Spain, Holland, Scotland and Germany. Then they have a wide spread of specialties. Four each from general medicine and surgery, three from orthopedics, two each from general psychiatry, neuropsychiatry, dermatology, ophthalmology, pediatrics, cardiology, oncology, neurology and biochemistry. Ten members hold chairs in their medical schools. All are practicing Catholics. Many are doctors who come regularly to Lourdes as pilgrimage medical officers, but some have little or no connection with the shrine.

"If, after the initial scrutiny and follow-up, the Medical Bureau thinks that there is good evidence of an inexplicable cure, the dossier [on the cure] is sent to the International Medical Commission which usually meets once a year in Paris. The preliminary investigation of the data is made, and if the members agree that the case is worth investigating, they appoint one or two of their members to act as rapporteur. The rapporteur then makes a thorough study of the case, usually seeing the patient himself [or herself], and presents the material in a detailed written dossier circulated to the members before the meeting at which they will make their decision.

"The report is then discussed critically, at length, under 18 headings, a vote being taken at each stage. In the first three stages, the Committee considers the diagnosis and has to satisfy itself that a correct diagnosis has been made and proven by the production of the results of full physical examination, laboratory investigations, x-ray studies and endoscopy and biopsy where applicable: failure at this stage is commonly because of inadequate investigation or missing documents. At the next two stages, the Committee must be satisfied that the disease was organic and serious without any significant degree of psychological overlay.

"Next it must make sure that the natural history of the disease precludes the possibility of spontaneous remission. The medical treatment given cannot have affected the cure…Then the evidence that the patient has indeed been cured is scrutinized and the Committee must be satisfied that both objective and subjective symptoms have disappeared and that investigations are normal. The suddenness and completeness of the cure are considered together with any sequelae. Finally, the adequacy of the length of follow-up is considered. After this detailed study, the question, 'Does the cure of this person constitute a phenomenon which is contrary to the observation and expectations of medical knowledge and scientifically inexplicable?' is put. A simple majority carries the case one way or the other.

"The declaration by the[International Committee] does not make it a miracle because that is a matter for the Church, not doctors. The verdict is sent to the patient's bishop and if he thinks fit he appoints a Canonical Commission with its own medical advisors. If it reports favorably and the bishop accepts the report, he issues a decree declaring the case to be a miracle.

Figure 2-4

Case Studies of Healing at Lourdes

(Murphy, 1992, pp. 269-271; O'Regan, 1991, p. 51; O'Regan & Hirshberg, 1993, pp. 547-548; Garner, 1974)

Francis Pascal contracted meningitis – an inflammation of the membranes that cover the brain and spinal cord – in 1937 at the age of three that caused loss of sight and partial paralysis. One year later, Pascal was brought to Lourdes and, after two immersions in the waters that flow from an underground spring there, was instantly cured of his blindness and paralysis. Members of the International Medical Commission confirmed that Pascal's previous blindness and paralysis had been organic, not functional., and that his cure was authentic. The cure was pronounced to be miraculous by the archbishop of Aix-en-Provence in 1949.

Gerard Bailie, born with normal vision, developed bilateral chorioretinitis and double optic atrophy - a normally incurable inflammation of the choroid tissue and retina of the eye, resulting in the reduction of blood supply and a wasting away of the optic nerve - in 1943 at the age of two and a half, and lost his sight entirely as a result of an unsuccessful surgical operation. Four years later, Bailie's sight was completely restored during a visit to Lourdes. The Members of the International Medical Commission confirmed that Bailie's previously atrophied optic nerves had been completely restored in size and that he could now see objects clearly.

Delizia Cirolli was diagnosed with a case of Ewing's sarcoma in her right knee – a malignant tumor of the bone that produces painful swelling in the tissue of the knee - in 1976 at the age of 12. Refusing the advice of the surgeon to have her leg amputated, Delizia's parents took her to Lourdes where she spent four days attending the ceremonies, praying at the Grotto, and bathing in the waters. There was no improvement and X rays taken the following month showed a spreading of the malignant tumor. As family and friends prepared for her funeral, they prayed to the Virgin Mary for a cure and Delizia's mother regularly gave her Lourdes water to drink. Three months later, the malignant tumor had vanished, and subsequent X-rays showed repair of the bone that had metastasized. The Members of the International Medical Commission confirmed that Ewing's tumor had been the correct diagnosis and in 1982 declared that the cure was scientifically inexplicable.

Serge Perrin developed organic hemiplegia with ocular lesions - a paralysis of one side of the body caused by a brain lesion with loss of sight caused by cerebral circulatory defects – in 1970. After praying at the Grotto and bathing in the water, Perrin was suddenly and completely cured of his afflictions, regaining motor movement and restoration of his sight. The Members of the International Medical Commission confirmed the original diagnosis and deemed the cure scientifically inexplicable.

Figure 2-5

Charismatic Phenomena Recognized by Catholic Authorities
(Murphy, 1992, p. 483; New Catholic Encyclopedia, 1967, vol. 10, pp. 173-174)

Visions, the perception of normally invisible objects.

Locutions, interior illuminations by means of words or statements, sometimes accompanied by a vision and seeming to proceed from the object represented.

Reading of hearts, telepathic knowledge of secret thoughts or mood without sensory cues.

Incendium amoris, burning sensations in the body without apparent cause. These include interior heat, usually a sensation around the heart, which gradually extends to other parts of the body; intense ardors (when the heat becomes unbearable and cold applications must be used); and material burning that scorches clothing or blisters the skin.

Stigmata, the spontaneous appearance of wounds and bleeding that resembles the wounds of Christ.

Tears of blood and bloody sweat (hematidrosis), the effusion of blood from the eyes, as in weeping, or from the pores of the skin.

Exchange of hearts, the appearance of a pronounced ridge of flesh on a finger, representing a ring designating mystical marriage with Christ.

Bilocation, the simultaneous presence of a material body in two distinct places at once.

Agility, the instantaneous movement of a physical body from one place to another without passing through the intervening space.

Levitation, elevation of the human body above the ground without visible cause and its suspension in the air without natural support. It may also appear in the form of ecstatic flight or ecstatic walk.

Compenetration of bodies, when one material body appears to pass through another.

Body incombustibility, the ability of bodies to withstand the natural laws of combustibility.

Bodily elongation or shrinking.

Inedia, abstinence from all nourishment for great lengths of time.

Mystical aureoles and illuminations, radiance from the body, especially during ecstasy or contemplation, which is considered to be an anticipation of the Glorified Body.

Blood prodigies, bodily incorruptibility, and absence of rigor mortis in human cadavers.

Figure 2-6

Mind Modulation of the Autonomic Nervous System, Endocrine System, and Immune System by Hypnosis

(Barber, 1984, chapter 4; Murphy, 1992, pp. 325-339; Rossi, 1986, p. 110; Rossi & Cheek, 1988, chaps. 4 and 9; Sarbin & Slagle, 1979, chap. 9)

- "Glove and stocking" anesthesia
- Modification of respiration rate, blood pressure, pulse rate.
- Starting and stopping of bleeding (vasoconstriction/vasodilation)
- Control of frigidity, impotence, sexual excitement, menstrual periodicity, urine excretion.
- Pain relief (childbirth, menstrual cramps, burns, various surgery,
- Ameliorating hypertension and cardiac problems
- Ameliorating Raynaud's disease
- Enlargement and apparent growth of breasts in women
- Amelioration of bruises
- Recovery of memories of previous trauma may be accompanied by the reappearance of wounds resembling those received during the original trauma
- Control of diabetes and blood glucose levels
- Immune response facilitation in peritonotis
- Cure of asthma and other respiratory ailments
- Modulation of hunger contractions, gastric acid secretions, sensations of digestion and constipation
- Alterations of allergic responses (hay fever, tuberculin injections, pollen).
- Modification of basal metabolic rate, calcium metabolism, plasma cortisol, oral temperature, surface body temperature, electrodermal activity (GSR)
- Alterations in evoked response potentials (ERP), EEG activity,
- Induction of blisters, inflammation and wheals on the skin
- Minimizing and healing of burns
- Producing and curing diverse forms of contact dermatitis (e.g., poison ivy, herpes simplex, psoriasis)
- Dermal secretions
- Removal of warts
- Healing of congenital ichthyosiform erythrodermia ("fish-skin disease")
- Relief of musculoskeletal disorders (sprained backs, degenerative vertebral conditions, rheumatoid arthritis, bone fractures, bursitis, pulled muscles, muscle spasms)
- Controlling of blushing and whitening of the skin
- Aiding coagulation of blood in hemophiliacs
- Ameliorating the alarm (fight-flight) response
- Perceptual alterations (induced blindness, color-blindness, improved vision, hallucinations)
- Cognitive alterations (improved concentration, study habits, retention,, state-dependent enhancement of memory)
- Improvements in physical performance (strength, motor skills)
- Paranormal experience (ESP)
- Quasi-mystical states

Figure 2-7

Evidence of Extraordinary Psychophysical Plasticity in Multiples

Central Nervous System Changes

- **Brain Wave Activity.** When people with MPD and a control group of individuals who were instructed to rehearse imaginary alternate personalities are compared, there is much greater variation in the electroencephalograms (EEGs) of multiples as they switch from one alternate personality to another than in the EEGs of individuals who simulated the disorder (Putnam, 1984).
- **Regional Cerebral Blood-Flow.** Changes in regional cerebral blood-flow are reported to occur as multiples switches from one alternate personality to another, with different hemispheres being activated with different alternate personalities (Prigogine, 1991)
- **Pain Sensitivity.** There are many reports of individuals with MPD with alternate personalities are anesthetic (i.e., do not feel pain at all) or whose "job" is to "take the pain" (O'Regan & Hurley, 1985). "When in pain, A can switch to an anesthetic personality. Or, personalities can keep passing the pain to each other in turn, switching when the persistent pain becomes intolerable" (Braude, 1995, p. 45)
- **Handedness.** Some multiples switch handedness as they switch ego-states (O'Regan & Hurley, 1985)
- **Galvanic Skin Response.** Marked fluctuations of electrodermal response in the hands of alternate personalities have been reported that mark the transition from one personality to another (Brende, 1984).
- **Anesthetics.** "In the classic case of Miss Beauchamps (M. Prince, 1905/1978), personalities B1 and B4 could be rendered unconscious with chloroform, while at the same time Sally would remain unaffected" (Braude, 1995, p. 49).

Anatomical Changes

- **Optical Changes.** "Psychologist Scott Miller, at the University of Utah, had an ophthalmologist give standard optical tests to ten multiples in different ego-states, and found that they experienced significant changes in visual acuity, in the shape and curvature of their eyes, and in their optical refraction. One woman with personalities aged 5, 17, and 35 had a childhood condition called "lazy eye" only in her 5-year-old state, while a male patient who had suffered an injury that made his left eye turn out exhibited the condition in just one of his personalities….Multiples often have different eyeglasses for their different selves" (Miller, 1989, quoted in Murphy, 1992, p. 243).

Immune System Changes

- **Allergic Reactions**. There are cases on record of individuals being allergic to fruits (e.g., citrus), animals (e.g., cats), environmental agents (e.g., cigarette smoking) in one personality and not allergic to them in another (Braun, 1983a). "One patient was allergic to citrus juices in all of his personalities except one. If this personality ate an orange and remained in control of the body for a sufficient period of time to digest and metabolize it, no ill effects resulted. Another patient, who was usually so allergic to cats that she itched and teared around them, could play with them for considerable periods of time in one of her ego-states, and even be scratched and licked, without any apparent allergic responses" (Braun, 1983b, quoted in Murphy, 1992, p. 242).
- **Dermatologic Reactions.** Whenever a female alternate personality who, as a child, had received abusive burns from lighted cigarettes administered by her mother and brother, appeared during therapy sessions, the burn spots would reappear on her skin and last for 6-10 hours (Braun, 1983a). "Each time that personality returned, the spots returned. The same patient in another personality developed stripe marks across the lateral aspects of both arms, and some across the shoulders and back of the neck, all of which…were reported to be the results of a whipping administered by the mother" (Braun, 1983b, p. 127).

Endocrine System Changes

- **Diabetic Status.** A multiple can be diabetic in some personalities but not in others (Braun, 1983a).

Exceptional Abilities

- **Extending Peak Capacity.** A personality who is tired, intoxicated, or in the throes of heroin withdrawal in one alternate personality becomes alert, sober, and symptom-free once another personality takes control. "For example, if A is tired or drugged, B can emerge fresh or clear-headed" (Braude, 1995, p. 45).
- **Paranormal Experiences.** Multiples commonly report having paranormal experiences (e.g., ESP)
- **Healing.** There are cases where third-degree burns heal with unusual speed when an individual shifts from one personality to another (Braun, 1995; Putnam, 1984).

Figure 2-8

Mind Modulation of Autonomic Nervous Functioning via Biofeedback

(Kamiya, 1972; Miller et al., 1974; Murphy, 1992, chap. 16).

- **Voluntary Control of Muscle Activity**
    - Conscious control of firing frequency and rhythms of single motor unit (SMU) potentials at many muscle sites
- **Voluntary Control of Gross Muscle Activity**
    - Conditions that have been cured or relieved through biofeedback include:
        - Temporomandibular joint dysfunction (involving symptoms of pain in jaw and face, teeth grinding during sleep, ringing in ears, swallowing difficulty, fatigue)
        - Orofacial dyskinesia (symptoms of uncoordinated movements of face, jaw, tongue, neck).
        - Tension headache (through relaxation of the frontalis muscle).
        - Torticollis (symptoms of muscular contraction in which the head is twisted to one side).
        - Cerebral palsy symptoms
        - Compulsive subvocalization.
        - Esophageal dysfunction.
        - Excessive nasality.
        - Involuntary spasms of the eyelids.
        - Inability to open eyes following psychological trauma.
        - Muscular paralysis by cerebrovascular accidents.
        - Difficulty playing musical instruments.
- **Voluntary Control of the Brain's Electrical Activity**
    - *Alpha-wave training* (8-12 cycles per second) associated with mystical experiences, sensory deprivation, and states of sustained alertness.
    - *Theta-wave training* (4-7 cycles per second) ordinarily abundant during drowsiness and sleep, associated with daydreaming, imagery, and creative visualization.
    - *Beta-wave training* (40 cycles per seconds) associated with focused arousal accompanying learning processes
    - *Brain-wave asymmetry training* permits people to produce different amounts of alpha in each brain hemisphere simultaneously. "Researchers [have] demonstrated that alpha activity could be controlled in one hemisphere alone; that a 14-year-old boy could increase alpha in his left hemisphere while increasing beta or theta responses in his right; that male and female subjects could suppress alpha in both hemispheres or suppress it in one while enhancing it in the other; and that certain subjects could increase alpha at one site while decreasing it at another in the same hemisphere" (Murphy, 1992, p. 360)
- **Voluntary Control of Other Bodily Functions**
    - *Heart rate*. ("Heart malfunctioning has also been modified – and sometimes eliminated – through biofeedback training. Sinus tachycardias, Wolff-Parkinson-White syndrome, and fixed atrial fibrillation have been controlled by patients given beat-to-beat feedback during laboratory sessions and at home; and patients with premature ventricular contractions have learned to reduce the prevalence of their dysfunctional beat" (Murphy, 1992, p. 360).
    - *Blood pressure* (e.g., modification of systolic and diastolic pressures)
    - *Electrodermal activity* (reflecting stress and anxiety) can be increased or decreased.
    - *Peripheral temperature and circulation* (i.e., changes in hand temperature and peripheral blood flow shown to facilitate relaxation and relieves of migraine headaches, Raynaud's syndrome).
    - *Gastrointestinal functioning.* ("Patients with reflux esophagitis have learned to increase their lower esophageal spincter contraction, for example, thus providing a barrier against reflux. People with fecal incontinence resulting from neuromuscular impairment have learned to control their anal spincter. And patients suffering from stomach acidity, ulcers, or irritable bowels have learned to suppress their abnormal smooth-muscle responses and acid secretions" (Murphy, 1992, p. 362)

Figure 2-9

Biological Pathways through which the Mind Can Affect the Body
(Ader, Felton, & Cohen, 2000; Pert, 1997; Rossi, 1986)

1. Neuroanatomic and neurochemical evidence for the stimulation of lymphoid tissue (bone marrow, thymus gland, spleen, tonsils, lymph nodes, etc.) by the sympathetic nervous system means that mind (via the central nervous system) has direct physical access for influencing all organs of the immune system.

2. Observations that destroying or electrically stimulating areas within the hypothalamus, which is linked to emotion and regulated by higher brain centers via connections with the limbic system, results in activation of the immune system, and conversely, activation of the immune system results in inhibition or stimulation of the hypothalamus means that the intercommunications between the immune system and the hypothalamus may be open to influence by the mind.

3. Evidence that white blood cells of the immune system called lymphocytes bear receptor sites both for hormones that are secreted into the bloodstream by the endocrine system and for neurotransmitters that transmit neural impulses within the autonomic nervous system, and are themselves capable of producing neuropeptides (complex molecules secreted by the brain, spinal cord, glands, abdominal tissue, and organs) that circulate in the blood and lymph systems means that all of the changes produced in the autonomic and endocrine systems by the mind through hypnosis, biofeedback, and placebo response may be communicated to the immune system as well, and vice versa.

4. Data documenting that if the presentation of a neutral, distinctively aromatic scent, such as mint (the conditioned stimulus or CS) is followed by injection of a drug such as chemotherapy (the unconditioned stimulus or US) that induces a temporary gastrointestinal upset and activates immunologic response (the unconditioned response or UR), individuals will learn, in a single trial, not only to avoid the mint scent (a conditioned olfactory aversion) but also show a variety of specific and nonspecific conditioned immune responses when the CS is subsequently presented means that a variety of behavioral manipulations such as classical conditioning and hypnosis are capable of influencing various parameters of immune functioning.

5. The observation that various psychological stresses (such as final examinations) and depression can alter immune system functioning and the onset of disease processes depending on the individual's perception of and capacity to cope with the stressful circumstances and the presence of psychosocial factors (social support, social isolation, crowding, noise) that have the potential to influence the susceptibility to and/or the progression of a variety of diseases such as tuberculosis and pneumonia, asthma and rheumatoid arthritis means that biochemical links established between the immune and nervous systems are also pathways for inner communication of thoughts, feelings, expectations, desires, fears, and beliefs.

Figure 2-10a

THE POWER TO BREATHE
Diaphragmatic Breathing
Kabat-Zinn (1990, Chapter 3)

- "Diaphragmatic breathing also called abdominal or belly breathing…is to breathe in a particular way that involves relaxing the belly…Diaphragmatic breathing is slower and deeper than chest breathing, which tends to be rapid and shallow. If you watch infants breathe, you will see that diaphragmatic breathing is the way we all start out when we are babies" (p. 53).

- "In abdominal or diaphragmatic breathing, the idea is to *relax* your belly as much as you can. Then, as the breath comes in the belly expands slightly (on its own) in an outward direction as the diaphragm pushes down on the contents of the abdomen from above. The diaphragm can go down farther when this happens so the inbreath is a little longer and the lungs fill with a little more air. Then a little more air is expelled on the outbreath, so that, overall, the full cycle of your breathing will be slower and deeper" (p. 54).

- "At the beginning you may find it helpful to lie down on your back or stretch out on a recliner, close your eyes, and put one of your hands over your belly. Bring your attention to your hand and feel it move as the breath flows in and out. If your hand is rising during the inhalation and falling during the exhalation, then you have it…It should feel like a balloon, expanding gently on the in-breath, deflating gently on the outbreath. " (p. 55)

- "There are two major ways if practicing mindfulness of breathing. One involves the formal discipline of making a specific time in which you stop all activity, assume a special posture, and dwell for some time in moment-to-moment awareness of the in-breath and the outbreath…. By practicing this way regularly, you naturally deepen your ability to keep your attention on the breath for a sustained period of time. This will improve your ability to concentrate in general as the mind becomes more focused and calmer, less reactive both to its own thoughts and to outside pressures….Making time to meditate…becomes making time to come home to your deeper self, a time of inner peace and renewal" (p. 57).

- "The second way of practicing using the breath is to be mindful of it from time to time during the day, or even all day long, wherever you are and whatever you are doing. In this way, the thread of meditative awareness, including the physical relaxation, the emotional calm, and the insight that come with it, is woven into every aspect of your daily life" (p. 57).

Figure 2-10b

THE POWER TO BREATHE
YOUR UNSUSPECTED ALLY IN THE HEALING PROCESS
Kabat-Zinn (1990, Chapter 3, p. 58)

Exercise 1

1. Assume a comfortable posture lying on your back or sitting. If you are sitting, keep the spine straight and let your shoulders drop.
2. Close your eyes if it feels comfortable.
3. Bring your attention to your belly, feeling it rise or expand gently on the inbreath and fall or recede on the outbreath.
4. Keep the focus on your breathing, "being with" each inbreath for its full duration and with each outbreath for its full duration, as if you were riding the waves of your own breathing.
5. Every time you notice that your mind has wandered off the breath, notice what it was that took you away and then gently bring your attention back to your belly and the feeling of the breath coming in and out.
6. If your mind wanders away from the breath a thousand times, then your "job" is simply to bring it back to the breath every time, no matter what it becomes preoccupied with.
7. Practice this exercise for fifteen minutes at a convenient time every day, whether you feel like it or not, for one week and see how it feels to incorporate a disciplined meditation practice into your life. Be aware of how it feels to spend some time each day just being with your breath without having to *do* anything.

Exercise 2

1. Tune in to your breathing at different times during the day, feeling the belly go through one or two risings and fallings.
2. Become aware of your thoughts and feelings at these moments, just observing them without judging them or yourself.
3. At the same time be aware of any changes in the way you are seeing things and feeling about yourself.

Exercise 3
Awareness of the Source Behind the Breathing
(Roberts, 1972, p. 91)

1. Try to sense within yourself the source of power from which your own breathing and life forces come.
2. When you feel within yourself this source, then sense this power flow outward through your entire physical being, through the fingertips and toes, through the pores of your body, radiating outward from your physical form like rays in all directions, with yourself as center.
3. Imagine now the rays undiminished, reaching then through the foliage and clouds above, through the center of the earth below, extending even to the farthest reaches of the universe.

Figure 2-10c

THE POWER TO BREATHE
YOUR UNSUSPECTED ALLY IN THE HEALING PROCESS
Kabat-Zinn (1990, Chapter 4, pp. 73-74)

Exercise 4
Sitting with Choiceless Awareness (p. 74)

1. Just sit. Don't hold on to anything, don't look for anything. Practice being completely open and receptive to whatever comes into the field of awareness, letting it all come and go, watching, witnessing in stillness.

Exercise 5
Sitting with Thoughts and Feelings (p. 73-74)

1. When your attention is relatively stable on the breath, try shifting your awareness to the process of thinking itself. Let go of the breath and just watch thoughts come and go and leave the field of your attention.
2. Try to perceive them as "events" in your mind.
3. Note their content and their emotional charge while, if possible, not being drawn into thinking about them, or thinking the next thought, but just maintaining the "frame" through which you are observing the process of thoughts.
4. Note that an individual thought does not last long. It is impermanent. If it comes, it will go. Be aware of this.
5. Note how some thoughts keep coming back.
6. Note those thoughts that are "I," "me," or "mine" thoughts, observing carefully how "you," the non-judging observer, feel about them.
7. Note it when the mind creates a "self" to be preoccupied with how well or how badly your life is going.
8. Note thoughts about the past and thoughts about the future.
9. Note thoughts that are about greed, wanting grasping, clinging.
10. Note thoughts that are about anger, disliking, hatred, aversion, rejection.
11. Note feelings and moods as they come and go.
12. Note what feelings are associated with different thought contents.
13. If you get lost in all this, just go back to your breathing.

This exercise requires great concentration and should only be done for short periods of time, like two or three minutes per day in the early stages.

Figure 2-11a

Exercise 1 - The Relaxation Response (RR)
(Benson, 1975; 1984, chapter 7 (entire), p. 122; 1987)

1. **Pick a focus word or phrase that is rooted in your personal belief system.**

"Since a most crucial part of any RR technique is to use a word or phrase to focus or meditate on, its important to pick a word that has a special meaning to you….you'll activate your beliefs in a way that will also encourage a healthful placebo effect….What word or phrase should you choose? It is entirely up to you. The only limitation is that the words or phrase should be short enough to be said silently as you *exhale* normally. This means that six or seven words would be the maximum number you should consider for your focus words. Here are some examples:
"Lord Jesus Christ, have mercy on me," "Our Father, who art in heaven," "Hail Mary, full of grace," "Come Holy Spirit, fill the heart of your faithful," "Unity in faith and love," "The Lord is my Shepard," "My peace I give unto you," "Shalom," "Let there be light," "Allah," "The Lord is wondrous and kind," "Joy is inward, " "Thou are everywhere," "One," "Infinite intelligence guides and protects me."

2. **Sit quietly in a comfortable position**. "The RR can be brought forth in any comfortable position that won't disturb your thoughts….The technique is restful, however, and so while you should make yourself comfortable, you don't want to lie down or sit in such a way that you could easily drift off to sleep."

3. **Close your eyes.** Avoid squinting or squeezing your eyes. Close them easily and naturally. The act should be effortless.

4. **Relax your muscles.** Starting with your feet and progressing up to your calves, thighs, and abdomen, relax the various muscle groups in your body. Loosen up your head, neck, and shoulders by gentle rolling your head around and shrugging your shoulders slightly. As for your arms and hands, stretch and then relax them, and then let them drape naturally into your lap. Avoid grasping your knees or legs or holding your hands tightly together.

5. **Become aware of your breathing, and start using your faith-rooted focus word**. Breathe very slowly and naturally. Simultaneously, repeat your focus word or phrase as you exhale. Use one word or phase as you exhale. Use one word or phrase during your sessions so that you'll automatically come to associate it with the calming impact of the RR.

6. **Maintain a passive attitude**. Along with the repeated word, sound, phrase, prayer, or thought, a passive attitude is the other most crucial aspect of eliciting a RR. If other thoughts intrude in your mind, gently disregard them. Do not try to force or concentrate them out of your mind. When you become aware of it, simply say to yourself, "Oh, well," and slip gently back into the repetition of your phrase. If you are distracted by an itch, or tight clothes, go ahead and scratch and rearrange your clothes so that you're more comfortable as you continue with your chosen word.

7. **Continue for ten to twenty minutes**. Once your session is over, sit quietly but keep your eyes closed for a full minute or two. Stop repeating the word or phrase you've been using. Allow regular thoughts to enter your consciousness once again. Finally, open your eyes slowly, and sit quietly for another full minute or two.

Figure 2-11b

THE POWER TO RELAX

Exercise 2 - Progression Relaxation

(Pierce, F., 1924. *Mobilizing the Mid-Brain.* New York: Putnam & Sons)

This technique is best performed in a sitting position on a bed,
then lying back as soon as it has been carried out.
The eyes should be closed through the entire series of exercises.
Read through the entire instructions until you have memorized each part.
Then put the instructions beside our bed and mentally follow through the steps in sequence.
If you forget a step, refer to the instructions briefly, and then continue on from memory.

1. Close your eyes.
2. Let your neck and shoulders be as loose as possible. Then rotates your head four times, very slowly, in a clockwise circle, trying to let the muscles loosen still more. Then reverse the movement, rotating the head counterclockwise for four revolutions.
3. As soon as this is completed, you should lie back and immediately raise your right foot about 12 inches from the bed. Make the muscles as stiff and taut as possible so they will tire quicker. As you hold your leg elevated, begin thinking of the muscles, following them from the toes right up to the hip.
4. Keep the leg elevated until it is thoroughly tired and it becomes an effort to hold it up. (this may take from one minute to 3-4 minutes). When it feels very tired do not lower it slowly – let it drop heavily, completely limp.
5. The instant the right leg has fallen, raise the left leg in the same manner, stiffening it. Immediately divert your thoughts to this leg, again following the muscles from the toes to the hips. then the leg is allowed to fall. [Depending on the time it takes to tire the leg muscles, you may have to go back over the muscles in your thoughts 2-3 times, doing it very slowly).
6. The right arm should be immediately be raised into a "Nazi salute" position, but with clenched fist. Stiffen and tighten the muscles to tire them more quickly. Follow in your thoughts the muscles from the fingertips up to the shoulder and neck, repeating as often as necessary until the arm is quite tired. As arms are lighter than legs, the tired arm should be allowed to fall by your side as limp as the proverbial dishrag. The left arm is then exercised in the same way, the thoughts instantly diverted when the right one falls.
7. When the left arm has fallen, your thoughts can be diverted from it by imagining, with your eyes still closed, a circle on the ceiling above you. Imagine it to be about four feet in diameter. Follow this circle around clockwise with your eyes. Then reverse it and go counterclockwise four times. This should be done slowly.
8. Completing this, visualize a square instead, with sides about four feet long. Go around it in the same way, four times clockwise and four times counterclockwise.
9. You should then lie for 2-3 minutes enjoying the relaxation you have established. Divert your mind from your eyes by thinking of anything pleasant.
10. Remember that in performing this exercise, and with every repetition that you perform, would are conditioning yourself to remain more relaxed during your daily life. Tension will no longer be chronic.

Figure 2-11c

THE POWER TO RELAX

Exercise 2 - Progressive Relaxation

(Samuels, M., & Samuels, N. (1973). *Seeing with the mind's eye: The history, techniques and uses of visualization.* New York: Random House)

1. Find a tranquil place where you won't be disturbed. Lie down with your legs uncrossed and your arms at your sides.
2. Close your eyes, inhale slowly and deeply. Pause a moment. Then exhale slowly and completely. Allow your abdomen to rise and fall as you breathe. Do this several times.
3. Now focus on your feet. Mentally say to yourself, "My feet are relaxing. They are becoming more and more relaxed. My feet are heavy." Rest for a moment.
4. Repeat the same suggestion for your ankles. "My ankles are relaxing. They are becoming more and more relaxed. My ankles are heavy." Rest again.
5. In the same way, relax your lower legs. "My lower legs are relaxing. They are becoming more and more relaxed. My lower legs are heavy." Rest again.
6. In the same way, relax your thighs. "My thighs are relaxing. They are becoming more and more relaxed. My thighs are heavy." Rest again, pausing to feel the sensations of relaxation in your muscles.
7. Relax your abdomen. "My abdomen is relaxing. It is becoming more and more relaxed. My abdomen is heavy." Rest again, pausing to feel the sensations of relaxation in your muscles.
8. Relax the muscles of your back. Rest.
9. Relax your chest. Rest.
10. Relax your fingers. Relax you hands.
11. Relax your neck. Rest.
12. Relax your jaw, allowing it to drop.
13. Relax your tongue.
14. Relax your cheeks.
15. Relax your eyes. Rest.
16. Relax your forehead and top of your head.
17. Now just rest. Allow the whole of your body to relax.
18. You are now in a calm, relaxed state if being. You can deepen this state by counting backwards.
    a. Breathe in. As you exhale slowly, say to yourself, "Ten, I am feeling very relaxed…"
    b. Inhale again, and as you exhale, repeat mentally, "Nine. I am feeling more relaxed…"
    c. Breathe. "Eight. I am feeling even more relaxed…"
    d. Seven. "Deeper and more relaxed…:
    e. Six. "Even more…"
    f. Five. (pause)
    g. Four. (pause)
    h. Three. (pause)
    i. Two. (pause)
    j. One. (pause)
    k. Zero. (pause)

Figure 2-12a

The Point of Power Is In The Present
(Roberts, 1974, pp. 340-341, 348-449)

Part I – Point of Power

"You must understand that your present is the point at which flesh and matter meet with the spirit. Therefore the present is your *point of power* in your current lifetime, as you think of it.

"For an exercise, sit with your eyes wide open, looking about you, and realize that this moment represents the point of your power, through which you can affect both past and future events. The present seen before you. . . is the result of action in *other* such presents. . . . There is no need at all for undesirable aspects of your contemporary reality to be projected into the future, *unless* you use the power of the present to do so. . . .. The present as you think of it…is that point at which you select your physical experience from all those events that *could* be materialized.

"[Now], in this period concentrate upon the fact that the point of power is now. Feel and dwell upon the certainty that your emotional, spiritual, and psychic abilities are focused through the flesh, and for five minutes only direct all of your attention toward what you want. Use visualization or verbal thought – whatever comes most naturally to you; but for that period do not concentrate upon any lacks, just upon your desire.

"Use all of your energy and attention. Then forget about it. Do not check to see how well it is working. Simply make sure that in that period your intentions are clear.

"Then in one way or another, according to your own individual situation, make one physical gesture or act that is in line with your belief or desire. Behave physically, then, at least once a day in a way that shows that you have faith in what you are doing. The act can be a very simple one. If you are lonely and feel unwanted, it can merely involve your smiling at someone. If you are poor, it can involve such a simple thing as buying an item you want that costs two cents more than the one you would usually buy – acting on the faith, even that feebly, that the two cents will somehow be given you or come into your experience; but acting *as if* you had more than you do. In health terms, it involves conducting yourself once a day as though you were not sick in whatever way is given you.

"The belief in the present, reinforced for five minutes, plus such a physical action, will sometimes bring literally awesome results. Such effects will occur however only if you cease looking into the past "for what is wrong," and stop reinforcing your negative experience. These same principles can be used in any area of your life.

Figure 2-12b

Part II – Natural Hypnosis
(Roberts, 1974, pp. 77, 353-355, 366-367)

You can use *natural hypnosis* to better your experience by performing the following exercise:

"For a certain amount of time I will momentarily suspend what I believe in this area, and willfully accept the belief I want.

I will pretend that I am under hypnosis, with myself as hypnotist and subject.

For that time desire and belief will be one. There will be no conflict because I do this willingly.

For this period I will completely alter my old beliefs. Even though I sit quietly, in my mind I will act as if the belief I want were mine completely."

"At this point do not think of the future, but only of the present.

If you are overweight, insert the weight that you think is ideal for your while you are following this exercise. Imagine that you are healthy if you have the belief that you are not. If you are lonely *believe* that you are filled with the feeling of companionship instead.

Realize that you are exerting your initiative to imagine such situations. Here there can be no comparison with your normal situation. Use visual data, or words – whatever is most natural to you….No more than 10 minutes is required.

"If you do this faithfully, within a month you will find the new conditions materializing in your experience. Your neurological structure will respond automatically. The unconscious will be aroused, bringing its great powers to bear, bringing you the new results.

Do not try to overdo this, to go through the entire day worrying about beliefs, for example. This can only cause you to contrast what you *have* with what you want. Forget the exercise when it is completed.

You will find yourself with impulses that arrive in line with these newly inserted beliefs, and then it *is* up to you to act on these and not ignore them.

Figure 2-12c

Mind Deepening
(Samuels & Samuels, 1973)

You are now in a calm, relaxed state of being.
To deep this state of imagining yourself in an elevator.
Watch the doors close.
Now look at the panel above the door which indicates the floor level.
Imagining that number 10 is lit up.
Feel the motion as the elevator begins to descend.
As the elevator slowly passes each floor, you will begin to descend.
As the elevator slowly passes each floor, you will become more and more relaxed, going to a deeper and deeper level of mind.
Now see the number 9 light up.
You are deeper and more relaxed.
See number 8 light up.
You are still deeper and more relaxed.
Now….7
Deeper and more relaxed….6
Still deeper…5
Deeper still…4
Deeper.
3….2…1…

You are now at a deep, open state of mind.
See the elevator doors open.
You are in small, comfortable room that is dimly lit.
On the wall in front of your is a large screen.
Facing the screen is a soft, comfortable chair.
Visualize your self in the chair facing the screen.
Say to yourself, “I am deeply relaxed.”
“My mind feels clear and tranquil.”
“I can visualize vividly and easily.”
“My mind is open and receptive to images that will be helpful to me.”
“I can look at the screen and see images come into view and disappear.”
If I wish to, I can hold the images on the screen or look closely at them.”
“I can even influence what type of image will appear on the screen.”
“If I have a question, I will see images that will help me find the answer.”
“If I’m working on a problem, I will see images that will help me with its solutions.”

Figure 2-13a

Putting It All together: A Simple Exercise in Creative Visualization
(Gawain, 1982, pp. 9-10, 21-26)

"Here is an exercise in the basic technique of creative visualization.

"For this exercise choose something simple, that you can *easily* imagine attaining. It might be an object you would like to have, an event which you would like to happen, a situation in which you'd like to find yourself, or some circumstance in your life which you'd like to improve.

"Get in a comfortable position, either sitting or lying down, in a quiet place where you won't be disturbed. Relax your body completely. . . . letting all tension flow out of your body. Breathe deeply and slowly, feeling yourself getting more deeply relaxed with each count.

"When you feel deeply relaxed, start to imagine the thing you want exactly as you would like it. If it is an object, imagine yourself with the object, using it, admiring it, enjoying it, and showing it to friends. If it is a situation or event, imagine yourself there and everything happening just as you want it to. You may imagine what people are saying, or any details that make it more real to you.

"You may take a relatively short time or quite a few minutes to imagine this – whatever feels best to you. Have fun with it. It should be a thoroughly enjoyable experience, like a child daydreaming about what he wants for his birthday.

Now keeping the idea or image still in your mind, mentally make some very positive, affirmative statements to yourself (aloud or silently, as you prefer) about it, such as

"I now have a wonderful, happy relationship with _____. We are really learning to understand each other"
"Every day in everyway I'm getting better, better, and better."
"Infinite intelligence guides and protects me in my activities."
"Everything I need is already within me."
"I accept all my feelings as part of myself."
"I am now attracting loving, satisfying, happy relationships into my life."
Abundance is my natural state of being. I accept it now."
"The light of God within me is producing perfect results in every phase of my life now."
All things are now working together for good in my life."
"My whole self is guiding me in everything that I do."

"These positive statements, called affirmations, are a very important part of creative visualization. Always end your visualization with the firm statement to yourself:

"*This, or something better, now manifests for me in totally satisfying and harmonious ways, for the highest good of all concerned."*

"This leaves room for something different and even better than you had originally envisioned to happen, and serves as a reminder to you that this process only functions for the mutual benefit of all.
"If doubts or contradictory thoughts arise, don't resist them or try to prevent them. Acknowledge them and then just let them flow through your consciousness, and return to your positive statements and images. "Do this process only as long as you find it enjoyable and interesting. It could be five minutes or half an hour.

Figure 2-13b

Old House/ New Villa

Imagination and Healing through Imagery and Symbolism
Roberts, 2002, pp. 287-288

- Goal and Purpose: Using symbolism (the language of the psyche) to cut down the physical time involved and to activate those psychological energies that are necessary in any replacement of ideas, replace the old thought form with a new construction, suggesting that the old construction has indeed vanished, and in its place a new more acceptable one is being built.

Instructions:
In your mind's eye,…

- Imagine a run-down, shabby, deteriorating shamble of a house with rotting floorboards and sagging porches. Any object can be used in place of the house. The object should be something you can visualize easily.
- Let this first house represent all negative ideas (or constructions). Have it firmly in your mind as to what these refer, specifically.
- Then, Imagine that it is burned to the ground, the remaining rubble carted away and burned. The first house (or object) should be deliberately destroyed and must be seen as completely destroyed, and the area cleared before a new object is imagined in its place. *What relief to see it vanish.*
- If you have difficulty imagining the deliberate destruction of the negative object, you may then imagine its destruction by an act of nature. [e.g. The house being struck by lightening]. If this is the case, then the exercise should be continued until you imagine yourself deciding upon and bringing about the destruction and replacement
- Imagine the land now free beneath it, open to the blessing of wind, rain and sun.
- Now, imagine a new house being built there (of your preferred choice) with all new materials, of splendid design, and see this (always in your mind) where before you saw the previous image.
- Let the new house represent the desired ideas (or constructions). Have it firmly in your mind (however) as to what these refer, specifically.
- Imagine the summer winds that blow over the land that now fills the interior of the house with scented air.