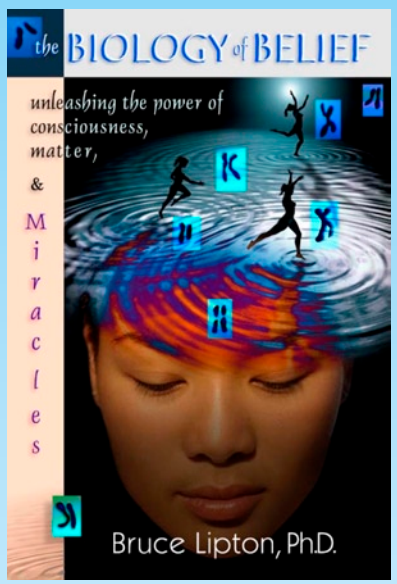
HEALTH BOOK SUMMARIES.COM
The best books on health, summed up and sent directly to you

THE BIOLOGY OF BELIEF

Unleashing the Power of Consciousness, Matter and Miracles



BUY THE BOOK

By Bruce H. Lipton, PH.D

The Evolution of the Study of Evolution

Since Watson and Crick revealed DNA's double helix structure to be the "hereditary factor" hypothesized by Darwin, the Central Dogma of the study of biology has been that genes are predominantly responsible for our physical characteristics, our health, and even our emotion and behaviors. The concept of "Survival of the fittest" has emphasized competition between organisms over cooperation, although both survival strategies can be observed in the natural world. Different elements of nature are in a delicate, dynamic balance with each other and with the environment. Harmony is everywhere in nature. The field of biology has emphasized the competitive nature of survival and neglected the importance of cooperation.

The Magic of Cells and the New Biology

- Cells are complex, "smart" entities that can survive on their own.
- Cells analyze information from the environment and select appropriate responses.
- Cells are capable of learning (called cell memory) and can pass information on to their offspring.
- The structure and function of cells are intimately intertwined.
- Cells hold the key to understanding the mechanism, as well as the meaning of life.
- An individual can be seen as a group of 50 trillion single-celled citizens working together, sharing one "amoebic consciousness".
- Cell communities are role models for groups of individuals.

In contrast to the Central Dogma, which tends to view individual's as controlled by their genes and in constant struggle with each other for survival, the New Biology sees life as a cooperative journey of powerful individuals who can program themselves to create joy-filled lives. The fully conscious mind can trump nature (genes) and nurture (environmental programming).

What Can We Learn from Cells?

Humans are made of cells, so it follows that we must share some basic behavioral patterns with them. The structures within cells, called organelles, are the functional equivalents of the tissues and organs with human bodies. The first life form on earth was a single cell. Multicellular life-forms were originally loose colonies of tens of thousands of single-celled organisms. Because increased awareness of the environment results in increased survival capacity, and more cells means more awareness, the evolutionary advantage of combining led to colonies of millions to trillions of interactive cells. As complex multicellular organisms evolved, it proved more efficient for the cells to differentiate,

Summary Information

From the book *The Biology of Belief: Unleashing the Power of Consciousness, Matter and Miracles* by Bruce H. Lipton, PH.D. Copyright © 2005. Reprinted by arrangement with Mountain of Love (www.BruceLipton.com).

CAT 214981

meaning individual cells took over specific tasks. Over time, this pattern of differentiation became embedded in the genes of every cell in the community of cells, which increased its overall efficiency and ability to survive. Human organizations, Henry Ford's assembly line for example, employ this same principle of specialization and cooperation with the result of increased productivity and efficiency and consequently enhanced survival potential for all members of the community. Highly organized associations of millions and trillions of cells eventually became what we now refer to as single entities, for example, a mouse, dog, or human.

Was Lamarck Right?

Fifty years before Darwin published his theory of evolution based on the concepts of struggle and violence, Jean-Baptiste Lamarck presented a theory of evolution based on "instructive" cooperative interaction among organisms and their ever-changing environment. He proposed that organisms acquire adaptations necessary for survival and pass them on to their offspring. This idea that organisms can pass on their adaptations has long been dismissed as incorrect, but today, Lamarck's theories are being reevaluated based on new findings in cell biology. His emphasis on cooperation over competition is also receiving a fresh look, with the increased awareness that cooperation plays an invaluable role in the survival of the biosphere and in light of the many symbiotic relationships that are observed in nature. Recently, it has been found that genes can even be shared across species, through *gene transfer*. This process speeds up evolution by allowing species to pass on their cell memories to other species, and is a good example of the important role cooperation can play in the survival of a community of species.

Quick Overview of Cell Biology

- Cells are an assembly of protein building blocks.
- The human body comprises over 100,000 proteins.
- Each protein is a linear string of linked amino acid molecules, similar to a pop bead necklace.
- Peptide bonds between amino acids in the protein "backbone" can adopt different contours.

- 2 factors determine the contour of a protein:

  1. the physical pattern defined by the sequence of differently shaped amino acids

  2. the interaction of electromagnetic charges among the linked amino acids

- The final conformation of a protein molecule reflects a balanced state among its charges.

- If a protein's positive and negative charges are altered, the backbone will twist to adjust to the new distribution. There are three ways in which the distribution of electromagnetic charges can be altered:

  1. binding of other molecules, such as hormones

  2. enzymatic removal or addition of charged ions

  3. interference from electromagnetic fields (e.g., from cell phones)

- Proteins bind together when they are physical and energetic complements, interlocking like gears that fit together.

- The constant shape-shifting movements of proteins are the movements that propel life.

Roots of Genetic Determinism

When two strands of double helix unwind, each strand can make an exact, complementary copy of itself. Therefore DNA molecules are self-replicating, and were assumed to be able to control their own replication. This supposed capability, combined with its role as blueprint for the body's proteins, led DNA to be seen as the primary determinant of an organism's traits. DNA became the star of the show, and the Age of Genetic Determinism was born.

Beyond Genes

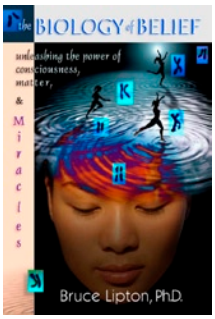
- The one gene-one protein theory prevailed until the Human Genome project found far too few genes (25,000) to account for all the proteins found in the human body (100,000).

- The human body contains only 1500 more genes than a spineless microscopic worm.

- Single-gene disorders affect less than 2% of the population.

- Diseases such as cancer, heart disease, and diabetes are the result of complex interactions among multiple genes and environmental factors.

- There are not enough genes to account for the complexity of human life or of human disease.



- Most diseases are linked to genes; genes are not the sole cause.
- Genes are not self-emergent: they cannot turn themselves "on" and "off".
- Genes do not have the ability to "control" life, because they are dependent upon environmental triggers to determine when and how they will be expressed.
- *Epigenetics* is the study of the molecular mechanisms by which environment controls gene activity.

Findings of Epigenetics: Genes are not Destiny

- DNA blueprints are not set in stone at birth.
- Factors such as stress, nutrition, and emotions can modify genes without changing the basic blueprint. Studies of protein synthesis reveal that epigenetic factors can create 2000 or more variations of proteins from the same gene blueprint.
- These modifications from environmental causes can be passed on to future generations.
- Proteins are turning out to play as crucial a role in heredity as DNA.

The flow of information in the current understanding of biology starts with an environmental signal, then goes to a regulatory protein, and only then goes to DNA, RNA, and finally a protein is coded. This is opposite of the previous assumption, in which DNA was the driver.

It is now clear that two mechanisms exist for passing on hereditary information:

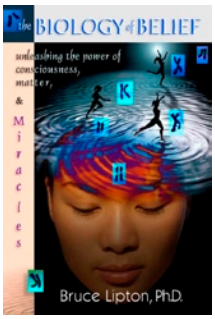
1. genes (nature)
2. epigenetic mechanisms (nurture)

Epigenetics and Disease

- Epigenetic mechanisms have been found to be a factor in many diseases including cancer, cardiovascular disease, and diabetes.
- Only 5% of cancer and cardiovascular patients can attribute their disease to heredity.
- Epigenetic alterations, not defective genes, result in many cancer cases.

The Magical Membrane - The True "Brain" of the Cell

The nucleus has long been thought to be the brain of the cell, however, it has been found that after enucleation (removal of the nucleus), cells continue to survive and engage in all normal functions of a cell except dividing and reproducing protein parts. Therefore, the



If you like this summary, you'll definitely want to order the complete book *The Biology of Belief: Unleashing the Power of Consciousness, Matter and Miracles.*

BUY THE BOOK

nucleus cannot be the central information processor, as it is not necessary for the cell to function normally and respond to its environment. If the nucleus is not the brain, then what part of the cell fills the role of information processor and determines how to respond to the environment?

The cell membrane holds the mechanisms by which the body translates environmental signals into behavior. The importance of the membrane has been underestimated by science because it is so thin that until the development of the electron microscope in the 1950's, its existence could not even be confirmed. It is now known that if the membrane of a cell is destroyed, the cell dies.

The three-layer structure of the membrane can be thought of as a bread and butter sandwich, using the following analogy:

- If dye were to be added to the top of the sandwich, it would seep through the bread, but stop at the butter, because of the oily substance would act as a barrier
- Now two kinds of olives are added to the sandwich, one with pimentos (stuffed) and the other without (unstuffed)
- If dye were added now, and the sandwich were sliced in half, we would see that the dye stops when it hits the stuffed olives
- But the unstuffed olives would provide a channel through which the dye could flow through the buttery layer to reach the other side of the "membrane" sandwich
- In this analogy, the bread and butter together represent the phospholipids, which contain polar molecules (the bread) and non-polar molecules (the butter layer).
- The olives are proteins called Integral Membrane Proteins (IMPs) which allow nutrients, waste materials, and other forms of "information" to be transported across the membrane.
- IMPs act as a stimulus-response team, and can be divided into two groups:
    - Receptor (sensory) proteins which monitor the environment both inside and outside the cell
    - Effector (action-generating) proteins which respond to the environment signals

- Together, the receptor and effector proteins act as a switch, which translates environmental signals into cellular behavior (referred to as *signal transduction*)
- Receptor proteins can read energy fields, suggesting the possibility of future pharmaceutical-free medical treatment
- All effector proteins, when activated, can serve as signals that activate genes

Interaction with the Environment Determines Cell Behavior

- There must be flexibility in how genes are expressed, or cells would not be able to adapt to changing environments.
- DNA provides the blueprint, but not the control of the operations of the cell.
- A cell's operations are primarily determined by its interaction with the environment, not by its genetic code.
- The cell membrane, by way of receptors (for awareness) and effectors (for action), exhibits "intelligent" behavior that controls the behavior of the cell in the same way that the brain controls the body

The Cell Membrane as a Computer

The cell membrane can be compared to a computer chip in the way that it acts as a semiconductor with gates and channels. The nucleus of the cell is like a memory disk or hard drive, programmed by DNA. The nucleus is removable, once the programs are "downloaded" into the cell. Environmental "data" is entered into the cell via the membrane receptors (keyboard), which then trigger the action of the effectors (the CPU). Viewing the cell this way allows the following two corollaries to be drawn:

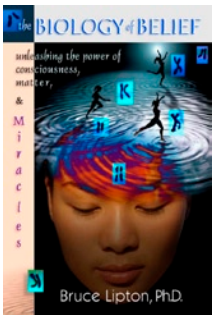
1. Computers and cells are programmable.
2. In both cases, the programmer lies *outside* the computer/cell.

The second conclusion is significant because it challenges the gene-centered view of cell behavior. The knowledge of the central role played by the IMPs in the cell membrane leads to the understanding that we can be masters of our fate, not victims of our genes.

Quantum Physics and Biology

Physics is the foundation of all sciences, but since Einstein concluded that $E=MC^2$ the findings of quantum physics have been largely ignored by biology and medicine, because they don't fit in the matter-based world of Newtonian physics on which biology is based. Quantum physics tells us the following about the nature of the universe:

- Energy and matter are one and the same-it is impossible to consider them as independent elements.



- The universe is one, indivisible dynamic whole in which energy and matter are deeply entangled.
- The atom has no physical structure.
- Matter can be defined both as a solid and an immaterial force field.
- Every material structure (including human beings) radiates its own unique energy signature.

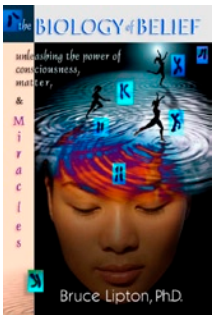
Yet doctors are trained to disregard the effectiveness of alternative treatments that are based on the idea that energy fields are the key to influencing physiology and health, such as acupuncture, chiropractic massage therapy, and prayer. Conventional research has completely ignored the role of energy in health and disease.

Holistic vs. Reductionist Approach to Healing

The reductionist view of medicine acts on the principal that if there is a problem in the system, such as disease, the source of the problem can be identified as a malfunction at one of the steps along the chemical assembly line. This approach leads to the development of magic-bullet drugs targeted to "fix" the broken spot, or to a focus on faulty genes and an effort to "design" better ones. However, the quantum perspective shows us that the universe is an integration of interdependent energy fields, constantly interacting with one another in a holistic system of information pathways. The reductionist view disregards the fact that changing one element of a system will have profound effects on the rest of the system, and on its functioning as a whole. Recent research in mapping protein to protein interactions in the cell has demonstrated the physical presence of the complex holistic pathways theorized by quantum physics.

Dangers of Prescription Drugs

- Drugs interact with more than one protein.
- Drugs can affect similar signals/proteins in different bodily systems, due to the fact that the same proteins are used in different systems.
- Whereas the human immune system is specific (i.e., targets only the area with the problem), most pharmaceuticals are distributed systematically throughout the body, causing the many side effects associated with the drugs.
- Most drugs treat the symptoms, but not the underlying problem.
- According to conservative estimates, iatrogenic illness (illness resulting from medical treatment) is the third leading cause of death in the U.S.
- Massive quantities of drugs prescribed in the U.S. violate the Hippocratic Oath taken by doctors to "First do no harm".



Need to Integrate Newtonian and Quantum Physics in Medicine

Newtonian laws apply to higher levels of organization, such as organ systems, people, or groups of people. Most disease is first detected at this level. However, the processes that instigate the disease are likely to have started at the molecular level, where quantum physics apply. To truly understand and effectively treat a disease, an integrated approach that takes into account the micro and macro levels of functioning is necessary.

Many studies over the last fifty years have demonstrated that the "invisible forces" of electromagnetic energy profoundly impact every facet of biological regulation. These energies include:

- Microwaves
- Radio frequencies
- The visible light spectrum
- Very low frequencies
- Acoustic frequencies

These energies impact the following processes, to name a few:

- DNA, RNA and protein synthesis
- Protein shape and function
- Gene regulation
- Cell division and differentiation
- Hormone secretion
- Nerve growth and function

Understanding energy fields is important for medicine, because vibrational frequencies can alter the physical and chemical properties of an atom just as physical signals like histamine and estrogen can. It has also been found that electromagnetic frequencies are a hundred times more efficient in relaying environmental information than physical signals such as hormones and neurotransmitters. This opens up a whole new avenue for the treatment of disorders and disease. However, while these energy fields have been utilized in scanning for disease, for example in CAT scans, MRIs and PET scans, biological research has for the most part ignored, and even shunned, their potential for use in treatment.

Bringing the Mind and Body Back Together

Since Descartes' philosophical separation of matter and mind in the seventeenth century, traditional bio-medicine has been based on a matter-only universe. However, the findings of quantum physics reveal that the physical body (matter) can be affected by the immaterial mind (energy), since the two are actually inseparable.

- Thoughts are energy.
- Energy can activate or inhibit the cell's proteins.
- Energy is more efficient than chemicals.
- Therefore, the power of the mind can be more effective than drugs.

There are many well-documented but unexplained examples of mind-body interactions, such as the religious practice of walking on hot coals without getting burned. Such examples are usually dismissed by traditional science as irrelevant exceptions. Within medicine, it is not known why some people are infected with HIV but never develop AIDS, or why some terminal cancer patients experience spontaneous remission of their disease. The mind-body connection may hold the answers.

Positive Thinking

To harness the power of the mind over matter, it is necessary to understand the roles of the separate but interdependent conscious and subconscious minds.

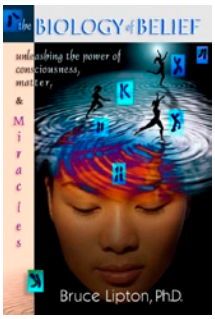
The conscious mind:

- Creative
- Can produce positive thoughts

The subconscious mind:

- Habitual
- Relies on instinct and learned experiences
- Re-plays old stimulus-response behavior "programs"
- More powerful than the conscious mind in terms of neurological processing abilities

When the desires of the subconscious conflict with those of the conscious mind, the subconscious mind has the advantage. Conscious positive thoughts alone are not enough to override years of hard-wired programming. It is necessary to learn to "re-write" these programs if we are to have control over our responses and behaviors.



The Evolution of Self-Consciousness and Free Will

- Fundamental reflexes are passed on from generation to generation in the form of instincts.
- As larger brains developed, with an increased neural cell population, organisms gained the capacity to learn from their experiences.
- This conditioning becomes hard-wired in the brain, resulting in subconscious habits.
- In most animals, this subconscious conditioning characterizes all of the brain activity.

Humans and some other animals have evolved a special region of the brain (the pre-frontal cortex) associated with thinking, planning, and decision-making. This is most likely the area of the brain where self-consciousness resides. The self-conscious mind is extremely powerful. It can:

- access much of the data stored in long-term memory
- observe and evaluate programmed behaviors
- decide to change the program
- override the subconscious

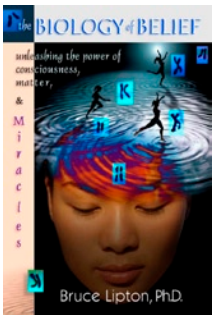
The Power of Perception

The perceptions that we hold influence our behavior. Our ability to learn is so remarkable that we can "download" these perceptions from others (parents, teachers, etc.) without having to learn them from experience. These perceptions then become our "truth", and part of our hard-wired program. The problem arises when these perceptions, which may become part of our subconscious programming without our awareness, turn out to be inaccurate. Because they are not infallible, these perceptions are actually beliefs.

Beliefs can control biology, but these beliefs can be true or false. If we find our subconscious saddled with false beliefs, we do have the capacity to consciously evaluate our stimulus-response program and change old responses, but it requires dealing with the powerful subconscious mind.

Growth vs. Protection

Cells exhibit two opposing responses to environmental stimuli. When in a toxic environment, they retreat from the threatening signals (protection). When in the presence of nutrients, they gravitate towards the life-sustaining signals (growth). These basic growth/protection behaviors are also essential for the survival of multicellular organisms. These behaviors have evolved for survival, but there is a catch: the mechanisms within a cell that support growth and protection cannot operate optimally at the same time. Energy



diverted to one goal means less energy is available for the other. Additionally, while growth requires an opening up of the system to the environment, protection requires a shutting down of the system to shield it from perceived threats.

Unlike single cells, multicellular organisms can respond to both signals simultaneously, but at a cost to overall vitality. For example, humans can survive under stress from threats, but constant stress leads to a chronic inhibition of growth mechanisms. Furthermore, eliminating stress only brings an organism to neutral. To fully thrive, we must also actively seek joyful, loving, fulfilling lives that stimulate growth processes.

The Role of the Nervous System

The nervous system's job is to:

- Monitor and interpret environment signals
- Organize appropriate behavioral responses

The nervous system has two protection systems:

- Hypothalamus-Pituitary-Adrenal (HPA) Axis-protects against external threats
- Immune system- protects against internal threats such as bacteria and viruses.

The HPA axis initiates the fight-flight response, which includes the following:

- Stress hormones are released into the blood.
- Blood vessels of the digestive tract are constricted so more blood is available for extremities (arms and legs).
- Visceral organs experience inhibition of growth-related functions of digestion, absorption, excretion, etc.
- The immune system is suppressed.
- Conscious brain functions are slowed.

The HPA axis is a remarkably well-designed system for handling acute stresses. However, it was not designed to be continuously activated, as it often is in our modern stressful environment.

Effects of Chronic Stress on Health

Research suggests that this hyper-vigilant lifestyle is severely impacting our health. Almost every major illness that people acquire has been linked to chronic stress. It is important to look at the areas of your life that cause stress, and determine the source of the stress. If it is fear, then gaining control over the fear can allow us to regain control over our lives and our health.

- In the words of Franklin Delano Roosevelt, "We have nothing to fear but fear itself."
- Letting go of fears is the first step towards creating a full and satisfying life.

Conscious Parenting

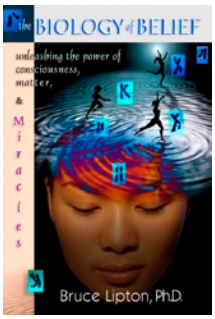
Parents are very influential in their children's mental and physical development. Beginning in the womb, the child's environment will have a powerful effect on all aspects of his or her life, even on those areas typically thought to be determined by genes. Parents can act as "genetic engineers" for their children by influencing epigenetic mechanisms starting prenatally and continuing throughout childhood.

- Children learn an incredible amount of information in the early years of life.
- They learn by experience as well as by observation.
- They often "download" their parent's beliefs (both implicit and explicit beliefs).
- These beliefs become hard-wired as synaptic pathways in the subconscious mind.
- These "truths" can shape the behavior and potential of the child throughout his or her life in a negative or positive direction.
- It is not until children are older that they are able to consciously examine the beliefs stored in their subconscious.

The Subconscious and the Conscious - a Dynamic Duo

Subconscious mind :

- The subconscious is an emotionless database of stored programs.
- It exists only in the present.
- Its function is to read environmental signals and engage in hard-wired behavioral programs.
- The programs are stimulus-response based behaviors.
- The stimulus can come from the external world or from signals from inside the body, such as emotions, pleasure, and pain.



Conscious mind:

- The conscious mind has the power to be spontaneously creative, and respond in new ways to environmental stimuli.
- It can be self-reflective and observe behaviors as they are occurring.
- It can stop an automatic behavior and create a new response.
- It can think forward and backward in time.

While the subconscious is the "autopilot", the conscious mind is the manual control.

The two minds together make a powerful team, because both can operate simultaneously. They can cooperate, such as when you learn a new behavior consciously, and then practice it until it becomes part of your subconscious. The conscious mind can over-ride automatic programming, but only if it is paying full attention. The subconscious is programmed to take over the moment there is a lapse in conscious attention.

Energy Psychology

The biggest stumbling block to realizing the success that we consciously desire comes from the limitations programmed into our subconscious. Sometimes we can be our own worst enemies. In order to over-ride negative beliefs and create new behaviors, it is necessary to change the programming in the subconscious. However, this cannot be done by force or by simply "reasoning" with the subconscious mind. Conventional methods such as drugs and talk therapy seek to suppress destructive behaviors. Newer methods capitalize on the findings of quantum physics, and focus on the connection between energy and thought as the point of influence on the subconscious.

Conscious Conception and Pregnancy

The best way to eliminate negative and unhealthy patterns of thought and behavior is to ensure that they are never programmed in the first place. Conscious parenting can result in positive messages and healthy cell behaviors being programmed into children's minds from the time of conception. New research is showing how the environment of the womb can influence many aspects of the child's entire life.

- *Genomic imprinting* occurs in the womb and shapes the brain, laying the groundwork for personality, temperament, and higher thought.

- Along with nutrients, the fetus receives other substances from the mother, such as stress hormones if the mother is chronically stressed, or excess glucose if the mother is diabetic.

- Suboptimal conditions in the womb that lead to low birth rate have been linked to a number of adult diseases including diabetes, heart disease, and obesity.

- Up to 51% of a child's potential intelligence is related to environmental factors such as the mother's drinking or smoking during pregnancy, or exposure to lead in the womb.

- Touch (or lack of) during infancy has been linked to later stress levels, social development, and violent tendencies.

For ourselves and for our children, genes represent our potential, not our destiny. Parents have the power to act as genetic engineers for their children by supplying their subconscious minds with positive and healthy messages. As adults, we have the ability to take charge of our lives, once we realize the power of our self-conscious minds to re-program our subconscious programming.

Spirit and Science

- The conclusions of quantum physics mirror those of early civilizations, in which matter and energy are intertwined, and every object in the universe possesses a spirit (energy).

- From biology we know that each individual has self-receptors (human leukocytic antigens) that are related to the immune system and reflect the unique stamp of that individual's identity.

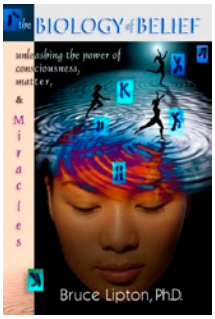
- Each cell's unique set of identity receptors are located on the membrane's outer surface, where they act as antenna's by downloading complementary environmental signals.

- These identity receptors read a signal of "self" that does not exist within the cell, but comes from the external environment.

It is the author's belief that people are spirits in material form who receive information from an environmental controller, or Spirit. As we live our lives, our experiences are sent back to that Spirit, and therefore the consequences of our lives exist outside of and last longer than our bodies.

Survival of the Most Loving

We are spiritual beings who need love in the same way we need food. We can learn from the lesson of cells that the best way to advance human civilization is to come together in a global community, in which cooperation is valued over competition. The best way to do this is to join communities of like-minded people who are working towards a world in which the most loving not only survive, they thrive. ■



If you like this summary, you'll definitely want to order the complete book *The Biology of Belief: Unleashing the Power of Consciousness, Matter and Miracles.*

BUY THE BOOK


HEALTH BOOK SUMMARIES.COM
The best books on health, summed up and sent directly to you