# Natural Psychology

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(Disclaimer: the material contained herein is intended for educational purposes only and should not substitute for professional medical advice.)
Introduction

Natural Psychology is a comprehensive, parsimonious explanation of human psychology (including rational consciousness and “mental disorders”) based on a radically different perspective of accepted science theory and elemental empirical neuroscience. Reconsidering the initial debate about thinking theory during the founding of modern psychology provides the key to understanding human psychology. Modern psychology was founded on two competing thinking theories; unfortunately, psychologists slowly migrated to one thinking theory without disproving or integrating the second theory. The thinking theory of neo-rationalism was advocated by Rationalists during the founding of psychology; this has remained a valuable legacy of rationalist philosophers. However, lost to current thinking theory is the advocacy of Associationists who challenged the Rationalists. The Associationists proposed rationality based on associative thinking; they were the legacy of classical British empiricists and ancient Greek philosophers. Associationists argued that rationality is a process of associating (connecting) all of the elements of a subject to arrive at sound judgment (“good sense”). Early Associationists including Pavlov and Skinner proved associative thinking with the stimulus/response of behavior conditioning but the politics of neo-rationalism trumped science. Repetitions of a stimulus/response cannot evidence learning since learning is the “modification of knowledge or behavior” and repetitions of a stimulus/response do not exemplify any change in either. After a stimulus/response is learned, repetitions exemplify and prove (associative) thinking by definition. Nevertheless, the critical debate about thinking theory remained in a stalemate between Associationists and Rationalists until the focus of psychology shifted to behavior theory. As the debate over thinking theory lost context to behavior theory (that is based on associative thinking), a neo-rational mental principle gradually became accepted theory. Associative thinking epitomizes lost knowledge\(^1\) that has been forgotten because it lost relevance rather than being disproved.\(^2\,^3\) Nevertheless, it was difficult to understand associative thinking without understanding the motivation that directs it. Natural Psychology herein explains associative thinking and the motivation that directs it with a different perspective of accepted science theory and empirical neuroscience. More importantly, understanding thinking and motivation (and their interaction) is the key to understanding all human psychology.

This thesis explains human psychology with accepted science theory and elemental empirical neuroscience; no new research is proposed or necessary. This thesis identifies and solves foundational scientific failings hidden deep in the current psychology/psychiatry paradigm — contradictions of the most basic principles of the sciences that inform it. Philosophers of
science and logicians advocate that fundamental science principles are critically important guidelines and that an anomaly of a fundamental principle renders a theory unscientific. This thesis explains human psychology with a radically new paradigm explained by a radically different perspective of accepted science.

This treatise is presented in a simple format. Chapter One describes a real science foundation for psychology; it addresses critical scientific contradictions and failings of the current psychology/psychiatry paradigm. Focusing on accepted science principles is critically important for understanding the basic empirical neuroscience of human psychology and the misdirection of current theory. Chapter Two explains thinking as an integral half of the binary neuroscience of motivated-thinking; associative thinking explains rational consciousness, cognition and “mental disorders” with a new perspective of empirical neuroscience (observable and verifiable). Chapter Three follows thinking theory with motivation theory — the other half of the binary science of motivated-thinking. A new perspective of elementary neuroscience similarly explains the motivation for thinking and behavior. Consistent with natural science theory, our natural motivation explains human nature and the motivation that seeks species survival. Understanding the binary neuroscience of motivated-thinking promotes an appreciation for the critical importance of unique individual experience and personal life histories in Chapter Four. This chapter describes how our motivation and thinking neurophysiology are directed by individual experience; consistently, Chapter Four disputes behavioral genetics (genetic determinism) and challenges the “science” that supports it. Consistent with natural science theory, this chapter also explains how human nature directs behavior towards species survival with broad adaptability to the environment. Following an explanation of the critical importance of personal experience in directing our mental process of motivated-thinking, Chapter Five explains human psychology. This comprehensive explanation of psychology unifies the essence of all current schools of psychological thought: structural, functional, biological, behavioral, psychodynamic, humanistic, sociocultural and cognitive. A unified theory of psychology promotes a comprehensive explanation of “mental disorders” in Chapter Six. Consistently, understanding "mental disorders" promotes a substantially better understanding of therapy for individuals and the community as described in Chapter Seven. Lastly, Chapter Eight is a conclusion that emphasizes the difficulty of making a classical paradigm shift. It is difficult to understand our rationality as produced through the gloriously simple binary interaction of motivated-thinking from the perspective of the current paradigm that assumes a complex neo-rational mental principle. The final chapter also describes the extraordinary value to the community of transitioning to a new psychology paradigm based on scientific truth.
This treatise includes supportive appendixes that are presented separately to avoid interrupting the main thesis with large digressions. Appendix A is an additional discussion of the pseudoscientific foundation of popular psychology/psychiatry theory and its neo-dualism. Following a discussion of science theory, Appendix B is a more detailed explanation of the neuroscience of thinking. Appendix C is an explanation of popular psychology theories from the perspective of the new paradigm of Natural Psychology. Appendix C provides a unified explanation of popular theories about learning, cognition, memory, states of consciousness, perception, intelligence, personality, language, and social psychology. Lastly, Appendix D explains popular theories about “mental disorders” from the perspective of the new paradigm of Natural Psychology. Appendix D provides a unified explanation of popular theories about “anxiety disorders”, “eating disorders”, “substance-abuse disorders”, “mood disorders”, “somatoform disorders”, “dissociative disorders”, “personality disorders”, and “schizophrenia spectrum disorders.”

Natural Psychology explains human psychology based on accepted science theory and basic empirical neuroscience; it solves anomalies of the scientific foundation of the current psychology paradigm. Natural Psychology is an elegant theory of biological and physiological psychology based on the binary science of motivated-thinking. This thesis is the key to an exciting new future; it is the explanation of our psychology that humans have sought since self-awareness. Although paradigm shifts are difficult, understanding behavior and the mental process will energize a renaissance of social and scientific advances for the community.
The Science of Human Psychology

Natural Psychology explains human psychology with elemental empirical neuroscience; it is a classical paradigm shift as described by the eminent philosopher of science, Thomas Kuhn. Popular psychology/psychiatry theory is a classical paradigm; it is a complete world view supported by terms with interrelated connotations and contexts that reinforce the status quo. Scientific paradigms are homogeneous; it is difficult to recognize a false assumption of a paradigm from within. In the arduous challenge (and valiant effort) to understand our behavior, it is far easier to theorize about behavior science and neuroscience and their relationship than to theorize about theoretical problems underlying the established paradigm. Eminent philosopher of science Karl Popper understood the difficulty of identifying false assumptions when he advocated the accepted Philosophy of Science principle of “falsifiability.” Philosophy of Science advocates that real science theories can be differentiated from ad hoc theories by falsifying them — explaining how to disprove them. The process of explaining how to disprove a theory identifies assumptions that are potential sources of error. Unfortunately, the admirable endeavor to understand behavioral neuroscience has not been falsified to identify assumptions of the prevailing paradigm for critical consideration.

Behavioral neuroscience investigates complex principles of molecular neuroscience, cellular neuroscience, and systems neuroscience while the philosophy of informing sciences implores consideration of simple principles of tissue neuroscience and systems neuroscience. Scientific logic, the philosophy of science, the philosophy of natural science, the philosophy of biology and the philosophy of physiology beg for consideration of simple binary tissue neuroscience. The philosophy of a science is the science’s most fundamental principle; it defines and frames a science with an unprovable underlying assumption. An anomaly of the philosophy of a science taints all of the science that is built upon it; as information technologists advocate, “garbage in, garbage out.” In the following four sections, this thesis addresses scientific anomalies hidden deep in the foundation of the current behavioral neuroscience paradigm. The following sections advocate that popular neuroscience theory contradicts: 1) basic science logic when it assumes complex brain principles and ignores simple binary science, 2) the philosophy of (general) science and a philosophy of natural science when assuming complex brain principles and ignoring simple binary science, 3) the philosophy of natural science and the philosophy of biology when diverging from a singular focus on the natural, physical (material) world, and 4) the
philosophy of physiology when ignoring an overview of tissue neurophysiology — the function of whole nervous tissues and their interaction. Logicians and philosophers of science contend that the philosophy of a science is the most critically important to follow and the most problematic (unscientific) to contradict; everything emanates from foundational principles. Current neuroscience investigations lack scientific truth by contradicting logic and the philosophy of the sciences that informs them.

First, popular behavioral neuroscience investigations contradict basic science logic while they continue a long tradition of assuming complex brain principles while brain principles are unknown. Full stop.

Moreover, popular neuroscience investigations continue to contradict basic science logic while they assume complex brain principles while modeling the brain with computers that operate on the simple principle of binary science. Again, full stop.

It may appear that simple brain principles would be obvious to scholars but appearances are often deceiving. It is extremely difficult to reverse-engineer a system that produces a complex product based on a simple principle especially when the simple principle is not sought.

The first sentence of the recent PBS series on the brain (The Brain with David Eagleman) advocates the common assumption of complex brain principles but scientific logic demands consideration of gloriously simple binary neuroscience.

Second, besides contradicting scientific logic, behavioral neuroscience investigations also continue to contradict the philosophy of science and a philosophy of natural science when assuming complex brain principles and ignoring simple binary neuroscience. All science theory is based on the principle of parsimony — Occam’s razor: “All other things being equal, simpler theories are better science”, or more accurately, “Fewer assumptions make better science.” Unfortunately, accepted neuroscience investigations are comfortable with increasing complexity and a related increase in unidentified assumptions; parsimony and falsifiability are not considerations. Popular behavioral neuroscience research contradicts the philosophy of science while embracing complexity and failing to consider beautifully simple binary neuroscience.

Besides contradicting the philosophy of science while assuming complex brain principles, neuroscience investigations similarly contradict a philosophy of natural science. The philosophy of natural science advocates that our environment is best understood with a singular focus on the natural (physical) world, but there is a secondary philosophy of natural science. Our most eminent natural scientists (Einstein, Brian Greene, Steven Weinberg, Walter Lewin) also
advocate that human nature is based on eloquently *simple principles that are hidden beneath an appearance of complexity*. Natural scientists contend that simple principles produce the complex manifestations of nature including human nature (binary neuroscience beyond binary neurons). One hundred trillion neural connections produce complex thinking and complex behavior but do not prove a complex brain principle. Moreover, only simple brain principles promote the natural science requisite of “functional resilience” (proper operation over time); consistently, maintenance engineers advocate simple engineering with the mantra (acronym) “KISS”: “Keep it simple, stupid!” Eminent natural scientists advocate simple brain principles; assuming complex brain principles and ignoring gloriously simple binary science is pseudo natural science.

Regardless of a long, painful history of problematic oversimplification in science, it is unscientific to assume that only complex brain principles can produce complex thinking and complex behavior. The philosophy of science and a philosophy of natural science implore consideration of a simple principle of binary neuroscience.

Third, current neuroscience investigations contradict the *philosophy of natural science* and the *philosophy of biology* when their investigations embrace psychiatry and its philosophy of “mind.” While science is a tool humans developed to investigate and better understand our environment, natural science and biology focus on the natural, physical (material) world. The natural sciences are generally considered “hard sciences” since they address the physical world as opposed to using science to investigate social interactions (generally considered “soft science”). The *philosophy of natural science* advocates that the environment is best understood with a singular focus on the material (physical) world apart from the spiritual, philosophical, or theological worlds. Since neurology addresses the physical world of the brain and nervous system, it is natural science; in contrast, since psychiatry addresses philosophy (a philosophy of “mind”), it is not natural science. Psychiatry and neurology may investigate broadly overlapping subjects but neurology is natural science while psychiatry is pseudo natural science by definition. Consistent with the philosophy of natural science, the *philosophy of biology* similarly advocates a singular focus on the physical world. The philosophy of biology is *biological reductionism* — that an organism is understandable in terms of its physical mechanisms. Biology is the natural science that investigates living matter (organic life) and neurology is the biological science that addresses the brain and nervous system of an organism. In contrast, psychiatry cannot be a biological science (or a natural science) since it investigates a philosophy of “mind” rather than a physical mechanism (a material entity). Regardless of substantial overlap between psychiatry
and neurology, neurology is biology and natural science while psychiatry is philosophy. Psychiatry’s investigation of a non-organic, non-physical “mental world” is pseudo biology and pseudo natural science by definition; a further discussion of modern dualism is addressed in Appendix A.

Fourth, besides contradicting science logic, the philosophy of science (all science), the philosophy of natural science, and the philosophy of biology; current neuroscience investigations also contradict the philosophy of physiology. Current theory contradicts the philosophy of physiology when addressing complex molecular neuroscience, complex cellular neuroscience and complex systems neuroscience rather than simple tissue neuroscience and simple systems neuroscience. Considering a macro-perspective of the physiology of entire nervous tissues (and their interaction) may seem confusingly abstract compared to finite or abstract research but the philosophy of physiology implores the focus. The philosophy of physiology explains organisms at different organizational levels of the body with each organizational level explaining the entire organism. Anatomy and physiology texts explain humans at different organizational levels of descending sizes and ascending complexity; they explain organisms at organizational levels of body systems, tissues, cells, and molecules. Physiology texts explain organs with body systems, explain body systems (including organs) with tissue physiology, explain tissue physiology with cellular physiology, and explain cellular physiology (theoretically) with molecular physiology. The philosophy of physiology completely explains organisms at different organizational levels and explains organs with the organizational levels of body systems (or “organ systems”) and tissues.

Physiologists investigate organisms at different organizational levels of the body and explain the function of all organs at the largest level — the level of body systems (organ systems). Consistently, physiology explains “systems neuroscience” (the brain at the organizational level of body systems) as: the brain receives information about the environment through the peripheral nervous system, processes the information, and sends related information back through the peripheral nervous system to affect behavior towards species survival. Accepted physiology theory explains systems neuroscience (the brain at the organizational level of body systems) based on simple principles; in contrast, current systems neuroscience theory seeks to explain brain functioning with complexity. Physiology investigates the human organism at different organizational levels and can explain all organs of the body at the largest organizational level of body systems.

Besides explaining all organs of the human body at the organizational level of body
systems, physiologists can also explain all organs besides the brain at the level of body tissues. All organs of the body besides the brain are explained by four kinds of whole tissues: muscle tissue, connective tissue, epithelial tissue and nervous tissue. For example, after explaining the heart at the organizational level of body systems (as a pump that shoots nourishment and draws waste), physiologists explain the function of the heart with the increased specifics of tissue physiology. Physiologists explain the heart with the interaction of (whole) tissues as: 1) muscle tissues create the general structure of a pump while flexed muscle tissues push nourishment throughout the body and pull waste, 2) nervous tissues create a periodic electric spark to flex heart muscle tissues, 3) connective tissues create valves in the pump structure to produce directional flow, and 4) epithelial tissues encase muscle tissues and create pipes to carry nourishment and waste. The organizational level of tissues completely explains all organs with a macro-perspective of tissue physiology that is more detailed than the organizational level of body systems that also completely explains organs.

Physiologists explain all organs of the body except the brain with tissue physiology (the physiology of entire tissues and their interaction) but are unable to explain any organ with a smaller, more complex organizational level. Cellular physiology explains tissue physiology that explains organs, but cellular physiology cannot skip a “generation” of information about tissues to directly inform about organs. Consistently, investigating molecular physiology to understand an organ skips two generations of information (about tissues and the cells that comprise tissues). Molecular physiology cannot yet explain any cell of the body; it is illogical to believe that it can explain a tissue, much less an organ. Investigating molecular neuroscience to understand the brain is analogous to investigating the molecular structure of steel to understand the purpose (function) of an automobile engine. Investigating molecular and cellular neurophysiology to understand behavioral neuroscience contradicts the philosophy of physiology that explains organs with tissues — the physiology of whole tissues and the physiology of their interaction.

Popular behavioral neuroscience investigations contradict the philosophy of physiology when brain research investigates complex systems neuroscience and fails to consider simple systems neuroscience. Popular neuroscience investigations similarly contradict the philosophy of physiology when investigating complex molecular neurophysiology and complex cellular neurophysiology while ignoring simple tissue neurophysiology — a macro-perspective of whole nervous tissues and their interaction.

Scientific logic dictates that the tenets of a science are the most important guidelines to follow since everything emanates from foundational principles. Unfortunately, the distinguished
endeavor to understand behavioral neuroscience is hindered by critical, long-established scientific anomalies hidden deep within accepted theory. Neuroscience investigations continue to contradict basic scientific logic and the philosophy of (general) science, a philosophy of natural science, the philosophy of biology, and the philosophy of physiology. It is illogical and unscientific for accepted neuroscience theory to assume complex brain principles and ignore magnificently simple binary science when: 1) brain principles are unknown, 2) eminent natural scientists advocate simple brain principles, and 3) neuroscientists model the brain with computers that operate through binary science. Equally important, popular behavioral neuroscience theory contradicts the philosophy of physiology while investigating ignoring the “big picture” of the physiology of whole nervous tissues and their interaction. Natural Psychology advocates that binary tissue neurophysiology explains human psychology.

Natural Psychology is based on accepted science theory and accepted empirical neuroscience; it is readily falsifiable because it makes no assumptions beyond accepted science theory and accepted empirical neuroscience. Logic and the philosophy of science, the philosophy of natural science, the philosophy of biology and the philosophy of physiology implore consideration of binary tissue neurophysiology to understand human psychology. Since neurophysiologists have a general understanding of tissue neuroanatomy and cellular neurophysiology, they have all the information necessary to understand tissue neurophysiology, the brain and human psychology.

In the grand and noble effort to understand the human brain, it is easy to “lead science” rather than “follow science.” This treatise implores the reader to suspend belief in a massive quantity of complex, ambiguous and fragmented support for cultural expectations and follow a path of science to understand human psychology. Natural Psychology is a paradigm shift that may be difficult to understand from the context of the established paradigm but it is elegant, parsimonious science. This new paradigm appeals to a reverence for truth and to understanding that (scientific) truth will greatly improve the human social condition with an exciting new age of enlightenment.
II
Thinking Theory

Consistent with scientific logic and the philosophy of science, the philosophy of natural science, the philosophy of biology and the philosophy of physiology; human psychology is explained by the empirical neuroscience of motivated-thinking. It is critically important to understand thinking theory separate from motivation theory to understand the binary neuroscience of motivated-thinking (and thereby human psychology). Basic empirical neuroscience now proves that Associationists (who founded modern psychology with Rationalists) were correct: our rationality is produced by associative thinking. In contrast to current thinking theories, associative thinking is a more basic concept of thinking wherein the thinking process is separate from the motivation that directs it. Popular thinking theory correctly identifies “connectionist neural networks” as the thinking neurophysiology of the cerebral cortex but distorts this empirical neuroscience to adapt to a theorized neo-rational mental principle. In contrast to fundamental physiology principles that implore an overview of whole nervous tissues and their interactions, the popular thinking theory of “parallel distributed processing” (PDP) of connectionist neural networks is a micro perspective. Popular PDP theory is a micro-perspective of nervous tissue physiology that theorizes about a complex neo-rational mental mechanism that processes “nodes” (units) of information or partial information “chunks.” In contrast, associative thinking is explained by a macro perspective — the general flow of neural communication through connectionist neural networks of the cerebral cortex. An overview of nervous tissue physiology explains all thinking as associative thinking including rational consciousness and thinking that is neither rational nor conscious.

Associative thinking describes the connection of simultaneously occurring sensory stimuli and ideas; each thought is the strongest association of the previous thought and sensory stimuli. Associative thinking gloriously produces rationality by associating all information pertinent to a subject. Although humans are rightly proud of their rationality, there is no science supporting a mental principle of rationality. It should be noted that theorists do not openly advocate a neo-rational mental principle because substantial thinking is accepted as irrational. Although associative thinking is accepted learning theory and memory theory (thinking for the future and about the past), it is less conspicuous when addressing the present — with cognition. It is difficult to quantify the associative thinking of normal daily life including the substantially habituated behavior that exemplifies associated thinking.
Associative thinking is most apparent through the introspection of considering the source of surprising thoughts from “out of the blue.” Unexpected thoughts that seem spontaneous are understandable as the strongest association of the previous thought or sensory stimuli (location, color, smell, person, activity, etc.). Consistently, when specific music is the background of an emotional experience, hearing the same music after an intervening period prompts strong associated memories and emotions. Exploring the source of surprising thoughts exposes a connection between thoughts that exemplifies the associative thinking underlying all thinking and behavior.

Associative thinking may appear base and mechanistic from the context of our current paradigm but is glorious in producing our rational consciousness and increasingly altruistic behavior.

In contrast to popular thinking theory, associative thinking is: 1) explained by basic empirical neurophysiology, 2) proven by behavior conditioning, 3) advocated by classical philosophers, and 4) supported by disproving a neo-rational mental principle.

First, elementary empirical neuroscience explains associative thinking as the foundation of all thinking. Consistent with physiology theory, a macro perspective (the “big picture”) of the whole nervous tissue of the cerebral cortex explains thinking — associative thinking. The entire nervous tissue of the cerebral cortex is thinking anatomy (structured for thinking) and the flow of neural communication through the cerebral cortex is thinking physiology. Associative thinking is explained by the common, general flow of neural communication through common neural networks of the nervous tissue of the cerebral cortex. The “primary” senses of touch, sight and sound are channeled through the cerebral cortex to substantially produce thinking; the “secondary” senses of taste and smell are channeled through the limbic system to affect (influence) thinking. The primary senses of touch, sight and sound create a general understanding of the environment while the secondary senses of smell and taste affect judgments about environmental information. Connectionist neural networks connect (associate) primary sensory information in the “association area” (technical terminology) of the posterior cerebral cortex and thereafter connect more complex associations (complex thoughts) in the association area of the frontal cerebral cortex. Technical neuroscience nomenclature labels half of the posterior cerebral cortex and most of the frontal cerebral cortex as “association areas”-; this label should be considered literally. The primary senses of touch, sight and sound enter the posterior cerebral cortex from different peripheral areas of the posterior lobe and are connected in the central, association area. The primary sense of touch enters the posterior lobe from the frontal
peripheral, the sense of sound enters from the lateral peripheral, and the sense of sight enters from the posterior peripheral. Connecting (associating) the primary senses of touch, sight and sound in the central posterior lobe (while influenced by the secondary senses of smell and taste) is the foundation of associative thinking. Neural information that is connected in the association area of the posterior lobe is thereafter channeled forward into the association area of the frontal lobe. More complex interconnections (associations) in the association area of the frontal lobe produces complex thoughts and complex behaviors — more complex associative thinking. Popular theory correctly identifies connectionist neural networks but seeks to adapt them to a complex neo-rational principle (while failing to consider whole tissues that explain all other organs). The connectionist neural networks of the cerebral cortex is thinking anatomy and the general flow of neural communication through the cerebral cortex is thinking physiology (thinking neurophysiology). Consistent with the fundamental principles of physiology, the tissue neurophysiology that explains associative thinking is explained by the cumulative effect of cellular neurophysiology. The tissue neurophysiology of connectionist neural networks is explained by the cumulative effect of the cellular neurophysiology of “cellular thinking” — neurons “communicating at their synapses.” Cellular neurophysiology may eventually be explained by molecular neurophysiology but molecular neurophysiology is superfluous to understanding the tissue neurophysiology that explains thinking. Consistent with physiology theory that implores a macro perspective of tissue physiology to explain an organ, the general flow of neural communication through the cerebral cortex explains thinking — associative thinking. The neuroscience of thinking is further explained in Appendix B.

Second, behavior science proves associative thinking with the empirical science of behavior conditioning as advocated by Ivan Pavlov, Edward Thorndike, John Watson and B.F. Skinner. Early behaviorists were Associationists; they advocated associative thinking for all thinking before it was relegated to learning theory and later memory theory. Pavlov was an Associationist who proved associative thinking through his research with dogs (his dogs deserve more respect and solemn appreciation for their contribution to science). Classical behavior conditioning proves that thinking is based on a mental process of association when repeatedly demonstrating a conditioned response. The repetition of stimulus/response exemplifies thinking rather than learning; it cannot exemplify repeated learning since there is no change in knowledge or behavior (the definition of learning). Classical behavior conditioning demonstrates associative thinking when a conditioned stimulus occurs immediately preceding (or simultaneously with) an unconditioned stimulus and thereby becomes demonstrably associated with it. Consistently, conditioned stimuli are generalized based on associative thinking; neutral stimuli can be
associated with conditioned stimuli for “second-order” conditioning. The empirical behavior science of behavior conditioning proves that all thinking is associative thinking including rational consciousness and “mental disorders.”

Third, associative thinking is supported by a long, storied history of philosopher advocates. Psychology was founded by Associationists (led by David Hartley, James Mill, John Stuart Mill, and Alexander Bain) who challenged Rationalists with associationism. Psychology’s founding Associationists were the legacy of seventeenth and eighteenth century classical British empiricists. Associative thinking was advocated by empiricists John Locke in his *Essay*, Bishop Berkeley in his *New Theory of Vision*, and David Hume in *An Inquiry Concerning Human Understanding*.273 Classical British empiricists revived a thinking theory of associationism from early Greek philosophers. Plato was the first to advocate associative thinking in *Phaedo*; Aristotle followed Plato with numerous discussions of associative thinking.273 Unfortunately, associative thinking failed to maintain popularity as psychology’s focus shifted from thinking theory to behavior theory and advocates failed to explain the motivation for associative thinking. Understanding the motivation for associative thinking is critically important for understanding the mental process and challenging the cultural appeal of a neo-rational mental principle.

Fourth, associative thinking is supported by the disproof of a neo-rational mental process based on a study of eye cataract patients by esteemed neurologist J.Z. Young. Young studied adult patients who had been blind since birth and were thereafter given sight with the development of eye cataract surgery in the 1930’s.15 These adults were unable to rationally interpret their new visual information; they could not understand any visual information from the context of their previously unsighted world.16 The patients struggled with the tedious process of attempting to integrate visual information into a complete world view where visual information has no relevance. As years passed, the patients remained unable to rationally interpret the most fundamental visual information; they remained unable to differentiate between a square, a triangle and a circle. Consistently, the cataract patients were unable to rationally identify the relative size of visual objects; they could not rationalize whether a yardstick was longer than a twelve-inch ruler. The answers to these simple questions were only painfully obvious for these patients upon touching the objects. Since (associative) learning is cumulative, it was far more difficult and time consuming for these adults to learn about their new visual world than for children to learn the same information. The cataract patients were documented as frustrated with their difficulty in integrating newly acquired visual information into their previously unsighted world; there was no rational connection. Other investigations of adults who gained eyesight after living blind similarly chronicle the inability to rationalize the meaning of basic visual stimuli.16
Consistently, famed neurologist Oliver Sacks described a case study of a man who gained sight after living blind: "He saw, but what he saw had no coherence...The most 'obvious' connections, usually and logically (rationally) obvious, had to be learned." The inability to rationalize visual information disproves a neo-rational mental principle.

In contrast to popular thinking theory, associative thinking is: 1) explained by elemental empirical neurophysiology, 2) proven by behavior conditioning, 3) advocated by classical philosophers, and 4) supported by disproving a neo-rational mental principle.

Human psychology is understandable through the binary science of motivated-thinking. Associative thinking explains all thinking; it not only explains cognition, rationality and consciousness; but also explains thinking that is not cognitive, rational nor conscious. Classical British empiricists exhilarated the Age of Enlightenment with associative thinking; substantially increased self-knowledge will again infuse vitality into the community. Associative thinking may initially appear base and dehumanizing but our thinking process is gloriously motivated towards rationality, self-consciousness and increasingly humanistic behavior.
III
Motivation Theory

Human psychology is understandable in terms of the binary science of motivated-thinking: the cerebral cortex is nervous tissue structured for thinking and the limbic system is nervous tissue structured for motivation. Natural psychology advocates natural science and supports its motivation theory: humans seek emotional well-being. Natural Psychology also advocates biology; consistent with a biological understanding of living organisms, the natural motivation neurophysiology of the limbic system seeks the electrical brain energy of life. Humans are sensing organisms as well as thinking organisms; humans sense strong brain energy as attractive and weak brain energy as aversive. Consistently, our natural motivation directs (associative) thinking to seek the greatest electrical brain energy of life produced by the strongest associative thought. Since lived experiences associated with neurophysiological energy during formative years are generally experiences of social support, behavior is conditioned to seek emotional well-being — social affirmation and support. Conversely, since lived experiences associated with neurophysiological deficits during formative years are generally experiences of isolation and a lack of social support, behavior is conditioned to avoid emotional suffering — social isolation and rejection. Associative thinking and common lived experiences especially during infancy explain our accepted natural science motivation to seek well-being.

Our biological motivation seeks the greatest electrical brain energy of life produced by the strongest associative thought through the cerebral cortex from either the previous thought or from sensory stimuli. Although the cerebral cortex is constantly bombarded with stimuli from the senses, seeking the energy of the strongest associative thought fosters selective attention. Unless a “train of thought” is distracted by significant sensory input, consecutive associative thoughts share substantial common neuron firings. “Long-term potentiation” (the propensity of a fired neuron cell to fire again more easily) generally promotes coherency in a train of thoughts.

The motivation for the brain to seek the energy of the strongest associative thought explains the motivation for behavior to seek emotional well-being. Behavior seeks neurophysiological energy during infancy; the experiences associated with increased neurophysiological energy during infancy are the foundation of feelings of emotional well-being. During infancy, neurophysiological energy is produced by satisfying basic physiological needs for health and survival including nourishment, hydration and rest. Infant experiences associated with increased neurophysiological energy are learned as desirable experiences; they generally teach
the desirability of a friendly environment of comforting human contact, affection and social support. As the brain learns from experience through associative thinking, it seeks emotional well-being consistent with how it sought physiological health during infancy. Conversely, infant experiences associated with physiological deficiencies from rough touch, poor nutrition, dehydration, fatigue and physical sickness are learned as undesirable. Formative experiences associated with physiological deficits teach aversion for physical trauma and a hostile environment of loneliness, abandonment and social rejection. As the brain learns from experience, it avoids physical pain and social ostracizing consistent with how it avoided physiological suffering during infancy. Humans seek emotional well-being based on learned associations with physiological energy during formative years and avoid emotional suffering based on learned associations with physiological deficits during formative years. Consistent with traditional natural science theory, our natural motivation directs behavior to seek emotional well-being.

Behavior is motivated to seek emotional well-being and avoid emotional suffering; emotions are the physical sensations of achieving or failing to achieve our natural motivation. *Humans are sensing organisms as well as thinking organisms*; humans feel happiness from happy experiences and feel sadness from sad experiences. Consistently, there are two kinds of emotions: positive emotions of well-being and negative emotions of emotional suffering. The physical sensations of emotions are difficult to understand within the context of the current paradigm that understands emotions intellectually. The warm feelings of extreme happiness are rare and more rarely recognized although meditation is often praised for promoting a physical sensation of happiness. Pain is strong motivation to avoid physical trauma and social ostracizing. Unfortunately, the aversive feelings of extreme sadness are a continual painfulness that is difficult to imagine for those who have not experienced traumas; extreme sadness is pathologized.

The proposed motivation theory of seeking emotional well-being is generally consistent with most popular motivation theories except popular theory contorts to conform to a complex, neo-rational mental principle. Popular motivation theories of *instinct theory*, *drive reduction theory*, *arousal theory*, and *incentive theory* combine biological, emotional and cognitive factors in various ways to support the popular psychology/psychiatry paradigm. The fact that none of these popular motivation theories are comprehensive should discount the specific value of each. The *drive reduction theory* has the most truth since it is based on our accepted natural science motivation of a “biological requirement for well-being.” The *Cannon-Bard theory* of emotions supports the motivation of seeking well-being while focusing on the activation of the endocrine
system. There is also some truth to the *somatic theory* of emotions whereby physical responses foster associated emotions (consistent with associative thinking). Abraham Maslow proposed a classic motivation theory of seeking *self-actualization* but this motivation is relatively specific to western cultures; it excludes the eastern cultural motivation of generally seeking *collectivism*. “Seeking well-being” is a more fundamental explanation of motivation; it explains the motivation for both eastern and western cultures.

Our natural motivation directs associative thinking to seek the strongest thought and directs behavior to seek well-being with emotions that are feelings — physical sensations.

Our biological motivation to seek electrical brain energy of life and our natural science motivation to seek emotional well-being is further explained by: 1) empirical neuroscience, 2) empirical behavior science, and 3) evolutionary theory.

First, consistent with how physiologists explain all other organs of the body with whole tissue physiology, our natural motivation is explained by *whole tissue neurophysiology*. The role of the limbic system in human motivation is generally accepted but theorists erroneously attempt to contort motivation theory into the context of the popular psychology paradigm. The nervous tissues of the limbic system (the interior of the forebrain) are the anatomy of motivation and their function is motivation neurophysiology. The limbic system is comprised of two dead-end structures of nervous tissues with two different motivation functions. First, the dead-end structure of the thalamus and the hypothalamus manage the endocrine system that motivates behavior as well as directs body operation with hormones. The endocrine system rewards behaviors and experiences associated with well-being with hormones like endorphins that the brain senses as desirable. The endocrine system also motivates behavior to avoid behaviors and experiences associated with distressful behaviors and experiences with stress hormones like epinephrine that accelerate brain operations for species survival but are sensed as aversive. Second, the dead-end structures of the hippocampus and amygdala stagnate the flow of neural communication and thereby make these nervous tissues especially sensitive to their levels of neurophysiological energy. The stagnating structure of the nervous tissues of the hippocampus and amygdala promote a sensitivity to the cumulative, general neurophysiological energy level of brain — of an organism’s life energy.

Consistent with physiology theory, neurophysiological motivation at the tissue level is explained by the cumulative effect of neurophysiological motivation at the cellular level — “cellular motivation.” The motivation for the hippocampus and amygdala to seek the greatest energy of life is explained by the cumulative effect of neuron cell motivation. The motivation for the
hippocampus and amygdala to seek energy is explained by the cumulative effect of neuron cell motivation to seek energy (and avoid a lack of energy). Neuronal motivation is explained by the unique ability of the neuron cell to sense its physical condition and to seek cellular health. Neuron cells are sensitive but the neurons of the hippocampus and amygdala are especially sensitive based on the dead-end structure of this nervous tissue. It is widely accepted that neuron cells are motivated to seek homeostasis — a resting potential; homeostasis is a balanced, positive physical cell state without physical cell deficits. However, if neuron cells only sought homeostasis, humans would seek inactivity and sleep; neuron cells also seek the “energy of life” — the electrical spark of an action potential. Neuron cells seek the energy of electrical firings as well as the health of a resting potential; only an imbalance between the two potentials is sensed as aversive. Consistent with physiology theory, the motivation for the nervous tissue of the limbic system to seek neurophysiological energy is explained by the cumulative effect of the neuron cell motivation to seek neurophysiological energy.

The hippocampus and amygdala are “barometers” that sense the overall neurophysiological energy of the organism; damaging them damages our motivation. Damaging the hippocampus (shaped like a ram’s horn) damages its ability to sense neurophysiological energy and thereby reduces the sensation of emotions that direct behavior. The amygdala (shaped like a bulb at the end of a tube) is more sensitive to neurophysiological energy; damage to this structure is more problematic. Damage to the amygdala nearly eliminates the sensitivity to neurophysiological energy and thereby nearly eliminates emotions — the motivation for behavior. Since people remember experiences that have importance in their lives and forget mundane experiences, damage to the hippocampus and especially to the amygdala destroys the motivation necessary to create new memories. The hippocampus and amygdala provide the motivation for behavior and for creating memories; current theory embraces complexity when theorizing about memories stored within these cells.

Second, besides empirical neurophysiology explaining motivation, behavior science evidences the motivation for behavior to seek well-being as the motivation for all conditioned behavior. “Unconditioned stimuli” that are accepted as natural motivation direct subjects to seek emotional well-being and avoid emotional suffering. Classical conditioning demonstrates behavior seeking emotional well-being with isolated motivations that are common to humans while operant conditioning attempts to utilize motivations specific to individuals. Consistently, a “positive reinforcer” is intended to describe an experience that promotes well-being while a “punishment” is intended to describe an experience that promotes distress. Since behavior seeks well-being, an “external reward” ceases to have the desired affect when it causes distressful
feelings of being manipulated. Although behaviorism theory is becoming increasingly complex\textsuperscript{272} to conform to a neo-rational mental principle, the motivation for all conditioning describes our natural motivation to seek emotional well-being.

Third, the behavior motivation to seek emotional well-being is not only explained by empirical neuroscience and explains behavior science, it also explains evolutionary theory — the motivation to seek species survival. Seeking well-being is the underlying motivation for seeking the requisites for species survival: individual survival past puberty, engaging in reproductive sexual behavior and promoting the lives of offsprings. Similarly, current evolutionary psychology theories about “social reasoning”, “probability reasoning”, “risk assessment”, “principles of generalization”, “attitudes about violence”, “attitudes about parenting decisions”, and “reasoning about groups” are all explained by the underlying motivation to seek emotional well-being. Moreover, as a function of individual experience, our natural motivation to seek well-being promotes behavior broadly adaptable to different and changing environments. Humans are sensing organisms as well as thinking organisms; emotional suffering (emotional pain) is a strong, natural motivator for behavior to seek well-being. Although the motivation to seek well-being can compromise individual physical survival under unfortunate circumstances, it fosters our evolutionary goal of seeking species survival.

Besides explaining our natural motivation to seek well-being based on associative thinking and lived experience, Natural Psychology explains behavior motivation with empirical neuroscience, empirical behavior science, and evolutionary theory.

Natural science theory has correctly advocated that human motivation seeks emotional well-being; basic logic and a new perspective of accepted neuroscience now explains our natural motivation. Empirical neuroscience explains our motivation as an integral part of the binary science of motivated-thinking; an abstract philosophy of “mind” is extraneous to understanding our motivation. Human psychology is explained by the binary neuroscience of motivated-thinking: nervous tissue structured for motivation (the limbic system) directs nervous tissue structured for thinking (the cerebral cortex) based on associative thinking (in an interactive loop). Based on cultural expectations, seeking emotional well-being may initially seem base but it is majestic how the mental process of associative-thinking promotes rational cognition, self-consciousness and increasingly altruistic behavior.
Natural Psychology explains human psychology with the binary neuroscience of motivated-thinking based on unique individual experience. Substantially common motivation neurophysiology directs substantially common thinking neurophysiology in an interactive loop while learning based on personal experience. Thinking is motivated to seek the energy of the strongest associative thought and behavior is motivated to seek well-being based on the critical importance of personal experience. Natural Psychology is a paradigm shift from assuming substantially unique neurophysiology affected by substantially common experiences to substantially common neurophysiology affected by substantially unique experiences. This is a paradigm shift that seeks suspension of disbelief in common neurophysiology to consider a new perspective based on basic empirical neuroscience. In contrast to popular theory, our common binary neurophysiology of motivated-thinking creates a substantial “blank slate” (tabula rasa) for learning from experience. Although Steven Pinker is famous for challenging the blank slate theory, he fails to consider general neurophysiological structures when he concedes that “something in the mind must be innate.” The role of individual experience in human psychology is obscured by the difficulty in understanding the wide range of personal experiences. People have little understanding of the personal histories and life circumstances of others. Current psychological theory uses the term “event” to falsely describe common experiences; this may be useful in discussing a population but is misleading in understanding individual psychology. Personal lived experience creates a subjective perspective of any event; personal experience is singular. This thesis implores suspending disbelief in common neurophysiology to consider this critically important scientific challenge to behavioral genetics. Unfortunately, understanding this critically important paradigm shift will be difficult for scholars who define themselves in terms of a substantially nativist intellect. Natural Psychology is a comprehensive, parsimonious new paradigm that explains human psychology as a majestic function of experience based on empirical science — observable, verifiable and falsifiable.

Behavior seeks well-being through associative thinking as a function of experience; to the extent that we have common experiences, we have common behaviors. Common human experiences produce common behaviors that are erroneously described as innate “instincts.” Common formative experiences motivate common behaviors falsely described as instincts: an interest in novelty, a desire to explore and manipulate objects, an impulse to play, and cognitive
skills of interpreting gestures, identifying faces and acquiring language. Similarly to common individual experiences, common cultural experiences produce common behaviors that differ between cultures as documented by cultural psychology and the sociocultural model of psychology.\textsuperscript{26,27,28,29} The different behavioral goals of individualism for western cultures and collectivism for eastern cultures are explained as a function of cultural experience. Attachment behaviors and separation anxiety also differ widely as a function of cultural experience.\textsuperscript{30} Moreover, depression varies widely as a function of cultural experience from under 3\% in some areas of Spain to 30\% in some areas of Zimbabwe.\textsuperscript{29,31,32} Besides common individual and cultural experiences producing common individual and cultural behaviors, common family experiences often produce common family behaviors that have been erroneously attributed to familial genes. Family pedigree studies cannot disentangle the difference between family experiential influences and family genetic influences.\textsuperscript{33}

Science theory and basic empirical neuroscience explain human psychology as a function of motivated thinking based on substantially unique individual experience.

Popular behavioral genetics is disproved by “schizophrenia spectrum disorder” and the laws of inheritance since it does not “breed true.”\textsuperscript{34,35} People with “schizophrenia spectrum disorder” have less than a twenty percent reproduction rate compared to the general population. Based on the laws of inheritance, if “schizophrenia” had a genetic component, it should “bred out” after a few generations. Behavior is a function of experience; behavioral genetics supports the current psychology/psychiatry paradigm without structural and functional neuroscience validity.

The classical “nature vs. nurture debate” purports to address the relative function of genetics and experience in producing behavior but there are many problems inherent in the framework of this debate. Cultural expectations (a “confirmation bias”) for both genetic and environmental causation for behavior obscure the illogic of investigating influences that affect an unknown brain process. It would be difficult to understand influences affecting a known brain process; it is infinitely more difficult to understand the influences that affect an unknown brain process.

The “nature vs. nurture debate” is also flawed because it is impossible to quantify the effect of nurturing influences on behavior; each child experiences the family nexus differently. Moreover, the “nurture” category that is intended to quantify experiences of emotional well-being is not inclusive; caregiver nurturing is not the only experience that affects emotional well-being. Although the devastating effect of a lack of caregiver nurturing is documented in studies of
abusive parenting, prison ward nurseries, and orphanages; these are not the only environmental experiences that promote emotional well-being. Besides nurturing experiences between a child and caregiver, children suffer emotionally when they witness their caregiver suffer or otherwise experience a hostile environment or hostile peer experience. It is impossible to quantify nurturing experiences and wrong to limit nurturing experiences to experiences between children and their caregivers.

The “nature vs. nurture debate” is further flawed because it is impossible to quantify genetic influences on behavior. The critical difference between the genetics of unique neurophysiology and the genetics of common neurophysiology is lost when the “nature” argument can claim both positions. Moreover, proposing a multitude of genes influencing an unknown mental process makes behavioral genetics impossible to disentangle and falsify. 33

The “nature versus nurture debate” supports cultural expectations for both genetic and environmental causation for behavior based on a strong confirmation bias obscuring scientific failings.

Linkage studies and twin studies are the two main types of false support for behavioral genetics and genetic determinism; they are supported by a strong confirmation bias, poor scientific methodology and a lack of healthy scientific skepticism. Linkage studies that attempt to link specific genes to specific behaviors regularly make the news because they support cultural expectations but the significant failure to replicate these studies is rarely editorialized. 34,35,36,37,38,39,40,41,42,43 For example, the New York Times reported different genes causing schizophrenia disorder in different studies in 1988, 1997, 2002, 2006, and 2008 but failed to editorialize these contradictions and lack of replication. 43,44 The failure to replicate studies that support behavioral genetics is a disparaging problem for many eminent geneticists. 45,46,47 Genetic causations for crime, “IQ”, “ADHD”, “bipolar disorder” and “schizophrenia spectrum disorder” have been articulately challenged. 48,49,50,51 Moreover, linkage studies fail to address the gender based nature of most “mental disorders.” 52 Some geneticists further contend that the nature of genetics itself precludes the ability to link genes to behavior. 53 The failings of linkage studies and behavioral genetics are well documented. 36,49,50, 51,54,55,56,57,58,59,60,61,62,63,64,65

Besides the numerous identified failings of linkage studies, critics fail to address how genetics are far too complex to explain the function of any organ of the body. Investigating the function of any other organ of the body based on genetic research would be considered absurdly complex and difficult. Only an embrace of neural complexity, a strong confirmation bias, and a disregard for replication could support claims of genetic causation for specific behaviors like
breakfast eating patterns, perfectionism, coffee and tea preferences, loneliness and political choices. A strong confirmation bias trumps science in linkage studies while falsifiability is never a consideration. There are an unfathomable number of assumptions that separate linkage studies of behavioral genetics from science.

Twin studies are considered stronger evidence for behavioral genetics than linkage studies but a strong confirmation bias again trumps science. A strong confirmation bias promotes a cultural fascination with coincidences among identical twins that often makes twin studies immune to standard scientific methodology. Twin studies often support cultural expectations with open-ended searches for coincidental similarities — “fishing trips”; they ignore the basic scientific methodology of stating a hypothesis and thereafter testing it. Fascinating coincidences in case studies of identical twins are embraced as legitimate scientific support for behavioral genetics while case studies are generally considered weak scientific support. Twin studies typically focus on the difference between the behavior of monozygotic twins (“identical twins” with similar genes) and dizygotic twins (“fraternal twins” with different genes) while assuming similar environments — similar experiences. Most twin studies are founded on this “equal environment assumption” (EEA) which falsely asserts that twins experience equal environments. It is wrong to conflate the environments of identical and fraternal twins; the EEA fails to adjust for common experiences from a common physical appearance, common age, and common sex. More importantly, it is wrong to believe that the relationship between identical twins and fraternal twins is not significantly different and does not create a significantly different environment for them. Twins are a major influence on each other; it is significant that identical twins typically expect and seek similar behavior while fraternal twins typically expect and seek dissimilar behavior. The failings of the EEA are well documented.

The largest and most comprehensive twin study supports behavioral genetics based on the scientific illegitimacy of the equal environment assumption. Hilker and his colleagues cross-referenced over 30,000 pairs of twins using the nationwide Danish Twin Register (a record of all twins born in Denmark since 1870) and the Danish Psychiatric Central Research Register. The Danish study supported behavioral genetics by comparing the different rates of “mental disorders” between identical and fraternal twins based on the false EEA. As information technologists advocate, “garbage in, garbage out.”

Fuller Torrey’s study of “schizophrenia spectrum disorder” and “bi-polar disorder” is one of the most frequently sighted “scientific” studies supporting behavioral genetics with poor scientific methodology and the false EEA. A strong confirmation bias in support of Torrey’s thesis again promotes pseudo scientific methodology; subject DSM diagnoses and subject recollections of
childhood illnesses (and behaviors) were all subjectively interpreted. Torrey's study fails the common scientific standard of a double-blind study. The summarizing philosophic narrative between genetic, virological, and developmental perspectives is pure speculation built on supposition; it does not proximate science.

Linkage studies and twin studies support behavioral genetics based on the false “equal environment assumption” and a strong confirmation bias; they lack standard scientific methodology and a healthy scientific skepticism.

"Reared-apart identical twins studies" are the hallmark of support for behavioral genetics but these rare studies are plagued by a stronger confirmation bias and a greater lack of healthy scientific skepticism. The premise is logical: since identical twins share similar genes, similar “character (behaviors) traits” or “mental disorders” of identical twins reared apart (in different environments) must be attributable to their common genes. But “the devil is in the details”; the historic importance of these rare studies promote an extreme confirmation bias that trumps the “science.” Studies of reared-apart identical twins lack the standard science methodology of double-blinded studies, acceptable sample sizes, scientific transparency and any measure of healthy scientific skepticism.

An early Danish-American adoption study of “schizophrenia spectrum disorder” was the first classic study that supports behavioral genetics with a pseudoscientific investigation of identical twins reared apart. Seymour Kety and his colleagues located biological parents of adopted children with “schizophrenia” to correlate rates between them. In contrast to the legend, this study shows no biological connection between the rates of “schizophrenia spectrum disorder” for biological parents and their adopted children. The conclusion draws support from a statistical link between half-siblings on one side of a family; this is an absurd manipulation of data from a small sampling. Only an unusually strong confirmation bias for behavioral genetics could consider such an obscure connection as scientific support. There have been numerous criticisms of the scientific failings of this frequently referenced study.

The most famous reared-apart-identical-twins study is the Minnesota Study of Twins Reared Apart. A newspaper article instigated this research; the “public interest” article described an amazing list of coincidences in the lives of reunited identical twins — the “Jim Twins.” Bouchard used the publicity of the Jim Twins as a springboard to investigate identical twins that were separated at birth; but finding identical twins separated at birth like the Jim Twins proved problematic. In contrast to the title and the legend of this critically important study, few subject twins were reared apart. Astonishingly, twins were described as “reared apart” if they
spent any part of their childhood in different homes; subject twins were not actually “reared apart” — lacking contact during formative years. Most twins had substantial contact during formative years and in adulthood before the study. The definition of “reared apart” is extremely misleading (or dishonest) if the subjects are not reared apart whereby environmental factors are not isolated as implied. As documented and thereafter discounted in the study, twins frequently lived together for years before their separation and typically reunited for years after their separation and before the research. This seems fraudulent; the common understanding of reared-apart twin research depends upon twins not having contact after birth and before the study since identical twins strongly influence each other. Our culture generally assumes common “character traits” for identical twins and identical twins generally embrace this common assumption; any contact between twins nullifies the hypothesis. Furthermore, it is unscientific for Bouchard to omit the data of numerous pairs of twins originally introduced in the study without explanation. Although the study provides details of the significant contact between twins, most information about research methodology is veiled in the anti-science of secrecy. The confirmation bias that drove the study is evidenced by the self-aggrandizing tone of the conclusion that attests to expectations of celebrity status for the research and researchers. The twins of the Minnesota Study of Twins Reared Apart were not reared apart; it is astonishing that this deception passes for science.

Studies of reared-apart identical twins are the “holy grail” of genetic research based on the logic of their premise but these studies lack validity. But these studies are pseudo science based on an unusually strong confirmation bias among both researchers and identical twins. Reared-apart identical twin studies lack the standard science methodology of double-blinded studies, acceptable sample sizes, scientific transparency, and healthy scientific skepticism.

Human psychology is explained by motivation neurophysiology directing thinking neurophysiology as a function of unique individual experience. Behavioral genetics lacks structural and functional neuroscience support while advocating for a complex, nativist neo-rational brain principle. Natural Psychology challenges the pseudoscience of behavioral genetics with a comprehensive, unified theory explained by empirical binary neuroscience. Natural Psychology similarly challenges cultural assumptions about nativist neo-rationalism and free will but this should not discount the value of its scientific truth. Humans are genetically designed to be adaptive to environmental change; society will redefine intellect to reflect the scientific truth about our mental process and the diversity of the human experience. Society will also redefine free will to reflect an increased importance of personal experience and the human ability to affect behavior by affecting experiences and the perception of those experiences. Our common
humanity is slowly producing an increasingly intellectual and moral world; an exciting new age of scientific discovery will significantly hasten this process.
Empirical neuroscience explains human psychology including rational consciousness and “mental disorders”: the brain seeks the strongest associative thought and behavior seeks well-being based on unique individual experience. Human psychology is explained by the binary neuroscience of common motivation neurophysiology directing common thinking neurophysiology as a function of unique experience. Consistent with the advocacy of Associationists who founded modern psychology with Rationalists, founding behaviorists, classical British empiricists, and ancient Greek philosophers; all thinking is associative thinking including rational consciousness and thinking that is neither rational nor conscious. Associative thinking is explained by the anatomy and physiology of connectionist neural networks of nervous tissue — of the nervous tissue of the cerebral cortex (as addressed in Chapter Two). The motivation for thinking is explained by the anatomy and physiology of the limbic system that directs (associative) thinking and behavior (as addressed in Chapter Three). Our natural motivation directs thinking to seek the strongest associative thought while learning from experience directs behavior to seek emotional well-being; this process is a function of experience (as addressed in the previous chapter). Natural Psychology explains human psychology with elegant, parsimonious binary science; it is a comprehensive new paradigm of biological and physiological psychology based on elemental neuroscience — observable, verifiable and falsifiable.

With an understanding of how motivation directs associative thinking based on personal experience, human psychology becomes logically understandable. Since behavior is a product of associative thinking, behavior patterns are substantially habitual; stronger, recognizable patterns of habitual behaviors are generally described as “personality” traits. Since behavior seeks well-being and communicating with others typically promotes well-being, humans generally seek language skills in order to communicate. Since behavior seeks emotional well-being, humans seek fair treatment for themselves and typically for others by extension (by association). More generally, since behavior seeks well-being based on experience, common experiences produce common behaviors. Behaviors common to individuals (currently attributed to “instincts”), cultures (currently described as cultural psychology) and families (currently attributed to “family pedigree”) are produced by experiences common to individuals, cultures and families respectively.

Natural Psychology is a comprehensive theory of human psychology that unifies the
essence of popular perspectives of psychology: 1) structural psychology, 2) functional psychology, 3) biological psychology, 4) physiological psychology, 5) behavioral psychology, 6) evolutionary psychology, 7) psychodynamic psychology, 8) humanistic psychology, 9) cognitive psychology, and 10) sociocultural psychology. First, this thesis is structural psychology, but instead of investigating theorized elements of consciousness, it identifies the anatomy of thinking and motivation — empirical brain structures. Natural Psychology identifies the cerebral cortex as nervous tissue structured for thinking and the limbic system as nervous tissue structured for motivation. Second, this thesis is functional psychology, but instead of investigating the theorized adaptability of an abstract philosophy of "mind", it identifies the function (neurophysiology) of thinking and motivation. Natural Psychology explains the function of the nervous tissue of the cerebral cortex as thinking neurophysiology and explains the function of the nervous tissue of the limbic system as motivation neurophysiology. Third, this thesis is biological psychology, but instead of investigating obscure molecular biology, it explains psychology with empirical tissue neurobiology consistent with how physiologists explain all other organs of the body. Current biological psychology theory seeks to integrate brain biology into a philosophy of "mind"; this is pseudo biology by definition. Sociobiology makes similar abstractions from theoretical biology without reference to accepted empirical neurobiology. 

Fourth, this thesis is physiological psychology, but instead of investigating obscure cellular and molecular neurophysiology, it explains psychology with empirical tissue physiology consistent with physiology principles. Fifth, this thesis is behavioral psychology, but instead of contorting behavior science to conform to complex neo-rational mental principles, it explains all behavior as conditioned through associative thinking. Pavlov and Skinner were Associationists; behavior science has lost its mooring since abandoning its breakthrough thinking theory. Sixth, this thesis is evolutionary psychology, but instead of theorizing about the adaptability of a philosophy of "mind", it explains our adaptability to varying and changing environments. Since behavior seeks well-being as a function of environmental experience, Natural Psychology explains the adaptability of human nature to environmental change. Seventh, this thesis is psychodynamic psychology while advocating that traumatic experiences are often unavailable for recall and that the memory of traumatic experiences is often retrievable through techniques based on associative thinking. Psychodynamic "states of consciousness" and the impact of traumatic experiences on memory are explained further in Appendix C. Eighth, this thesis is humanistic psychology while explaining our common humanity and how it fosters an increasingly humanistic world. Ninth, this thesis is cognitive psychology, but instead of theorizing about complex neo-rational information processing, it explains cognition as motivated (associative) thinking based on learning from
experience. Lastly, this thesis is sociocultural psychology, but instead of focusing solely on abstract group dynamics, it explains how cultural experiences produce cultural behaviors. Natural Psychology is a comprehensive, unified theory of structural psychology, functional psychology, biological psychology, physiological psychology, behavioral psychology, psychodynamic psychology, humanistic psychology, cognitive psychology, and sociocultural psychology.

Popular psychology theory is comprised of a massive quantity of complex, fragmented support that makes it difficult to summarize and therefore difficult to challenge. Popular theory describes an ambiguous neo-rational thinking process motivated by an ambiguous combination of virtue and self-interest based on an ambiguous combination of genetic and environmental influences. Popular psychology theory is so complex and ambiguous that the specifics of current theory vary widely between psychologists. Current psychology theory embraces complexity; it extrapolates obscure details about an unknown mental process. The arduous challenge to understand psychology continues to obscure problems with foundational principles; parsimony (the most basic principle of science) and falsifiability (the most basic principle of the philosophy of science) are not considerations.

Natural Psychology is an elegant theory of behavioral neuroscience and human psychology; it is supplemented by a unified explanation of popular psychology theories in Appendix C. In contrast to ambiguous popular theory, Natural Psychology is a parsimonious explanation of human psychology: the brain seeks the strongest associative thought and behavior seeks well-being based on personal experience. Although our motivation to seek well-being may produce some repugnant behaviors, they do not define our nature; human nature is glorious in totality. And although this comprehensive treatise may seem dehumanizing from the context of the current psychology paradigm, it describes majestic brain processes that promote advanced mental acuity and increasingly altruistic behavior. Natural Psychology is critical theory for understanding "mental disorders" and reducing emotional suffering in the community. Conversely, understanding human psychology will revolutionize every aspect of health care and thrust medical science into a new age of scientific discoveries and enlightenment. A scientific understanding of human psychology will catapult the social sciences from the "dark ages" into an egalitarian future with radically improved health care. Understanding our natural psychology will initiate an exciting new age of scientific discovery in every branch of medicine – an age of enlightenment that brings hope and energy to the community.
VI

“Mental Disorders”

The brain seeks the strongest associative thought and behavior seeks well-being based on unique personal experience; affirming experiences produce emotional well-being ("mental health") and distressful experiences produce natural emotional suffering — "mental disorders." "Mental disorders" pathologize sadness (social, economic and spiritual distress) and other natural "problems in living"; "mental illness" is a myth. Distressful experiences naturally cause anxiety, depressing experiences naturally cause depression, and sad experiences naturally cause sadness. Emotional suffering is the painful expression of sadness (anxiety and depression) from sad experiences. Emotional suffering from distressful experiences is painful and extreme emotional suffering from extremely distressful experiences is intolerably painful. When psychiatry advocates that "mental disorders" are a pathological overreaction to normal stressors, it denies the reality of traumatic experiences and traumatic environments. While traumatic experiences can happen within any environment, most traumatic experiences happen within the context of an ongoing traumatic environment. In contrast, popular theory describes "mental disorders" as a function of a "genetic predisposition" — a genetic weakness for resolving common stressors of our environment. Natural Psychology will herein challenge this long-established, false philosophical narrative (commonly described as the "medical model" but more accurately described as the "Disease Model") with a "social welfare model."

Psychiatry denies the reality of sadness (social, economic and spiritual distress) — naturally painful emotional suffering from traumatic experiences and traumatic environments (often social and economic injustice). The World Health Organization (WHO) supports psychiatry in pathologizing sadness by defining "mental health" as "emotional well-being" and thereby implying that "emotional suffering" lacks "health" — is pathological. Psychiatry focuses on client behavior as symptomatic of disease as well as the source of solutions; it does not appreciate the natural painfulness of the most distressful experiences in the community. Instead, psychiatry imagines how an intelligent, rational person would address the problem and offer advice that is often out of context and thereby often unhelpful. Unfortunately, psychiatry is less focused on the traumatic experiences that cause "mental illness" because they have little ability to directly affect its clients' social problems. There is little a medical science can do to promote solutions to social problems since it is not a social science. Psychiatrists worked hard for their successes and imagine that if others worked as hard that they would also be successful; the accepted "attribution bias" obscures the role of dumb luck. Life is hard; anyone who advocates otherwise is trying to
sell you something (or is living an exceptionally “blessed” life). Medical school culture is one of the most altruistic sub-cultures within the community; it does not reflect the majority of the subcultures in the community. While life can deal harsh blows at the “top of the heap”, life for the marginalized and disenfranchised is mostly harsh blows. Humans generally seek social status (admiration and respect); those who generally have status are pathologizing the emotional suffering of those without it. Medical school culture is radically different than the cultures of the marginalized and disenfranchised; many sub-cultures at the bottom of our “social pecking order” are extremely traumatic environments. Psychiatry continues the illogical assumption that sadness is unnatural regardless of traumatic experiences and traumatic environments — sad personal experiences and sad life circumstances. Psychiatry pathologizes painful sadness while denying traumatic environments; it provides cover for abusers while advocating Pollyanna and a fairy tale world of goodness and fairness. A world of goodness and fairness is a noble goal but it does not currently exist and advocating otherwise harms the community. This is about our humanity: whether sadness is the natural expression of sad experiences or whether sadness is a disease (or sin).

(Note: psychiatry predominately pathologizes social welfare problems but occasionally pathologizes real medical problems (physical health problems). Emotional suffering is a medical problem when caused by a biological or physiological problem from an undiagnosed (physical) disease, toxins, poor nutrition, food allergies, fatigue, etc. Consistently, homelessness generally causes emotional suffering from related poor nourishment and fatigue. Social welfare problems are also a medical problem when depressing experiences naturally cause depression that weakens the immune system, but medical science cannot assist beyond a correct diagnosis.)

In contrast to psychiatry's Disease Model of sadness (the “medical model”), Natural Psychology advocates the “Social Welfare Model”; it describes sadness as natural psychology. The Social Welfare Model explains "mental disorders" as natural emotional suffering from distressful personal experience or behaviors that express the sadness. An aversion to distressful experiences is learned during infancy through their association with physiological deficits; experiences of loneliness, abandonment and social rejection are emotionally painful associations of physiological deficits. Anxiety is the feeling of mental distress — emotional suffering; it is the physical sensation of negative emotions directly related to distressful experiences. The negative sensations of anxiety are directly related to the distressfulness of experiences; pain is strong motivation for behavior to reduce extremely distressful experiences. The brain perceives emotional pain similar to physical pain; extreme emotional pain is perceived similar to extreme physical pain that does not subside. It is also unfortunate that emotional sufferers often have few
viable options for reducing their anxiety and achieving emotional well-being; hopelessness about achieving emotional well-being and reducing the pain of anxiety produces depression. When solutions to distressful experiences seem distant or hopeless, depression minimally reduces anxiety by slowing or reducing painful thinking. Depression describes a broad range of expressions of hopelessness from a common reaction to minor relationship problems to the hopelessness expressed in "catatonic schizophrenia." Distressful experiences cause painful anxiety that is addressed by depression when solutions seem distant. Consistently, anxiety and depression are the two most common psychological complaints and often occur simultaneously.94,95 Besides pathologizing the natural sadness expressed in anxiety and depression, psychiatry also pathologizes non-conforming, non-productive and/or disruptive behaviors. While many of these behaviors are merely "eccentric", most describe counterproductive coping styles that typically seek short-term relief of emotional suffering at the expense of long-term gain. Emotional sufferers often seek (minimal) relief from their painful suffering through coping behaviors psychiatry deems "disabling" — counterproductive. Broadly construed, most counterproductive coping styles are understandable as compulsions — behaviors associated with well-being (from unique individual experience) that become problematic.101 Compulsions describe an infinite number of behaviors that are strongly associated with emotional well-being from personal experience and thereafter become problematic based on the intensity and/or frequency. Understanding compulsions as behaviors associated with emotional well-being is obscured by the difficulty of understanding the wide range of personal experience. Even compulsive self-harm is understandable as promoting a minimal increase in emotional well-being from "adverse childhood experiences" (ACE) that associate social support with injury. Psychiatry harms the community by denying the brutal reality of traumas and the traumatic environments of the less fortunate. Psychiatry reflects the altruistic culture of medical schools rather than the broader culture; consistently, psychiatry advocates Pollyanna and a fairy tale world of goodness and fairness.

Emotional suffering is a natural expression of distressful, traumatic experiences; natural catastrophes and human cruelty document this expression of our humanity.102,103 "Post-traumatic stress disorder" pathologizes emotional suffering from traumatic experiences; it supports existing social structures by implying that traumatic experiences are within the context of an otherwise friendly and supportive environment. In contrast to the implications of psychiatry theory, most traumatic experiences are within the context of a traumatic environment. From the perspective of the benevolent culture of medical schools, it can be difficult to understand some of the less civil environments in the community (or even behind some pretty picket fences). One’s own life
experiences can be difficult to understand; it is infinitely more difficult to understand the personal history and life circumstances of others. Moreover, emotional suffering can cause related (physical) health problems (including sleep deprivation) that exasperate emotional suffering. Emotional suffering is not an “overreaction to normal stressors”; it is directly proportionate to the distressfulness of personal histories and personal life circumstances. Painful sadness is not a disease; all emotions are natural expressions of lived experience.

Psychiatry generally discounts the painfulness of personal traumas and denies the distressfulness of traumatic environments especially at the bottom of our “social pecking order.” Psychiatry harms clients when focusing on their behaviors and ignoring the context of their subjective histories and ongoing traumatic environments. Psychiatry denies trauma from child abuse, bullying, the “sorrow of war”, discrimination, poverty and sexual assault when advocating “recovery” without resolving traumatic injustice. Psychiatry is trauma denial when advocating that traumas are medical problems rather than social welfare problems and obscures social welfare remedies. In reality, people are often self-centered and hurtful; this creates traumatic environments that are difficult to understand from the benevolent cultural atmosphere of medical schools. Medical school environments and the environments of the marginalized and disenfranchised are radically different; life is often brutal at the bottom of our social pecking order. Psychiatry denies our humanity: distressful experiences naturally cause anxiety, depressing experiences naturally cause depression, and sad experiences naturally cause sadness.

Psychology supports psychiatry’s false “medical model” of sadness with the vulnerability-stress model (the diathesis-stress model) of “mental disorders.” This popular psychology model advocates that “mental disorders” are produced by a combination of social and genetic factors; it describes stressors in the environment affecting a nativist predisposition to have psychological problems. Consistently, the popular bio-psycho-social model of mental distress contends that “mental disorders” are caused by a combination of biological, psychological and social-environmental factors. The bio-psycho-social model appears inclusive but the pseudo biology of psychiatry trumps the “soft” science of psychology and its social-environmental factors. Popular psychology theory ultimately defers its most fundamental theory to the faux biology of psychiatry and its pathologizing of sadness (natural social, economic and/or spiritual distress).

Psychiatry’s “medical model” (“Disease Model”) pathologizes natural emotions and natural behaviors through “reification” — considering abstract, philosophical concepts to be concrete, physical entities. The myth of “mental illness” considers the philosophy of “mind” to have (physical) health problems through the “fallacy of reification.” The fallacy of reification is also known as the “fallacy of abstraction”, the “fallacy of false concreteness”, the “fallacy of misplaced
concreteness”, and the “fallacy of false certainty.”

The fallacy of reification is the illogic (pseudo science) of giving physical qualities to philosophical, abstract concepts — the fallacy of treating a hypothetical construct as a concrete entity. Psychiatry reifies natural emotional suffering and natural problems in living into physical entities and the subject of medical “science.” “The mind is what the brain does” is a popular adage that attempts to reify the actions of the brain into an (physical) entity separate from the brain. The Disease Model reifies natural emotional suffering and other natural problems in living into mythical diseases that are defined and explained only by their symptoms. In contrast to neurology that addresses the physical brain, psychiatry addresses a reified philosophy of “mind.” A philosophy cannot metamorphose into a science; psychiatry is philosophy, a pseudo science and a pseudo medical science. Psychiatry’s Disease Model of sadness is based on reification and circular reasoning.

Psychiatry’s “medical model” of “mental disorders” is a classical paradigm wherein terms have definitions and connotations that support its erroneous philosophical narrative. The terms “mental disorder”, “psychological disorder”, “mental illness”, “mental disease”, “madness”, “insanity”, and “abnormal psychology” are misnomers; they erroneously connote brain malfunctioning. Consistently, “maladaptive behaviors” may be maladaptive for individual survival but not for species survival; it is also a misnomer. Moreover, since psychiatry addresses philosophy (a philosophy of “mind”) and biology and physiology are medical sciences (natural sciences) that only address the physical (material) world, psychiatry is biological and physiological (medical) pseudo science by definition. Psychiatry pathologizes sadness with the myth of “mental illness.”

The Social Welfare Model advocates that the “medical model” pathologizes sadness (natural social, economic and spiritual distress) and other natural problems in living based on: 1) pseudo science, 2) discounting the distressfulness of traumatic experiences, 3) misunderstanding emotions, 4) erroneous assumptions about the mental process, 5) its status as an accredited medical science, 6) medical sounding labels, 7) theorized chemical imbalances, 8) theorized brain volume pathologies, and 9) hypothetical constructs from behavioral genetics.

First, psychiatry pathologizes natural emotional suffering based on contradictions of basic science logic and the most fundamental principle of the sciences that informs it (as explained in Chapter One). Popular neuroscience investigations are illogical when they assume complexity and fail to consider the simple principle of binary neuroscience. Popular neuroscience investigations also contradict the philosophy of (general) science and a philosophy of natural science when assuming complex principles and failing to consider simple binary neuroscience.
Moreover, popular neuroscience investigations contradict the philosophy of natural science and the philosophy of biology when they drift from a singular focus on the physical (material) world and address a philosophy of “mind.” Furthermore, popular neuroscience investigations contradict the philosophy of physiology when they fail to consider tissue neurophysiology — an overview (the “big picture”) of organ nervous tissue physiology. Current neuroscience investigations lack validity (scientific truth) by contradicting basic logic and the philosophy of the sciences that informs them; this is a critical failing since all science emanates from foundational principles. Psychiatry advocates a philosophical narrative; it is not science — not medical science.

Second, psychiatry pathologizes natural emotional suffering based on generally discounting the distressfulness of traumatic experiences including those at the bottom of “our social pecking order.” Psychiatry denies our humanity when it advocates that it is unnatural to feel distress from personally distressful experiences and from the cruel and unjust experiences of the marginalized and disenfranchised. Psychiatry advocates constant cheerfulness; it pathologizes natural emotional suffering and denies the distressful environments that produce it. Psychiatry “gaslights” emotional sufferers by advocating that they are overreacting to “normal stressors” or stressful “events.” Describing stressors as “events” denies the subjectivity of distressful experiences and the reality of the personal histories of some of the least fortunate members of the community.

Third, psychiatry pathologizes natural emotional suffering based on failing to understand emotions as physical feelings directly related to experience. Euro-American culture erroneously considers emotions to be intellectual judgments about experiences (intellectually understood) rather than physical sensations directly related to experiences (physically understood). Consistently, there are two kinds of emotions: positive feelings of emotional well-being related to happy experiences and negative feelings of emotional suffering (distress) related to sad experiences. Happiness from positive experiences of emotional well-being feels good and sadness from negative experiences of emotional suffering feels bad. Distressful experiences cause emotional suffering that is directly related to the degree of distressfulness of the experiences; extremely distressful experiences naturally cause extremely painful emotional suffering — emotional pain. Emotional pain and physical pain are sensed similarly by the brain based on associative thinking; they are both learned associations of physiological deficits. The painfullness of extreme emotional suffering can be constant, commanding and excruciating (similar to extended physical torture). Emotional pain is pain; emotional pain can be as strong as the extreme physical pain caused by a police Taser and thereby nullify its intended effect. The main difference between the brain’s perception of physical pain and emotional pain is that
emotional pain is without an easily identifiable source; it also subsides substantially slower. It is unfortunate for emotional sufferers that popular theory intellectualizes emotions because their painfulness is vastly unappreciated. Consistently, it is also unfortunate that emotional pain can be overwhelming and occasionally promote suicide when other options for relief seem distant or hopeless. In contrast to popular theory, emotions are physical sensations directly related to experiences of personal happiness and (painful) sadness.

Fourth, psychiatry pathologizes natural emotional suffering based on the erroneous assumption that our mental process is produced by a complex, neo-rational thinking principle rather than associative thinking. Current theory is supported by focusing on the irrationality of how the pain of emotional suffering is typically presented “irrationally.” Human rationality is a source of species’ pride regardless of substantial prosocial behavior being irrational and accepted as such. It is illogical that irrational thoughts and behaviors are a widely accepted part of “normal” psychology but are a defining feature of “abnormal psychology.” Psychiatry does not acknowledge irrationality being the foundational principle of “mental disorders” because of the abundance of irrational thoughts and behaviors that are accepted in prosocial behavior. Nevertheless, psychiatry considers expressions of painful emotional suffering and other natural problems in living to be pathological based on a presentation of irrationality.

Fifth, psychiatry pathologizes natural emotional suffering based on its accreditation as a medical science; accreditation from medical schools gives false legitimacy to its “medical model” — its Disease Model. Psychiatry dominates the “mental health” industry based on its accreditation as a medical science; medical science is the Holy Grail of cultural knowledge about health. Most “mental health” professions defer their most basic theory to psychiatry based on its purported hard science of biology and physiology. But psychiatry is pseudo biology and pseudo physiology (pseudo medical science) since it does not address the physical world of natural science. Psychiatry brutalizes the community with its harmful philosophical narrative; medical schools are culpable for accrediting its toxic philosophy as science — medical science.

Sixth, psychiatry pathologizes natural emotional suffering based on medical sounding labels for DSM diagnostic categories. Popular theory typically labels categories of theorized disorders with Greek or Latin terms and thereafter uses the medical sounding terms to imply insight. For example, psychiatrists describe bedwetting as “enuresis” (a Greek term for urinating) and thereafter imply medical insight when describing bedwetting as caused by enuresis — urinating. Psychiatry uses medical sounding terms to promote its false philosophical narratives as medical problems.

Seventh, psychiatry pathologizes natural emotional suffering based on the continued
advocacy of the “chemical imbalance theory” after it has been widely discredited by eminent neuroscientists. A chemical imbalance would be the logical cause of a “mental disorder” if it was pathological but this theory has been widely rejected by the leading scientists in the field. Most leading neuroscientists now reject the chemical imbalance theory as scientifically unsupported. The chemical imbalance hypothesis is also discounted by the use of SSRE’s (selective serotonin reuptake enhancers) in France; they have the opposite effect of SSRI’s (selective serotonin reuptake inhibitors) used more broadly. Moreover, a correlation between serotonin or dopamine and a specific “mental disorder” is illogical since these neurochemicals functions too generally to produce specific behaviors. Furthermore, the Disease Model is substantially supported by correlations when it is accepted science logic that correlations do not prove causation. While neuroscientists are slowly retreating from the chemical imbalance theory, it is still widely promoted especially in support of the massive financial interests of the pharmaceutical industry. It is unethical for psychiatry to permit its legitimacy to be defended by the chemical imbalance theory after it has been generally discredited by eminent psychiatrists.

Eighth, psychiatry pathologizes natural emotional suffering based on slowly transitioning from the discredited chemical imbalance theory to the erroneous “brain volume reduction theory.” The brain volume reduction theory describes a pathological correlation between reduced brain volume and mental distress. The generally reduced brain volume of people diagnosed with “serious, chronic ‘mental disorders’” is increasingly theorized as pathological. However, correlation does not prove causation; atrophy better explains this correlation. Extreme depression and heavy sedation reduce thinking (the use of nervous tissue) and thereby causes atrophy consistent with any other underutilized tissue of the body. Depression describes slowed brain activity during periods of low motivation from hopelessness; long-term depression can reduce brain activity to nervous tissue atrophy. Similar to depression, heavy neuroleptic drug therapies also slow brain activity and cause nervous tissue atrophy. Popular psychiatry theories about brain volume reduction support cultural expectations but are without structural and functional neuroscience support.

Ninth, psychiatry pathologizes natural emotional suffering based on the support of the complex and obscure hypothetical constructs of behavioral genetics (and behavioral determinism). The recondite, obscure investigations of behavioral genetics lack structural and functional neuroscience support for psychiatry and its Disease Model. Cultural expectations and the pseudoscientific embrace of complexity drive behavioral genetics but it has not provided
empirical scientific support for any of its hypotheses (and never will). Behavioral genetics as well as psychiatry expect the emergence of scientific support for their founding principles ("fake it till ya make it!") but their founding principles remain false and scientifically unsupportable.

Psychiatry pathologizes natural emotional suffering and other natural problems in living based on: 1) pseudo science, 2) discounting the distressfulness of traumatic experiences, 3) misunderstanding emotions, 4) erroneous assumptions about the mental process, 5) its status as an accredited medical science, 6) medical sounding labels for symptom categories, 7) theorized chemical imbalances, 8) theorized brain volume pathologies, and 9) hypothetical constructs from behavioral genetics.

The American Psychiatric Association (APA) pathologizes emotional suffering and other natural problems in living (sadness) through the Diagnostic and Statistical Manual of Mental Disorders (DSM). The DSM obscures its scientific illegitimacy through obfuscating. The incoherent DSM-5 definition of a “mental disorder” exemplifies the anti-science of deception: “A mental disorder is a syndrome characterized by clinically significant disturbance in an individual's cognition, emotional regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning.” The long APA history of obfuscated doublespeak obscures the first phrase of the definition that clearly defines a “mental disorder” as a “syndrome.” Decades of muddled usage has normalized the absurdity of this definition. Since a syndrome is “a pattern of symptoms characteristic of a disease”, psychiatry defines a “mental disorder” as symptoms of a disease rather than a disease itself. Real medical sciences define diseases in terms of biological malfunctioning rather than a pattern of symptoms; patterns of symptoms cannot define a disease. Syndromes reference a pathology; they cannot define one. Defining “mental disorders” as “syndromes” makes them pathological symptoms of nothing; this is biological (medical) nonsense. The APA defines a “mental disorder” as symptoms of a disease and reifies the symptoms into a pseudo disease; this is a “social construct” based on circular reasoning. It is medical nonsense for a social judgment about symptoms to define a disease; psychiatry is an illegitimate medical science and its DSM is an illegitimate medical manual.

The APA published the first DSM in 1952 to wrestle control of psychiatric diagnoses from the military after WWII; it was based on now discredited Freudian theory. Its pseudoscientific foundation was immediately challenged by critics including Thomas Szasz; Szasz is generally credited with initiating the “antipsychiatry” movement with the publication of his landmark book, The Myth of Mental Illness. Szasz considered “mental illness” to be a metaphor since a
philosophy of “mind” cannot have physical health nor physical illness. He argued that psychiatry pathologizes natural “problems in living” as a means of social control over political dissent. In 1968, the APA published the DSM-II to deflect mounting criticism, but it failed to reduce criticism from an increasingly popular existential perspective of "mental disorders" proposed by R.D. Laing. Laing explained the emotional suffering expressed in “mental disorders” as an “existential crisis.” In 1971, the International Society for Ethical Psychiatry and Psychology was established by academics and professionals to further challenge the legitimacy of psychiatry’s Disease Model. Concurrently, pathologizing homosexuality became an increasing political problem for psychiatry; the APA voted to remove it from the DSM to reduce criticism. This was not a medical process; real diseases are not political, and accepted or rejected through voting. Nevertheless, by 1980, psychiatry’s foundation on Freudian theory was eroding its credibility so the APA published the DSM-III with a radical change in philosophy; psychiatry doubled-down on the “disease card.” Again by committee vote, the DSM-III suddenly changed most diagnoses from social problems (“neuroses”) to biological problems — medical problems. This change in philosophy was blatantly unscientific without new scientific evidence but nevertheless improved psychiatry’s credibility. The pharmaceutical industry joined psychiatry in celebrating the expanded disease narrative; it opened a whole new vista of profits for them. But the expanded Disease Model was met with a barrage of criticism for pathologizing natural emotions and behaviors, and for a manual with terrible reliability (diagnostic consistency). In 1994, the APA published the DSM-IV to deflect ongoing criticism by adding a “clinical significance” criterion in order to better rebuff critics; it thereby rejected all criticism by non-clinician a priori. But tagging non-clinician critics as ill-informed did not stem the tide of criticism. In 2000, the APA published the DSM-IV-TR to deflect the criticism from the failure of the Decade of the Brain (the 1990’s) to provide any biological support for psychiatry. The DSM-IV-TR added a five-part “axial” structure for different perspectives of “mental disorders” but the added complexity only increased validity and reliability problems; it was removed in the following edition. In 2013 the APA published the latest edition of the DSM (the DSM-5) that again redefined numerous categories to make the manual more politically correct (including what the APA labels "schizophrenia spectrum disorder" and “autism spectrum disorder”). However, the newly expanded definition of “pathological grief” is so illogical that it alone should render the new DSM invalid. Limiting “normal” grief for the death of a child or spouse to two weeks is patently absurd; the DSM blatantly lacks validity.

There are numerous other common criticisms of the failure of the DSM to be a legitimate medical manual besides its lack of validity and reliability. Common criticisms of the DSM include: 1) The DSM classifies symptoms of "mental disorders" without proposing causation or treatment;
2) The DSM pathologizes emotional suffering (natural social, economic and/or spiritual distress) and other natural problems in living while discounting or ignoring personal histories — personal life circumstances. Critics chastise psychiatry for “relegating personal histories to ‘triggers’ of an underlying genetic time bomb”; 3) The DSM discounts the more critical issue of the intensity of emotional suffering while focusing on categorizing behavior patterns; 4) The DSM discounts or ignores the powerful influence of massive pharmaceutical industry resources on psychiatry science and treatments; 5) The DSM describes symptoms of emotional suffering with ambiguous boundaries that allow wide flexibility for diagnosing while destroying reliability. The DSM diagnostic categories are unscientifically flexible so they can conform to personal histories and personal histories can be adjusted to conform to diagnostic categories. Astonishingly, general diagnostic categories are so flexible that they often include catch-all categories described as “not otherwise specified” or “other conditions that may be a focus of clinical attention”; 6) The DSM ignores how common symptoms like sleeplessness describe many diagnostic categories; this promotes added ambiguity that further erodes reliability; 7) The DSM discounts the stigmatizing affect of its psychiatric labels and the resulting harm; it ignores how psychiatric labels become self-fulfilling prophecies; and 8) the DSM ignores its substantial Euro-American cultural focus and the politics of categories that change with cultural attitudes through APA voting. The first three criticisms are critical failings; each individually should render the DSM more harmful than valuable. While these eight criticisms of the DSM are important, they pale in comparison to its lack of validity in describing "mental disorders." There are numerous other critics of the failure of the DSM to be a legitimate medical manual.

Pathologizing painful sadness (social, economic and spiritual distress) is harmful — counterproductive; it is harmful to treat natural emotions and natural behaviors as medical problems. It is unfortunate that the Disease Model dominates care for emotional suffering because it generally worsens social welfare outcomes by: 1) “gaslighting”, 2) stigmatizing, 3) promoting drug abuse, and 4) promoting coercion. First, the Disease Model worsens outcomes by gaslighting emotional sufferers; it denies the reality of painful sadness from traumatic experiences and traumatic environments. It is difficult to imagine worse “mental abuse” than convincing someone that their natural emotional suffering is instead a mythical disease. It is generally difficult to improve life circumstances under the best of conditions but becomes nearly impossible when falsely believing that natural social problems are instead medical problems. Psychiatry doubles-down on gaslighting emotional sufferers when advocating “anosognosia” —
that the refusal to accept a mythical diagnosis is an additional symptom of a medical problem. Second, the Disease Model worsens outcomes for emotional sufferers by falsely stigmatizing sufferers as having a malfunctioning brain; this is one of our society’s worse social stigmas. This erroneous stigma causes increased problems with social relationships as well as employment, child custody, insurance premiums, and control of medical and legal matters. Third, the Disease Model worsens outcomes by promoting drug abuse through mislabeling psychiatric drugs as medicines. It is unconscionable that psychiatry permits the chemical imbalance theory to promote legitimacy for its drug therapies long after eminent neuroscientists have abandoned the theory. Psychotropic drugs may have short-term value in relieving symptoms of mental distress to better address causation (especially with sleep deprivation) but long-term psychotropic drug use is generally counterproductive. Long-term psychiatric drug use causes distressful side effects, physical fatigue and a decrease in mental acuity (especially in heavier doses); these are additional obstacles to solving natural problems in living. (It should be noted that psychiatric drugs are addictive and withdrawal can be dangerous; a medical professional should be consulted before changing a drug therapy program.) Fourth, the Disease Model worsens outcomes by promoting coercion; coercive practices occasionally save lives but far more often cost lives including through suicides. Incarceration in a mental institution, coerced drugging, and coerced ECT “treatments” are extremely distressful experiences that typically cause substantial additional emotional suffering. Coercive “mental health” practices are harmful violations of the UN Universal Declaration of Human Rights, 197 the UN Convention on the Rights of Persons with Disabilities treaty, 198 and the UN Working Group on Arbitrary Detention. 199 Coercive “mental health” practices are terrifying and rightfully the subject of horror films because they are horrifying. Coercive “treatments” cause substantial harm to the community; they are the opposite of therapeutic. Psychiatry obscures potential solutions to distressful experiences and distressful life circumstances by pathologizing natural social welfare problems (natural emotions and behaviors); psychiatry harms the community with gaslighting, stigmatizing, promoting drug abuse and promoting harmful violations of human rights.

It is unfortunate for community “mental health” (the emotional well-being of the community) that the harmful Disease Model of emotional suffering is supported by substantial vested interests. The current psychology/psychiatry paradigm is supported by the vested interests of: 1) psychiatrists, 2) the pharmaceutical industry, 3) researchers and advocates employed by the pharmaceutical industry, 4) parents defensive about parental shortcomings and other abusers, 5) some “diagnosed” people, and 6) community leaders. First, the vested interests
of psychiatrists as “medical doctors” promote the Disease Model since it is standard practice for doctors to address diseases. Psychiatrists invest a medical school education and medical school debt in the “medical model”, and thereafter become heavily vested in its substantial income. Medical schools are ultimately responsible for the calamity of psychiatry by accrediting its harmful philosophy as a medical science. Psychiatry medical students invest more than others to alleviate human suffering; medical students have a right to expect a medical school education will not harm the community. Second, the vested interests of the pharmaceutical industry vigorously support the Disease Model; its enormous financial interests exude a powerful albeit often subtle influence over psychiatry. Besides advocating that emotional suffering and other natural problems in living are medical problems solvable with their drugs, the pharmaceutical industry also fosters an unattainable expectation of constant cheerfulness to promote sales. The pharmaceutical industry sells Pollyanna — that painful sadness is unnatural regardless of traumatic experiences and traumatic environments. Third, the vested interests of academics and doctors employed by the pharmaceutical industry to conduct research and market their drugs similarly support the Disease Model. Big Pharma has a bottomless pocket; it is naive to believe that anyone is impartial towards someone generously giving them money. The lesson of doctors and scientists advocating the health benefits of smoking cigarettes should be a continual reminder of the power of money to skew science. The vast financial resources of Big Pharma have even corrupted the integrity of scientific journals; it is astonishing that “scientific” journals allow Big Pharma to hide unsupportive trials and write research articles that are credited to academics and professionals. The current lack of scientific transparency in “scientific” journals is staggering and can only be attributed to financial corruption. Fourth, the vested interests of abusers support the Disease Model; it deflects criticism. The Disease Model gives cover to parents who are defensive about parental shortcomings or abusive behaviors. Parenting is one of the most important and difficult jobs in our society; it is a crime against children that parents have so few resources to assist when it is challenging. But cover for parental shortcomings is only a fraction of the cover for abusive behaviors provided by psychiatry. Abuses of all kinds and all degrees are protected by the false narrative that painful sadness (anxiety and depression) is pathological rather than a natural reaction to sad experiences (distressful and depressing experiences). Fifth, the vested interests of some “diagnosed people” support the Disease Model as a defense against responsibility for “antisocial” behaviors or accusations of character weakness (or sin). “Diagnosed people” may also receive social and/or economic support for their antidotal advocacy of the Disease Model. Sixth, most community leaders are heavily vested in the Disease Model as a defense against their greed and class privilege. It is morally
reprehensible for community leaders to delegitimize criticism of social and economic injustice and their critical lack of political transparency by advocating that natural emotional suffering is a mythical disease. The cultural narrative of psychiatry is harmful and entrenched; it is supported by a wide array of people vested in its toxic narrative or protected by it.

The lack of validity of psychiatry and its DSM-5 are increasingly challenged by the British Psychological Association, the Critical Psychiatry Network, the National Institute of Mental Health, psychiatrists at the Mad in America website, and a multitude of other eminent psychiatrists. The publication of the new DSM also initiated several books that articulately critique its scientific failings. Moreover, the British Psychological Association now advocates the challenging narrative of the Power Threat Meaning Network; it is a framework that describes emotional suffering and other natural problems in living as a natural survival mechanisms. Psychiatry’s “medical model” is losing support because it lacks scientific truth.

“Mental disorders” pathologize social welfare problems; they pathologize painful sadness — emotional suffering (social, economic and/or spiritual distress) and other natural problems in living; they delegitimize sadness in support of existing social structures. Psychiatry continues to make the illogical assumption that painful sadness is unnatural regardless of traumatic experiences and traumatic environments — regardless of distressful personal experiences and cruel, unjust life circumstances. Psychiatry does not address the reality of the lives and environments of the least fortunate in the community. All efforts to understand “mental disorders” as biological defects are doomed consistent with the failure of sequencing the human genome to discern genetic defects. The DSM may be a publication of imposing size and complexity but it is based pseudo science and circular reasoning that is obscured by obfuscated verbosity. The DSM pathologizes patterns of symptoms of emotional suffering and other natural problems in living based on cultural politics and without any biological (medical) validity. Our culture astonishingly considers stressors to be substantially common; this supports the privileges, greed and inflated self-image of community leaders. A Pollyanna World is not a real world; traumatic experiences and traumatic environments cause anxiety and depression — sadness. Gaslighting emotional sufferers by pathologizing natural sadness from distressful or depressing experiences substantially increases emotional suffering in the community.

Pathologizing painful sadness (regardless of traumatic experiences and environments) denies our humanity while serving to delegitimize criticism of social and economic injustice. Pathologizing sadness is a means of social control by delegitimizing the social and/or political suffering of the marginalized and disenfranchised. The World Health Organization supports
psychiatry in delegitimizing political dissent when defining “mental health” in terms of supporting existing social structures: “a state of well-being whereby individuals recognize their abilities, are able to cope with the normal stresses of life, work productively and fruitfully, and make a contribution to their communities.” Psychiatry is therefore understood by a growing “Antipsychiatry” movement as a secondary police force that manages politically dissenting behaviors — non-productive, non-conforming and/or disruptive behaviors. “Psychiatry is unique among the medical specialties in (having) a very active and vocal counter-movement because it causes the community substantial iatrogenic harm. It is harmful for psychiatry to pathologize natural emotional suffering and natural problems in living in support of existing social/political structures. The chorus of criticisms of psychiatry from ex-patients is increasing in size and volume because it is motivated by awakening anger from abuse — iatrogenic harm of historic proportions.

Natural Psychology’s Social Welfare Model is a parsimonious new paradigm that explains “mental disorders” with accepted science theory and accepted empirical neuroscience; a unified explanation of DSM diagnoses is provided in Appendix D. In contrast to the current psychology/psychiatry paradigm that understands emotions intellectually, emotions are physical sensations; emotional well-being feels good and emotional suffering feels bad. Extremely distressful experiences cause extreme anxiety — emotional pain similar to extreme, unrelenting physical pain. Mental distress expresses the painful anxiety of distressful experiences; when solutions to distressful experiences seem distant or hopelessness, the mental process slows (with “depression”) to reduce painful thinking. Coping behaviors often seek (short-term) relief from emotional pain at the expense of long-term solutions. Striking color images produced by the advanced technology of functional magnetic resonance imagery (fMRI) are unnecessary for understanding the empirical neuroscience that explains “mental disorders.” Understanding “mental disorders” as pathologizing social welfare problems is vitally important for improving the human social condition. Medical science and society will greatly benefit from understanding that emotional pain is the natural response to distressful experiences; this is our humanity. Medical schools are ultimately responsible for the calamity of psychiatry by accrediting (legitimizing) its philosophy of “mind” as a (medical) science in support of cultural expectations. Unfortunately, medical schools have a long, ingrained history of support for psychiatry’s social construct. It will take great courage for medical schools to accept the iatrogenic harm of psychiatry and move neurology and medical science into an entirely new level of health care. However, embracing the scientific truth over medical tradition will catapult medical science past the current medical calamity of psychiatry and into an inspiring new future of community health care.
Therapy

“Therapy” will drastically improve when “mental disorders” are understood as social welfare problems — painful sadness (natural social, economic and/or spiritual distress) and other natural “problems in living” rather than medical problems. “Mental disorders” express distressful experiences and related anxiety; consistently, they are alleviated by reducing distressful experiences and/or increasing experiences of emotional well-being. Emotional well-being is promoted by positive experiences of affirmation and support, and avoiding distressful experiences of hostile people and hostile environments. While much emotional suffering is caused by interpersonal problems, most emotional suffering is caused by traumatic environments of social and economic injustice. While most sadness is caused by social welfare problems, physical health deficits also cause sadness — social welfare problems. Traumatic experiences and/or traumatic environments naturally cause emotional suffering; sadness is aversive and extreme sadness is as painful as any physical trauma or real disease. By pathologizing painful sadness, psychiatry effectively gaslights those experiencing traumatic experiences and environments and provides cover for their abusers. Abuse victims do not feel believed in a system that supports abusers by advocating that there is a genetic component to a negative impact of abuse. In contrast to erroneous theories about “mental disorders”, it is affirming and thereby therapeutic to understand the truth about traumatic experiences and traumatic environments. Euro-American culture has a long tradition of pathologizing painful sadness; it is difficult to see the “bottom of the social pecking order” from the “top of the heap.” Life without social status is generally poorly understood by those with social status who continue the historic tradition of pathologizing the painful sadness of the less fortunate.

It is generally difficult work to counter a personal history of social welfare problems; a sense of agency and empowerment are critically important for success. Assistance with social, economic and/or spiritual distress is generally valuable when provided by supportive people who promote agency, empowerment and self-advocacy. Supportive assistance from others can provide important feedback about the environment and our relationship to it. A good counselor replicates a good friend; poorly matched counselors cannot provide acceptable care. Counselors should also be able to provide information about public assistance resources that promote (physical) health. Unfortunately, a positive relationship between a therapist and a client is difficult within the context of the erroneous psychology/psychiatry paradigm. It is difficult for a therapist to
empathize with a client’s plight and provide good counseling while erroneously believing that a client’s problems are medical rather than natural. Conversely, emotional sufferers who have experienced unusual misfortune often have difficulty accepting advice from counselors who appear lucky in life and therefore arrogant. Empathy and transparent social support are critical for a therapeutic environment; a positive relationship between client and counselor is more important than professional techniques. Understanding “mental disorders” as social welfare problems is the foundation of a radical improvement in “therapy.”

Increased social and economic justice is the best “therapy” for alleviating most “mental disorders” (social welfare problems). Full stop.

Less emphasis on social status will similarly promote better “mental health” (reduced social welfare problems) for the community. Again, full stop.

For specific traumas, popular therapies should be reevaluated from a perspective of reducing social welfare problems. There are numerous different types of therapies that address emotional suffering and other natural problems in living; some but not all have value in promoting emotional well-being. Popular therapies should be reevaluated according to their ability to promote a therapeutic increase in emotional well-being. Currently popular therapy programs include: 1) physical & health therapy, 2) counter-trauma therapy, 3) relaxation therapy, 4) relationship therapy, 5) positive thinking therapy, 6) experiential therapy, 7) spiritual and existential therapy, 8) behavior therapy, 9) occupational therapy, 10) psychoanalytic therapy, 11) Open Dialogue Therapy, 12) pharmacological therapy, 13) ECT therapy, and 14) court ordered therapy.

First, physical & health therapy correctly advocates that improving physical health promotes a related improvement in “mental health” — emotional well-being (social welfare). Physical health and fitness foster physical energy and related associations of well-being; conversely, physical sickness and fatigue express reduced brain energy that promotes emotional distress. Hence, a nutritional diet of moderate size, good hydration, plenty of restful sleep, protection from adverse weather, plenty of exercise and a physically safe environment promote emotional well-being. Conversely, nutritional deficits, food allergens and toxins, dehydration, disruptive sleep environments, exposure to the elements and inactivity promote emotional suffering. Improved (physical) health promotes improved emotional well-being.

Second, counter-trauma therapy advocates countering, neutralizing or confronting traumas to increase emotional well-being (social welfare). Counter-trauma therapy considers traumas to cause most mental distress; they are typically experiences of distressful environments
rather than distressful experiences of otherwise friendly environments. Understanding "mental disorders" as natural emotional suffering from traumatic experiences promotes therapies based on countering the traumas. Countering trauma often centers on confronting the cause of the trauma, preventing others from experiencing similar trauma, or comforting those who have experienced similar trauma. Thus a rape victim might consider advocating for offender prevention programs, campaigning for stronger laws against rape, or volunteering at a rape hotline. Consistently, a victim of “adverse childhood experiences” (ACE) might consider advocating for parenting programs, campaigning for stronger laws against child abuse, or volunteering to be a Big Brother or Big Sister. Traumatic guilt from misdeeds is reduced by actions that make a person deserving of forgiveness; assisting people hurt by a similar type of transgression through community service reduces guilt. Traumatic social and economic injustice is countered by social and political activism; community service is also valuable for more generally countering trauma.

Third, relaxation therapy (broadly construed) promotes increased social welfare (emotional well-being). Relaxation therapy is a natural form of therapy that reduces stress and increases emotional well-being; it is impossible to be emotionally agitated while physically relaxed. Relaxation reduces the energy expended for muscular movement and thereby increases neurophysiological energy levels; this increased neurological vitality is a therapeutic association of emotional well-being. Not surprisingly, different forms of relaxation therapy from hot mineral baths to meditation have been popular in different cultures for thousands of years. Broadly construed, relaxation therapy includes progressive muscle relaxation and deep breathing techniques, massages, saunas and sweat lodges, spas and hot baths, meditation, yoga and tai chi, acupuncture, and hypnosis. Relaxation therapy is frequently included in psychology texts as the main method of stress reduction but should be considered more generally therapeutic. Sleep is relaxation that similarly promotes increased emotional well-being; increased emotional well-being during sleep promotes increased comfort in addressing personal problems through dreams. Dreaming is associative thinking with looser connections from a reduced orientation to the environment; increased emotional well-being during sleep enables dreams (nightmares) to better address emotional suffering. Dreams including nightmares can be interpreted (understood) as similes and metaphors based on associative thinking. Relaxation promotes emotional well-being; relaxation therapies are naturally effective in temporarily reducing emotional suffering.

Fourth, relationship therapy promotes emotional well-being through the natural affirmation of fellowship — social relationships; social relationships can produce affirming support based on our common humanity. Collaborating with people who are confronting similar types of distressful
experiences is generally difficult and time-consuming but generally promotes an affirming, “therapeutic” natural bond. The social affirmation of positive relationships through peer groups, community service and volunteerism, school and work, recreational and political activities, and religious organizations is therapeutic. Consistent with the natural affirmation of fellowship that is considered generally therapeutic, animal companionship can also promote natural affirmation and emotional support.

Fifth, positive thinking therapies like Cognitive Behavioral Therapy promote positive thinking that promotes emotional well-being (“mental health”). Cognitive Behavioral Therapy (CBT) is currently the most popular therapeutic alternative to drug therapy and the leading advocate of positive thinking. Cognitive behavior therapy generally promotes emotional well-being with mindfulness towards a personal affirmation and gratitude for one’s blessings. Although most emotional sufferers resent the repetition of the theme of positive thinking, “counting one’s blessings” promotes emotional well-being. Consistent with the central theme of most self-help books, positive thinking promotes positive thoughts, experiences and memories; conversely, negative thinking promotes negative thoughts, experiences and memories. A positive disposition includes being kind to oneself and less self-critical of perceived shortcomings; self-acceptance is vitally important for improving emotional well-being. CBT provides valuable strategies for promoting positive thinking (including visualizing positive change) and for reducing self-defeating behavior patterns and triggers. CBT may also assist with strategies for improving social relationships (including tips on being supportive without imposing) and overcoming attachments to abusers. Narrative Therapy is also valuable positive thinking therapy; it exposes injustices underlying negative self-images in a process of “rewriting the narrative.” Consistently, social service organizations may assist with strategies to improve social and/or employment skills for increased emotional well-being. Consistent with positive thinking, there is often therapeutic value in forgiveness. Forgiving the human frailty of those who have transgressed against us reduces the satisfaction for transgressors and the harmful impact of a transgression. Forgiving doesn’t mean forgetting; painfully distressful experiences provide motivation for countering distressful experiences when properly channeled. Moreover, positive thinking is promoted by environmental associations of emotional well-being — affirming music and other entertainment, pleasant aromas and a comforting personal environment. Positive thinking therapies include: Dialectical Behavior Therapy, the Wellness Recovery Action Plan program, Peter Breggin’s Empathetic Therapy, Emotional CPR, Well-being therapy, Human Givens Therapy, Positive therapy, Humanistic Therapy, and Paul Gilbert’s Compassion Focused Therapy. Family therapy is a valuable form of positive thinking therapy for conflict resolution within families similar to Couples Therapy being
valuable for conflict resolution between partners. Consistently, Group Therapy is productive when it reduces feelings of isolation, abandonment and social rejection that are associated with emotional suffering. It is unfortunate that people generally feel isolated when suffering emotionally; this obscures the reality of multitudes of people similarly suffering. However, Group Therapy for criminal behaviors can be counterproductive; society wants some behaviors to be associated with social rejection. It is unfortunate that a natural defensiveness from traumatic environments can exasperate problems and create cycles of distressful experiences. Positive thinking therapies may be difficult for emotional sufferers to embrace since their experiences have not been positive but positive thinking generally promotes increased emotional well-being.

Sixth, experiential therapy is valuable in creating experiences that are most likely to eventually create increased emotional well-being (social welfare). Behavior habits that promote experiences of emotional well-being (happiness) include fostering personal interests and hobbies, social recreation, creative arts including dance, and time spent emerged in a comforting environment (especially a natural environment). A habit that promotes well-being often plays to personal strengths or strengthens personal weaknesses. Charitable work and work to increase personal efficacy (including peer education) may be valuable if mental distress makes fostering an enjoyable experience temporarily repugnant.

Seventh, spiritual therapies promote a comforting meaning and purpose to life that increases emotional well-being. Humanity has natural motivation and purpose in promoting species survival through improved social and political relationships and better stewardship of Mother Earth. Besides the therapeutic value of natural spiritualism, many people find therapeutic value in a philosophical purpose to life with existential therapy. More often, a theological purpose to life beyond our natural purpose (and the scope of natural science) is extremely therapeutic in promoting emotional well-being — “mental health.” Believing in a spiritual purpose to life promotes emotional well-being regardless of whether the spiritual purpose is natural, philosophical or theological.

Eighth, behavior therapy will substantially increase in value as a therapeutic tool with an understanding of associative thinking and behavior conditioning. Behavior therapies can be therapeutic in creating habits that promote emotional well-being and neutralize distressful experiences. Consistently, exposure therapy and systematic desensitization therapy are behavior therapies that reduce phobias (specific fears) by adding new associations of well-being (familiarity and harmlessness) to counter feared consequences. Thus the exposure therapy of “confrontation” and “imagination” (including virtual realities) reduce the distressfulness of a phobia by adding comforting associative thoughts to counter it. Systematic desensitization therapy is a
similar process of behavior conditioning through successive steps. Besides conditioning behavior to reduce phobias, behavior therapy can also reduce undesirable behaviors with aversion therapy — associating distressful experiences with problematic (“compulsive”) behaviors to reduce their desirability. Unfortunately, behavior conditioning is not a magic pill; it has traditionally lacked the intensity and duration necessary to counter compulsive behaviors. Behavior conditioning will increase in value as a therapeutic tool when people understand how they can condition a therapeutic improvement in their emotional well-being.

Ninth, occupational therapy is valuable in promoting better management of the personal business of life; this reduces personal problems and thereby reduce sadness — social welfare. "Mental disorders" often distracts attention from taking care of the personal business that promotes physical health and emotional well-being. Organizing and expediting personal tasks and creating a more comforting, productive environment and routine to daily life is generally therapeutic. A personal schedule should include time for creating scenarios in advance that promote better outcomes for “triggers.” For those who have been deep in the “mental health care” system, the Wellness Recovery Action Plan wisely advocates an advanced crisis plan including a legal Advanced Medical Directive. A legal Advanced Medical Directive Plan can promote an increased sense of empowerment when feeling powerless within the “system.” The Substance Abuse and Mental Health Services Administration should assist upon request.

Tenth, psychoanalytic therapy is valuable in utilizing techniques based on associative thinking to identify traumatic experiences previously unavailable for recall so they can be countered. Its false, underlying Freudian narrative is extraneous to its therapeutic value in identifying “subconscious” traumas. Art therapy, drama therapy and free-association therapy are valuable in using associative thinking to gain valuable insights into traumatic experiences. Projective tests like Rorschach tests and thematic apperception tests also use associative thinking to gain insights into the cause of emotional suffering. Similarly, dream analysis has therapeutic value when exposing hidden fears and the latent content of dreams and nightmares through the associated dream imagery of similes and metaphors. Unfortunately, psychoanalytic therapy is often more valuable in identifying the cause of emotional suffering than in resolving the issues it exposes. Actions that neutralize traumatic experiences are therapeutic; in contrast, self-absorption with personal injustices without acting to counter them is rarely therapeutic.216

Eleventh, Open Dialogue therapy is a valuable therapy model that is most consistent with understanding an emotional crisis as a natural reaction to extremely distressful experiences rather than a pathology. Classic Open Dialogue therapy provides respectful, empathetic emotional support; it promotes transparency and honesty while addressing personal problems
and options for solutions.\textsuperscript{217,218} With classic Open Dialogue, “mental health” professionals from different fields visit a person suffering an emotional crisis in their own environment and openly investigate the experiences that caused the suffering. While seeking to engage clients in addressing their emotional suffering, Open Dialogue includes family and friends; therapists understand that they are only visitors in their clients’ world. Open Dialogue seeks self-advocacy, agency and empowerment for clients; clients are encouraged to formulate and direct a therapeutic strategy. Drug therapy is discouraged, although sleep aids for mania are often prescribed for an initial five-day period. Since classical Open Dialogue therapy addresses mental distress consistent with social, economic and/or spiritual distress, it is far more successful than other therapies.\textsuperscript{219} Unfortunately, the application of Open Dialogue in the United States is less successful because it lacks cultural support and rarely addresses clients in their own environment where their problems exist.

Twelfth, pharmaceutical therapy (drug therapy) is currently the most popular form of “therapy”; it can provide some “reduction of symptoms” (short-term relief) by sedating emotions but does not address causation. Psychiatry is unethical for permitting the chemical imbalance theory to defend its legitimacy after most eminent psychiatrists have rejected it as scientifically unsupportable. Consistently, psychiatry is unethical for promoting the misconception that psychiatric drugs are medicines that treat pathology. This is a criticism of a failure to provide honest, fully-informed consent; it is not a criticism of anyone who feels that they benefit from the drugs (especially in lighter doses). Drug therapies may provide valuable sedation during an emotional crisis; emotional crises are extremely painful and can cause disorienting sleep deprivation that hinders solving real problems in living. Drugging undesirable emotions may provide temporary relief of symptoms but becomes an obstacle to solving underlying problems over time (especially in higher doses). Long-term drug therapies promote fatigue, reduced mental acuity, and distressful side-effects that hinder the solution to natural social problems. Drug therapies are generally counterproductive especially in heavier doses; cultures that promote drug therapies document worse outcomes for their communities.\textsuperscript{126} Mislabeling psychiatric drugs as medicines causes harmful drug abuse; Allen Frances who chaired the DSM-IV committee now lectures on the harm of long-term drug therapy. Unfortunately, psychiatric drugs are addictive and withdrawal can be problematic; it is wise to seek professional medical advice before discontinuing any drug program.\textsuperscript{220,221,222,223}

Thirteenth, electro-convulsive therapy (ECT) temporarily reduces symptoms of emotional suffering (sadness) with brain trauma; it does not address causation. The surge of electricity through the brain ignites a brain seizure (a myriad of electrical neuron firings) that leaves neurons
“spent” (through long-term potentiality) and thereby temporarily reduces symptoms of emotional suffering. But the physical brain trauma of seizures causes memory loss and neural damage; the electrical surge from ECT is especially damaging to the glial cells that nourish and support nerve cells. Reducing the flow of nourishment to the brain is harmful. Producing temporary emotional relief by causing brain seizures is generally counterproductive.

Fourteenth, court ordered therapy or any coerced therapy is a violation of human rights that is generally counterproductive for social welfare problems. Since “mental disorders” express natural emotional suffering (from distressful experiences), coerced “therapies” are additional distressful experiences that generally worsen social welfare outcomes. It may be difficult to witness someone in an emotional crisis but understanding "mental disorders" as a natural expression of painful sadness changes everything. Since mental distress is the natural expression of distressful experiences, there are rarely easy answers to resolving distressful experiences and the resulting human suffering. The best immediate response to mental distress is offering empathy and emotional support, and offering assistance if possible and desired. It is a calamity that emotional suffering is “treated” with coercion — terrifyingly distressful experiences. Agency and empowerment are critical for promoting emotional well-being; in contrast, coerced “treatments” are horrifying human rights violations. Coerced “treatments” often cause greater emotional suffering than the experiences that initiated the presented emotional suffering; they may occasionally save a life but the abuse more often promotes suicide. “Coercive therapy” is an oxymoron; it is rightfully the subject of horror films.

There are numerous different types of “therapies” that may be combined for a program tailored to individual needs with social welfare problems.

Understanding emotional suffering as the natural neurobiology of distressful experiences rather than a pathology will promote a significant improvement in the social welfare of the community. Consistently, varying degrees of cultural civility account for the wide difference of social welfare experienced by different cultures. Distressful experiences naturally cause anxiety, depressing experiences naturally cause depression, and sad experiences naturally cause sadness. Popular theory intellectualizes emotions rather than understanding them as physical feelings; it fails to understand emotions as natural physical sensations directly related to experiences of emotional well-being or emotional suffering. Popular theory fails to understand painful sadness as the natural reaction to (and expression of) sad experiences and fails to understand emotional suffering (sadness) as painful as physical trauma. Popular theory supports existing social institutions by pathologizing sadness and thereby delegitimizing social and political
dissent. The community is harmed by pathologizing social welfare problems and by “treating” them (sadness) with drugs and coercion.

The emotional well-being of the community (community “mental health”) will improve substantially with increased social and economic justice — with a more supportive, respectful, charitable social environment of fellowship that reflects our common humanity. Humans are naturally resourceful and adaptive; understanding all emotions as natural is therefore “therapeutic.” For individuals as well as the community, emotional suffering is predominately caused by social and economic injustice and “cured” by social and economic justice. Fighting for justice is often the best community “therapy.” For individual therapy, agency, empowerment and self-advocacy are vital for solving the real problems in living that cause emotional suffering. Family, friends and counselors can be therapeutic when providing empathetic support that promotes agency, empowerment and self-advocacy (unless they are the problem). Supportive assistance can provide helpful empathy for injustice, access to desired resources, insight into the causation of suffering, and occasionally valuable assistance with strategies for promoting increased social and economic justice. The Social Welfare Model describes sadness is the natural expression of sad experiences; it will soon be considered astonishing that sadness was ever considered a disease.

Emotional sufferers should be mindful that humans have intrinsic value and a human right to emotional well-being as advocated by the UN Commission on Human Rights. Autocrats and other abusers thrive in darkness; self-knowledge will shine light into the dark recesses of our social fabric and expose massive hidden abuse. Humans are vulnerable individuals but strong and powerful communities; there is strength in numbers. Understanding human psychology will provide an opportunity for all to join the vanguard of the movement towards an exciting new egalitarian future together. Together we will forge a bright, increasingly just future; there is always hope for improved emotional well-being (“mental health”) because “the only constant in life is change.”

(Note: Unified Alternative Therapies is a free, comprehensive therapy program that unifies the different types of alternative therapies into a single program adaptive to individual needs.)
VIII
Conclusion

Natural Psychology explains human psychology with an elegant, parsimonious new paradigm based on accepted science theory and accepted empirical neuroscience: the mental process seeks the strongest associative thought and behavior seeks well-being as a function of unique individual experience. Although associative thinking has been advocated intermittently throughout history, it has been difficult to understand without understanding the motivation that directs it. Natural Psychology now explains human psychology with the binary science of motivated-thinking: nervous tissue structured for motivation directs nervous tissue structured for thinking as a function of experience. The binary science of motivated (associative) thinking explains all thinking including rational cognition and “mental disorders.” Distressful experiences naturally cause anxiety, depressing experiences naturally cause depression, and sad experiences naturally cause sadness. In contrast to popular theory that pathologizes painful sadness, sadness is the natural reaction to sad experiences (distressful and/or depressing experiences); this is our humanity. “Mental disorders” express natural, painful sadness (the emotional suffering of social, economic and/or spiritual distress) and other natural “problems in living.” Psychiatry harms the community by pathologizing sadness with its Disease Model regardless of sad experiences — traumatic experiences and traumatic environments. Psychiatry has a long cultural tradition of pathologizing painful sadness but medical schools are ultimately responsible for the calamity by accrediting and thereby legitimizing its harmful philosophy as medical science.

Humans are sensing organisms as well as thinking organisms; emotions are “feelings” — physical sensations directly related to experiences of emotional well-being and emotional suffering. Consistently, there are two types of emotions: happiness expresses the natural response to happy experiences of emotional well-being and sadness expresses the natural response to sad experiences of emotional suffering. Behavior learns to seek emotional well-being from experiences associated with physiological energy during infancy and learns to avoid emotional suffering from experiences associated with physiological energy deficits. Emotional pain and physical pain are sensed similarly; extreme emotional suffering is as painful as any real (physical) disease. Emotional trauma is sensed similar to physical trauma except that no one is expected to act “normal” during physical trauma.

The current psychology/psychiatry paradigm continues to contradict scientific logic and the most fundamental principles of the sciences that inform it. Popular psychology/psychiatry theory is illogical in assuming complex brain principles while brain functions are unknown; full stop.
Moreover, the current paradigm is similarly illogical in assuming complex brain principles while
modeling the brain with computers that operate through simple binary science; again, full stop.
Science logic implores consideration of the simple binary science of motivated-thinking. Besides
contradictions of basic science logic, the current psychology/psychiatry paradigm also contradicts
the most basic principle of every science that informs it: 1) general science, 2) natural science, 3)
biology, and 4) physiology. The popular psychiatry paradigm: 1) fails to consider parsimony and
falsifiability in contrast to the philosophy of science, 2) fails to address the physical (material)
world and simple principles of human nature in contrast to two accepted principles of natural
science, 3) addresses philosophy (a philosophy of “mind”) in contrast to the philosophy of biology,
and 4) fails to consider an overview (the “big picture”) of tissue physiology in contrast to the
philosophy of physiology. Natural Psychology is a radically different new perspective of accepted
science theory and empirical neuroscience that solves the scientific anomalies of the current
psychology/psychiatry paradigm. First, in contrast to popular theory, Natural Psychology is
consistent with the philosophy of science that seeks parsimony — fewer assumptions; it makes
no assumptions (it is based on accepted science principles and accepted empirical
neuroscience). Natural Psychology is further consistent with the philosophy of science by
falsifying its thesis: it is disprovable by disproving referenced science principles or referenced
empirical neuroscience. Second, in contrast to popular theory, Natural Psychology is consistent
with accepted natural science principles; it only addresses the physical (material) world without
reference to the “mental world” — a philosophy of “mind.” Moreover, Natural Psychology is
consistent with human nature as advocated by our most eminent natural scientists who contend
that nature is based on simple principles hidden beneath an appearance of complexity.
Furthermore, Natural Psychology is natural science by explaining evolutionary theory; seeking
well-being based on lived experience promotes species survival in a manner completely
adaptable to different and changing environments. Third, in contrast to popular theory, Natural
Psychology is consistent with the philosophy of biology (biological reductionism) that contends
that an organism is understandable through its physical mechanisms. Biology is a natural
science that only addresses the physical world of the brain; thus neurology is biology while
psychiatry is pseudo biology by definition. Fourth, in contrast to popular theory, Natural
Psychology is consistent with the philosophy of physiology that explains all other organs of the
body with an overview of whole tissue physiology and the interaction of whole tissues. The tissue
neurophysiology of the general flow of neural communication through the cerebral cortex explains
associative thinking and the stagnated flow of neural communication through the limbic system
explains motivation. The most fundamental principles of the sciences that inform the current
psychology/psychiatry paradigm implore consideration of the simple binary science of motivated-thinking.

Natural Psychology is a comprehensive new paradigm; it unifies the basic principles of the five most popular theories of human psychology: 1) structural psychology, 2) functional psychology, 3) psychoanalytic psychology, 4) behavioral psychology, and 5) humanistic psychology. First, this thesis is structural psychology; it explains thinking and behavior in terms of the anatomy of the cerebral cortex and the limbic system. The cerebral cortex is the anatomy (structure) of thinking nervous tissue and the limbic system is the anatomy (structure) of motivating nervous tissue. Second, this thesis is functional psychology; it explains human psychology in terms of the function of motivation neurophysiology directing thinking neurophysiology in an interactive loop (of learning) based on individual experience. Third, this thesis is psychoanalytical psychology when advocating that traumatic experiences are often unavailable for recall and that associative thinking can assist the recall of traumatic experiences. Fourth, this thesis is behavioral psychology; it explains behavior conditioning as a microcosm of our mental process and promotes therapy based on conditioning experiences that neutralize emotional suffering and promote emotional well-being. Fifth, this thesis is humanistic psychology in explaining our common humanity (common neurophysiology) and how it increasingly fosters cooperation and altruism. Natural Psychology is a unified theory of structural psychology, functional psychology, psychoanalytic psychology, behavioral psychology and humanistic psychology.

Natural Psychology is an elegant, parsimonious new paradigm of human psychology based on the binary science of motivated-thinking as a function of personal experience. Natural Psychology explains human psychology (thinking and behavior); thinking seeks the strongest associative thought and behavior seeks well-being based on lived experience. “Mental disorders” pathologize painful sadness (emotional suffering) and other natural problems in living; it provides cover for a broad range of social abuses. Consistently, “mental health” (emotional well-being) improves by increasing affirming, supportive experiences and decreasing distressful experiences; community “mental health” improves with more social and economic justice. Natural Psychology explains pain as an association of fear; understanding pain will promote a cornucopia of medical science advances in understanding and treating a wide range of maladies.

There is natural grandeur in our simple, majestic mental process; our brains are naturally programmed to solve our problems. Humans are engaged in a social and political struggle for more social and economic justice to challenge greed, elitism and class privilege, and for better stewardship of Mother Earth. Societies will not abandon the concepts of “free will” and “individual
responsibility” but instead will integrate these concepts into a new social fabric based on more truth and honesty. Separate from our social fabric, humans will naturally seek natural, philosophical and theological explanations of free will and individual responsibility. Hard (medical) science addresses the physical world; medical schools must recommit to science and neurology and a future where science is disconnected from theology. The truth about human psychology and pain will initiate an exciting new age of scientific discovery in every branch of medicine; the implications for improving health care are limitless. Understanding human psychology will revolutionize our social institutions as well as our health care. The community will build more impartial and transparent judicial systems and social structures that provide more opportunity for all to flourish with autonomy. Our confidence is rightly placed in transparent social structures created by the community because united we stand strong and power corrupts. Self-knowledge will energize an exciting new era of intellectual and moral enlightenment, increased comfort in our unique individuality and common humanity, and a radical improvement in the human social condition.
Appendix A

Neo-Dualism and Human Psychology

Natural Psychology explains human psychology with true science separate from theology and philosophy; it challenges the philosophical neo-dualism of the popular psychology/psychiatry paradigm. Classical dualism advocated that a theological soul (distinct from the brain) directed behavior; neo-dualism advocates a philosophical “mind” (distinct from the brain) directs behavior. The popular "bio-psycho-social" theory of psychology advocates the dualism of a philosophical "mind" that mediates between brain biology and social (environmental) experience. An abstract “mind” is a widely accepted “social construct”; it is philosophy rather than science. Cultural expectations promote the reification of a philosophy of “mind” into a physical entity and a subject of “scientific” investigation but this is not real science. A philosophical concept of “mind” cannot metamorphose into a physical entity and subject of “hard science” — natural science (medical science). Although classical dualism is theology and neo-dualism is (theological) philosophy, both are a theological vilification of human nature.

Popular psychology/psychiatry theory generally seeks to distance itself from evolutionary theory based on a vilified perspective of human nature as primitive and base. It should be an obvious negative bias against human nature to ascribe philosophical (or often theological) origins to socially desirable behaviors while ascribing natural origins (as primitive) to socially undesirable behaviors. Current natural science theory vilifies nature with a perspective of nature as “red in tooth and claw.” Consistently, the cover of The Origin of Species published by Bantam Books in 1999 resembled a painting of hell by Hieronymus Bosch. Consistent with the vilification of human nature, current evolutionary psychology theory redefines altruism as non-altruistic — as promoting the selfish self-interest of procreation or “reciprocal positive returns.” The current vilification of human nature is consistent with a history of evolutionary theory being co-opted to support unconscionable theories of social exploitation including social Darwinism, eugenics and forced sterilization. The unscientific vilification of human nature is a fundamental anomaly of popular psychology theory; it is wrong to consider human nature as only negative, base, selfish and antisocial.

Evolutionary psychology, sociobiology and human behavioral ecology erroneously seek to explain the culturally accepted philosophy of “mind” with evolutionary theory. Evolutionary psychology leads this abomination of natural science theory with its complex, abstract theory. Evolutionary psychology supports the cultural vilification of human nature by simply identifying...
behaviors it considers primitive (undesirable behaviors) and tagging them as human nature. Evolutionary psychology deviates from evolutionary theory and logic as it conflates our natural motivation to seek species survival with a motivation for individual survival, cell survival, and even gene survival. Moreover, evolutionary psychology theory is disconnected from empirical neuroscience. Sociobiology also makes abstractions from natural science theory without reference to accepted empirical neurobiology. Evolutionary psychology, sociobiology and human behavioral ecology make innumerable assumptions in their efforts to integrate a philosophy of “mind” into biology and natural science theory; this makes their theories non-falsifiable pseudo science.

Neo-dualism often describes psychological factors as distinct from biological factors with the analogy of the difference between computer software and computer hardware, but the analogy is ill-conceived. This analogy ignores the fundamental principle of computers operating through binary science and instead focuses on details of computer production. Besides ignoring binary science, there are numerous other fallacies in how AI currently models the brain with computers. First, brains learn (by growing neural connections) while computers are externally programmed. Second, the brain is malleable, growing and changing while computers are fixed systems. Third, neural connections vary widely with a variety of neurotransmitters while computers have a single switching mechanism. Fourth, neural circuits of the brain work in parallel while computer circuits work serially (inline). Lastly, computer software/hardware has no direct relationship with known brain anatomy — especially the difference between the nervous tissue of the cerebral cortex and limbic system. There are numerous problems with how neuroscientists currently model the brain with computers but the biggest problem is ignoring its simple binary operating principle.

In contrast to the current vilification of human nature, Charles Darwin describes all behavior as human nature in The Descent of Man; Darwin was a self-described naturalist who embraced nature. Although Darwin advocated that the fittest will survive and pass along their genes, he did not describe the fittest as the most aggressive and brutal. Darwin advocated for the value of altruism and cooperation for species survival and especially alluded to the value of cooperation for homo sapiens. Eminent Evolutionary Biologist E.O. Wilson is famous for his advocacy that human nature is based strongly on cooperation. Consistent with Darwin and Wilson, eminent naturalist Stephen Gould describes all human behavior as natural in The Mismeasure of Man.

Natural Psychology challenges the legitimacy of psychiatry and its philosophy of “mind”; this philosophical neo-dualism is pseudo (medical) science by definition since it does not address
the natural, physical (material) world. Vilifying human nature is truth denial; it is part of our primitive past. In contrast, Natural Psychology explains human psychology as human nature based on basic empirical neuroscience. Although significant behavior is repugnant and reprehensible, it does not define human nature or the human capacity for fairness and justice. Human nature is glorious in totality; our common humanity naturally promotes increasing altruism. Natural Psychology is a comprehensive theory of human psychology based on accepted science theory and empirical neuroscience; in contrast to popular theory, it advocates science void of theology. The neo-dualism of the “mind” is superfluous philosophy for understanding human psychology. However, Natural Psychology is a natural science explanation of human psychology; it does not address a theological or philosophical understanding of human psychology beyond science.
Appendix B
The Neuroscience of Thinking

Consistent with our physiological understanding of all other organs of the body, the brain and its function are explained by the physiology of body systems and nervous tissues. In terms of body systems, physiology describes thinking as the brain processing sensory information about the environment and sending related information to affect behavior towards species survival. In terms of nervous tissues, the nervous tissue of the cerebral cortex (the exterior of the forebrain) is structured for thinking and the general flow of neural communication through the cerebral cortex is thinking neurophysiology. Connectionist neural networks connect (associate) sensory information from the environment in the (central) association area (technical terminology) of the posterior cerebral cortex. Thereafter, neural information is channeled forward from the posterior lobe into the frontal cerebral cortex to produce more complex connections (associations) in the general, association area of the frontal lobe. Thinking in the association area of the frontal lobe produces complex thoughts and can affect behavior by channeling neural information into the peripheral nervous system. While learning from unique personal experience creates unique individual thinking, substantially common anatomy and physiology create thinking that is similar enough to enable communication between humans. The neurophysiology of the cerebral cortex explains associative thinking and how it produces behavior; this neuroscience is empirical — observable, verifiable and falsifiable.

Substantially common human genetics create substantially common areas of “white matter” and “gray matter” that create substantially common human thinking. White matter has longer myelinated axons that channel neural communication in a genetically predetermined direction; gray matter has shorter, mostly unmyelinated axons that are substantially non-directional. Genetics promote the fixed directional nature of white matter (as well as common fissures and ventricles) that creates substantially common thinking patterns for humans. In contrast to white matter, connectionist networks of gray matter in association areas of the cerebral cortex create unique neural connections based on learning. Learning is a physical process of neurons growing dendrite to connect to other neurons evidenced by empirical observations of environmentally deprived brains having significantly fewer dendrite connections. Learning from unique personal experience produces unique neural interconnections of gray matter in association areas of the cerebral cortex that produce unique individual thinking.

The common flow of neural communication through connectionist neural networks of the
nervous tissue of the cerebral cortex is empirical neuroscience that can be described in more detail. “Primary” sensory information about touch, sight and sound is channeled into the cerebral cortex while “secondary” sensory information about smells and tastes are channeled into the limbic system. “Primary” neural information about touch, sight and sound are directed to different peripheral areas of the posterior cerebral cortex; connecting (associating) these senses creates a basic understanding of the environment. “Secondary” sensory information supports primary sensory information by channeling information about the desirability or undesirability of tastes and smells into the limbic system to affect motivation that in turn affects our understanding of our environment. Primary sensory information flows into the sensory cortexes at the peripheral of the posterior cerebral cortex: 1) information about touch from the somatosensory system is directed through the brainstem and the somatic sensory cortex (posterior of the central fissure) to the superior cerebral cortex, 2) visual information flows through the optic nerve to the visual cortex at the posterior of the cerebral cortex, and 3) auditory information is directed to the auditory cortex at the lateral sides of the cerebral cortex. Primary sensory information is thereafter channeled (by white matter from the sensory cortexes at the peripheral of the posterior cerebral cortex) to the central, association area of the posterior cerebral cortex. The less-directional gray matter of the association area in the central posterior cerebral cortex learns about the environment by interconnecting (associating) primary sensory information while influenced by secondary sensory information. Learning about the environment is a process of physically connecting (associating) sensory information. Thereafter, common neural pathways direct sensory information from the association area of the posterior cerebral cortex forward into the association area in the central area of the anterior cerebral cortex. The frontal lobe is substantially an association area; less-directional gray matter creates more complex interconnections for more complex learning for more complex thinking. Accepted neuroscience describes complex patterns of neural interconnections in the association area of the frontal lobe producing cognition, rationality and consciousness — “executive functions.” Besides producing cognition, neural connectionist networks in the frontal lobe produce behavior when neural information is directed into the motor cortex (anterior of the central fissure) at the superior cerebral cortex. Neural information directed into the motor cortex is channeled by white matter to the peripheral nervous system to stimulate muscles to affect behavior. The empirical neuroscience of the common flow of neural communication through the cerebral cortex explains (associative) thinking and human psychology. The empirical neuroscience of individual neural communication through the cerebral cortex explains unique individual thinking and behavior.

Physiological theory describes tissue physiology as the cumulative effect of cellular
physiology; thus nervous tissue thinking is explained by the cumulative effect of “cellular thinking.”
The tissue neurophysiology of connectionist neural networks is explained by the cumulative effect
of the cellular thinking of neurons “communicating” chemically at their synapses. Cellular thinking
(neuron cells communicating at their synapses) explains tissue thinking (connectionist neural
networks) that explains the associative thinking of the brain; molecular physiology is superfluous
to understanding the brain.

The empirical neuroscience of the general flow of neural communication through the
cerebral cortex explains current mysteries surrounding physical trauma to different areas of the
brain. Brain damage to Wernicke's Area generally causes a loss of language comprehension
because this area is directly in the path of the general flow of auditory information from the
auditory cortex to the association area of the cerebral cortex. Consistently, brain damage to
Broca's Area generally causes a loss of speech motor skills because this area is directly in the
path of neural information into the area of the motor cortex that affects the muscles of the mouth.
Since the brain is a living organ that learns from individual experience, the exact location of these
functions varies slightly between individuals. Consistently, since the brain is a living organ that
learns from experience, some rehabilitation is possible by developing new connectionist networks
that bypass areas damaged by trauma.

The structure (anatomy) and function (physiology) of the nervous tissue of the cerebral
cortex explains thinking — associative thinking. Complex associations in the association area of
the frontal lobe create complex thoughts including rational consciousness; complex thoughts
create complex behaviors when neural information is directed into the peripheral nervous system.
This basic empirical neuroscience is obscured by established theory that seeks to support a
complex neo-rational mental principle. The advanced technology of brain scans is often used to
philosophize about a complex, abstract mental process,249 but far less advanced technology
evidences thinking neurophysiology. Rational consciousness and all thinking that is neither
rational nor conscious is associative thinking that is explained by basic empirical neuroscience —
observable, verifiable and falsifiable.
Appendix C
Explaining Popular Psychology Theories

Natural Psychology explains human psychology with the binary science of motivated-thinking: *the mental process seeks the strongest associative thought and behavior seeks well-being as a function of unique personal experience*. Consistently, this appendix explains popular psychology theories about learning, cognition and memory in terms of associative thinking for the future, the present and the past respectively. This appendix also explains states of consciousness, perception, and intelligence based on understanding all thinking as seeking the strongest associative thought. Moreover, this appendix explains personality, language and social psychology consistent with all behavior seeking well-being through associative thinking as a function of experience. Natural Psychology explains complex and abstract psychology theories with a unified, comprehensive new psychology paradigm.

Popular theories about learning, cognition and memory are understandable in terms of associative thinking for the future and about the present and the past respectively.

Popular learning theory generally accepts associative thinking but erroneously attempts to adapt it to cultural expectations for a complex neo-rational mental principle. Behavior science proves that learning is a function of associative thinking with behavior conditioning as explained in Chapter I. Learning is produced by forging new physical interconnections between neurons in association areas of the cerebral cortex as a function of experience. Popular learning theories of "observational learning" and "modeling" affirm learning based on associative thinking. But popular behavior science theories of an "orienting response", "habituation" and "sensitization" attempt to adapt associative learning to a complex neo-rational mental principle. Consistently, behavior science fails to understand behavior reinforcement when it does not promote personal well-being. "External reinforcers" are often confusing and thereby counterproductive for toddlers and preschoolers; for adults, reinforcers are counterproductive when they are perceived as manipulative. More generally, popular learning theory is problematic in advocating mythical innate learning mechanisms; this reduces critical respect for a child's autonomy and learning "readiness." Moreover, it is problematic for our children that any below-average pace of development at any time may be pathologized. Since 1980 when autism was first introduced in the DSM, popular learning theory is an increasing obstacle to early childhood learning and development with its focus on instruction over modeling. This has caused an "epidemic" of
“autism spectrum disorder” that CDC statistics documented at 1:2500 in 1980 and now at 1:54 in 2020. Better surveying of a “spectrum” and better resources may account for a 50% increase but the 50-fold increase is undeniably a radical change. Prior to 1980, children predominately learned through modeling by generally playing independently while their parents worked (in and outside the home) and went to school for instruction. Parents were generally more self-centered and spent far less time teaching their children; young children predominately modeled behavior with far more autonomy and independence. Autism was not a learning disorder in the DSM until 1980 because it hardly existed before then; learning was far less competitive for substantially greater career opportunities. In contrast to learning predominately through modeling; current learning theory substantially developed after 1980 with a problematic emphasis on early instruction. Excessive instructions, directions and especially corrections can teach children to doubt their own judgment; this causes significant learning problems (at any age). Increasingly pressured learning environments (especially for boys) accounts for radically different estimates of autism rates from 1:27 in Hong Kong to 1:3,333 in Poland. Besides an increasingly problematic learning theory, poor physical health also inhibits learning; unfortunately, the general health of children is deteriorating from environmental toxins, sedative life styles, and food of substantially lower nutritional value. Our culture has become significantly more stressful while learning theory that was designed to assist is based on an erroneous, problematic thinking theory. The result has been a radical increase in autism; parents are rarely directly to blame. Current learning theory correctly advocates “connectionist neural networks” in a “parallel distributed processing model” (PDP) but harms the community by erroneously attempting to adapt PDP to an innate neo-rational mental principle.

Natural Psychology explains popular cognition theory (and thinking theory) about reasoning, problem-solving and decision-making with the more fundamental, encompassing theory of associative thinking. Human reasoning, problem-solving and decision-making describe the glorious process of associating broadly relevant neural information about a subject to attain the most inclusive answer for “sound judgment” and “good sense.” In contrast, popular cognition theory attempts to explain cultural expectations for a complex neo-rational mental principle without structural and functional neuroscience support. Popular cognitive theory philosophizes about a complex, ambiguous neo-rational mental process that “interprets” environmental stimuli after “encoding”, “storing”, and “decoding” information. But popular descriptions of “biologically based mechanisms” are only hypothetical constructs; they do not identify a structural and functional process — empirical neuroscience. Consistently, the popular cognitive theory of “parallel distributive processing” seeks to adapt the empirical neuroscience of connectionist
networks to an erroneous philosophy of a complex neo-rationalism mental principle. Thus Jean
Piaget's classic cognitive theory describes as nativist common age-related experiences that
fostered well-being for Euro-American culture during his era. Subsequently, a multitude of
popular new cognition theories have been proposed but their sheer numbers and lack of
comprehensiveness should discount their individual value. Popular cognitive theories seek to
understand a complex, ambiguous mental principle of neo-rationalism; in contrast, associative
thinking explains cognition and all thinking with elemental empirical neuroscience.

Popular memory theory generally accepts associative thinking while erroneously
attempting to adapt it to cultural expectations for a complex neo-rational mental principle (similar
to learning theory). In contrast, Natural Psychology explains recall consistent with all thinking;
recall describes a thought about the past that is the strongest associative thought from the
previous thought or from sensory information. Thoughts strongly associated with emotional well-
being or emotional suffering have stronger neural network connections and are thus easier to
recall; conversely, thoughts about mundane experiences have weaker connections and are
difficult to recall. It is also more difficult to establish and recall memories when sick, tired or
distracted by stronger thoughts compared to when healthy and concentrating. Extremely
traumatic experiences are often unavailable for recall when the strongest associative thought is
about fear and panic rather than orienting details that promote recall. Consistent with learning
through associative thinking, our understanding of the world takes time to develop; thus during
the first couple years of life, thoughts are too abstract for recall. The "parallel distributed
processing" (PDP) model correctly identifies the empirical neuroscience of memory (consistent
with all thinking) but erroneously seeks to adapt PDP to a complex neo-rational principle. Popular
"context-dependent memory theory", "state dependent theory", "mood–congruent theory", and
"encoding specificity principle theory" correctly describe recall enhanced by various methods that
rely on associative thinking. The most popular method of promoting recall is "mnemonics";
mnemonics establishes a chain of stronger intermediate associations to promote recall. The
mnemonics method of "loci" was developed by ancient Greeks to promote recall by connecting
physical locations with associative thoughts. Recall based on associative thinking is evidenced
when music that was the background of an emotional experience is heard after an intervening
period; it prompts recall of the experience and related emotions. Consistently, Marcel Proust
became famous for his description of the rush of memories and emotions produced by sights and
sounds associated with emotional childhood experiences. Current memory theories of "sensory
memory", "short-term memory" and "long-term memory", "declarative memory" and "procedural
memory" seek to describe memory in terms of a neo-rational mental process. These popular
memory theories about “encoding”, “storage” and “retrieval” are socially constructed in support of a neo-rational mental principle and are without structural and functional neuroscience support. In contrast, associative thinking explains all thinking; humans recall previous thoughts and experiences when they are the strongest associative thought.

All thinking is associative thinking regardless of whether it is for future thoughts (learning) or about present thoughts (cognition and thinking) or previous thoughts (memory). While scientists accept associative thinking for learning and memory, associative thinking explains all thinking. In contrast to popular theory that lacks structural and functional neuroscience support, Natural Psychology explains learning, cognition and memory with accepted empirical neuroscience.

Consistent with learning, cognition and memory; states of consciousness, perception, and intelligence are also explained by associative thinking.

Popular theory about states of consciousness attempts to explain cultural expectations about a complex neo-rational mental principle (without structural and functional neuroscience support); in contrast, Natural Psychology explains states of consciousness consistent with mainstream medical science. Medical science describes the mental states of consciousness, semi-consciousness and unconsciousness as a function of the quantity of sensory information entering the brain. Consistent with medical science, consciousness describes sufficient information from the senses to create orientation to the environment and self-awareness. Human mental acuity has advanced to a subject of species’ pride for good reason; our intellectual achievements are astounding. No other species approximates our intellectual achievements including our self-awareness. Consciousness can be elevated by the sympathetic nervous system that has evolved to foster survival during threats; stress hormones temporarily increase sensory stimuli and neurophysiological energy. Conversely, fatigue and physical sickness reduce neurophysiological energy and thereby lower the level of consciousness. Consistent with medical science, semi-consciousness describes reduced information entering the brain during deep relaxation and sleep. Meditation, acupuncture and hypnosis are relaxation techniques that approach semi-consciousness. Sleep promotes abstract associative thinking because it lacks sufficient sensory information to orient to the environment; associative thinking becomes too abstract for recall during deeper sleep. The “stages” of sleep arbitrarily categorize degrees of reduced sensory information received by the brain. Consistent with medical science, unconsciousness describes a greater restriction of sensory information to the brain during comas; comas evolved to promote deep physical rest (inactivity) to aid recovery from trauma.
Consistently, anesthesia causes unconsciousness by restricting the flow of sensory stimuli to the brain. The unconscious mental state of a coma is physical and real; this contrasts Feud’s philosophy of repressed memories as “unconscious” or “subconscious.” Freud developed the theory of the “subconscious” to explain traumatic experiences that are often unavailable for recall because their painfulness is a stronger association than orienting details. Different “states of consciousness” have been ascribed to mind-altering drugs that affect brain operation but this description is socially constructed philosophy rather than (medical) science. In contrast to erroneous psychology theory, “consciousness”, “semi-consciousness” and “unconsciousness” are explained by associative thinking and by the medical science focus on the quantity of information entering the brain.

Popular perception theory attempts to explain cultural expectations about a complex neo-rational mental principle but it lacks structural and functional neuroscience support. Perceptual illusions are confusing based on a neo-rational mental principle but are readily explained by associative thinking — unusual associations that defy rationality. A multitude of illusions are entertaining because they contradict our understanding of our rationality but are easily understandable as unusual associations. Current perception theory erroneously describes sensory stimuli being “encoded”, “organized” and later “interpreted” in a process that supports cultural expectations. “Parallel distributive processing” (PDP) in perception theory describes connectionist neural networks while erroneously attempting to adapt this empirical neuroscience to a neo-rational mental principle. “Visual perception”, “principles of organization”, “principles of components”, “depth perception”, “motion perception” and “perceptual constancies” attempt to explain unusual associations with popular neo-rationalism. Consistently, “synesthesia” is readily explained with associative thinking: sensory information from one sense has unusually strong associations with another sense based on unique individual experience. But understanding perception theory has far more importance than explaining illusions, associative thinking can also explain the critically important perception of pain. Pain is understandable as a learned association of physiological energy deficits during infancy. Hence there is a wide variation of pain reported among people with similar injuries based on unique individual experience. Consistently, some members of non-western cultures do not experience pain from rituals that would cause excruciating pain to most others. Pain epidemics are similarly explained based on the perception of pain as a function of associative thinking from experience; pain can be “contagious” just like “laughter can be contagious.” Pain is an extremely negative emotion that is directly associated with emotional suffering; thus, most pain perception can be understood as substantially “psychosomatic.” Pain is an expression of emotional suffering and fear as much as
nerves (and pressure), and often only an expression of emotional suffering and fear. Understanding pain and further research based on understanding pain will promote a revolutionary change in health care across a wide range of medical fields. Muscle weakness perception is similar to pain perception and can similarly be substantially psychosomatic. There are a multitude of popular perception theories whose sheer numbers and lack of comprehensiveness should discount their individual value. In contrast, associative thinking readily explains perception illusions and the more important perception of pain and muscle weakness.

Popular intelligence theory supports cultural expectations for an innate neo-rational mental principle but it lacks structural and functional neuroscience support. Current intelligence theories describe levels of mental acuity that typically remain relatively consistent over a lifetime (based on the importance of formative learning and the cumulative effect of learning) and tag them as innate. More environmental stimuli, an unconflicted focus and more motivation produce better mental functioning. Consistently, minimal environmental stimuli during formative years produce mental retardation as documented in studies of early American orphanages and Romanian orphanages in the 1990’s. Since the quality of environmental stimuli has improved over the last couple centuries, mental acuity and I.Q. scores have also improved; this contradicts a genetic basis for intelligence. Intelligence tests also play to the cultural biases of test creators so they have traditionally expressed institutional racism in the community. Intelligence tests are biased tests that address the rate and range of thinking but do not address the quality of thinking. Many of the most “intelligent” people in society cause the community the most harm; intelligence does not address the “quality of character.” Consistent with other psychology theories, popular intelligence theory is also problematic in attempting to adapt associative thinking to innate neo-rational mental mechanisms. Current intelligence theory harms the community when pathologizing substantial natural thinking problems caused by stress. There are a multitude of popular intelligence theories whose sheer numbers and lack of comprehensiveness should discount their individual value. In contrast to popular theory that seeks to promote an innate concept of intelligence, intelligence (mental acuity) is generally a function of motivation, focus, and environmental stimuli (especially during formative years). Natural Psychology explains intelligence with associative thinking and elemental empirical neuroscience.

Popular theories about states of consciousness, perception and intelligence support cultural expectations for a nativist, complex neo-rational mental principle but lack structural and functional neuroscience support. In contrast, Natural Psychology explains all thinking as a function of associative thinking based on empirical neuroscience.
Besides explaining popular psychology theories about thinking, Natural Psychology also explains popular theories about behavior. Personality theory, language theory and social psychology are behaviors that are understandable consistent with all behavior: they seek well-being based on associative thinking from unique personal experience.

Popular personality theory attempts to explain cultural expectations for a complex, nativist neo-rational mental principle but lack structural and functional neuroscience support. In contrast, personality is explained by habitual behavior patterns that seek well-being based on associative thinking. Since learning is cumulative, habitual behavior patterns that create a “personality” are learned early in life and are typically slow to change significantly over time. Carl Rogers advocated a classic personality theory that describes the behavior motivation of seeking well-being in terms of “self-actualization.” Seeking the well-being of “self-actualization” is a common motivation based on western cultural experiences but ignores the common motivation of eastern cultures to seek well-being through “collectivism” (“communalism”). Abraham Maslow proposed another classic western personality theory in terms of a “hierarchy of needs”; he described common age-related social goals that typically fostered well-being for Euro-American culture during his era. Consistently, Erik Erikson proposed a classic personality theory in terms of common age-related social experiences that typically fostered well-being for Euro-American culture during his era. Subsequently, several new personality theories including the “cognitive-effective personality system”, the “five factor model” and the “16-PF model” attempt to explain personality based on a neo-rational mental principle but are without structural and functional neuroscience support. Freud, Rogers, Maslow, Erikson and others describe personality theory based on western culture and an imagined neo-rational mental principle while ignoring eastern cultures. The multitude of popular personality theories should discount their individual value; in contrast, personality is explained by habitual behavior patterns that seek well-being based on associative thinking.

Popular language theory attempts to make language consistent with cultural expectations for a complex neo-rational mental principle but lack structural and functional neuroscience support. In contrast, Natural Psychology explains language consistent with all other behaviors that seek well-being based on associative thinking. People learn language to communicate with others because communicating typically promotes well-being. Conversely, people have difficulty learning language or using language when it does not promote well-being. Toddlers do not need an innate “language acquisition devise” to understand and communicate through language; this is an abstract concept without structural and functional neuroscience support. “Syntax” is learned
through associations that vary depending on the language and culture; consistently, the embattled "linguistic relativity hypothesis" describes how language shapes the way that we think.\textsuperscript{259} Noam Chomsky’s rejection of language as a function of behavior conditioning is based on misunderstanding the motivation for behavior and behavior conditioning. In contrast to classical behavior science, motivation is not based on a nativist (innate) concept of well-being.\textsuperscript{271} The multitude of popular language theories and their lack of comprehensiveness should discount their individual value. In contrast, our behavior motivation to seek well-being as a function of experience explains language consistent with all behavior that seeks well-being base on experience.

Popular social psychology theory attempts to explain social psychology consistent with cultural expectations for an innate, complex neo-rational mental principle but lack structural and functional neuroscience support. In contrast, Natural Psychology explains social psychology consistent with all behavior; it seeks well-being through associative thinking as a function of personal experience. Since humans seek emotional well-being, we generally like familiarity.\textsuperscript{260} Since fairness typically promotes well-being, people generally dislike hypocrisy and feel “cognitive dissonance” when their behavior does not match their ideals. There are a wide range of behaviors that promote well-emotional well-being depending on experience; within some youthful social groups, emotional well-being is promoted through risk-taking — a cavalier attitude about danger. Humans generally seek the emotional well-being of social support and affirmation promoted through conformity to social norms that fosters reciprocal social support. Sociocultural psychology describes the wide variation of cultural norms that promote well-being based on associative thinking as a function of experience — cultural experience. While ethnocentricity generally fosters the well-being of social support, it can also foster prejudice against outsiders as a function of some lived experiences. Unfortunately, physical dominance over others can similarly be a conditioned association of well-being that reduces negative emotions of powerlessness. Although some cultures produce significantly more altruism than others,\textsuperscript{261} human experience increasingly fosters empathetic and altruistic behaviors. The multitude of popular social psychology theories and their lack of comprehensiveness should discount their individual value; in contrast, seeking well-being as a function of experience explains social psychology.

Popular theories about personality, language and social psychology support cultural expectations for a neo-rational mental principle but lack structural and functional neuroscience support. In contrast, Natural Psychology explains personality, language and social psychology consistent with all behavior that seeks emotional well-being through associative thinking based on
unique individual experience.

Natural Psychology is a comprehensive theory of thinking and behavior; the mental process seeks the strongest associative thought and behavior seeks well-being as a function of singular individual experience. Natural Psychology is a unified explanation of popular theories about human psychology including learning, cognition and memory; states of consciousness, perception and intelligence; and personality, language and social psychology. Self-knowledge has rightfully been a human goal; it will channel a brighter future.
Appendix D
Explaining Popular “Mental Disorders” Theory

“Mental disorders” pathologize painful sadness (social, economic and/or spiritual distress) and other natural “problems in living”; they are natural reactions to (and expressions of) traumatic experiences and traumatic environments. Psychiatry discounts the severity and impact of traumatic experiences and environments while pathologizing them. Emotional pain and physical pain are sensed similarly by the brain; humans are sensing organisms as well as thinking organisms. Current theory does not adequately describe the painfulness of emotional suffering; a real disease cannot be more painful. Sadness is the naturally expression of the physiology of sad experiences; it expresses our humanity rather than a disease, a brain malfunction, “mental illness” or “mental disorder.” Anxiety is the natural reaction to distressful experiences, depression is the natural reaction to depressing experiences, and sadness is the natural reaction to sad experiences; all emotions are natural. Besides pathologizing painful sadness (anxiety and depression), “mental disorders” also pathologize natural non-conforming, non-productive and/or disruptive behaviors — natural problems in living including problematic coping styles. Psychiatry pathologizes natural non-conforming, non-productive and/or disruptive behaviors with a wide net that includes those who do not present “distress or disability” — a defining element of pathologized sadness. Psychiatry frequently pathologizes behaviors that seek short-term relief from emotional suffering; psychiatry fails to appreciate the painfulness of emotional suffering and the related desperation for relief. Broadly construed, compulsions are behaviors strongly associated with well-being from lived experience that are counterproductive based on their problematic frequency and/or intensity. “Mental disorders” pathologize painful sadness (emotional suffering) and other natural problems in living (predominately compulsions, broadly construed).

After Freudian theory was abandoned in 1980, psychiatry pathologized all of its DSM “syndromes” (behavior patterns that express emotional suffering and other natural problems in living) without any underlying theory. In contrast, Natural Psychology is a unified explanation of common DSM “mental disorders” based on natural science theory. This appendix is a comprehensive explanation of popular “mental disorders”: “anxiety disorders” (“general anxiety disorder”, “phobic disorder”, “panic disorder”, and “obsessive-compulsive disorder”), “eating disorders”, “substance use disorders”, “mood disorders” (“major depressive disorder”, “dysthmic disorder”, “bipolar disorder”, and “cyclothymic disorder”), “somatic symptom disorders”
(“conversion disorder”, “hypochondrias disorder”, “somatization disorder”, and “pain disorder”), “dissociative disorders” (“dissociative amnesia/fugue” and “dissociative identity disorder”), “personality disorders”, and “schizophrenia spectrum disorders.”

The anxiety “disorders” of “general anxiety disorder”, “phobic disorder”, “panic disorder” and “obsessive-compulsive disorder” describe presented symptoms of anxiety from distressful experiences. Humans are sensing organisms as well as thinking organisms; anxiety is the feeling of aversion associated with distressful experiences. The painfulness of anxiety evolved as strong motivation for behavior to avoid distressful experiences that can threaten species survival. Anxiety describes the emotion of distress; in contrast to popular theory that intellectualizes emotions, emotions are feelings and anxiety “disorders” express the physical painfulness of emotional suffering. Psychology defines anxiety as an “apprehensive anticipation of future danger or misfortune”; this expresses the fear of continued emotional suffering but not its painfulness. Popular theory pathologizes anxiety as disproportionate to a stressful “event” but the term “event” erroneously implies a common perspective. Natural Psychology explains all anxiety as natural and proportionate to uniquely distressful personal histories and life circumstance. Anxiety is a natural emotion that is directly proportional to the distressfulness of personal experience. Unfortunately, it is difficult to imagine the experiences of the less fortunate in the community and more difficult to imagine pain greater than has been experienced. Broadly construed, “general anxiety disorder” pathologizes general presented symptoms of anxiety from distressful experiences.

Broadly construed, “phobic disorder” describes presented anxiety caused by specific distressful experiences (contrasting “general anxiety disorder” that describes anxiety caused by generally distressful experiences). “Social anxiety disorder” and “agoraphobia” are two common expressions of social anxiety pathologized as “phobic disorders.” “Social anxiety disorder” generally pathologizes anxiety about social interaction where people feel vulnerable to personal attacks. “Agoraphobia” similarly pathologizes anxiety about social interaction but in the context of being away from a more comforting home environment — a familiar, more controlled environment. Most other “phobic disorders” pathologize specific fears typically learned through traumatic experiences during childhood (that are often unavailable for recall). Phobias are as numerous as the number of unique personal experiences that can be associated with extreme emotional distress.262 Atypical lived experience can produce a traumatic fear of anything including books (“bibliophobia”), snow (“chionophobia”), and flowers (“anthophobia”).

Broadly construed, “panic disorder” pathologizes a sudden onset of painful anxiety caused
by “triggers” — experiences strongly associated with emotional suffering. “Panic attacks” are frightening and debilitating based on the current paradigm that considers anxiety pathologically irrational; in contrast, associative thinking readily explains this sudden, natural onset of anxiety.

“Obsessive-compulsive disorder” pathologizes obsessions that describe problematic thoughts strongly associated with either emotional well-being or emotional suffering (broadly construed) and compulsions that describe problematic behaviors strongly associated with emotional well-being (broadly construed). Thoughts about emotional suffering or imagined solutions to emotional pain become obsessive when their frequency or intensity become problematic. The subjects of obsessive thoughts are as numerous as the number of traumatic experiences that can cause emotional suffering or the number of imagined reliefs. Music obsessions are relatively common; “earworms” describe comforting songs or tunes that become distressing from “running through a person’s mind” with problematic frequency. While obsessive thoughts fixate on either emotional suffering or relief from the suffering, compulsions are problematic behaviors strongly associated with emotional well-being. Compulsive behaviors are behaviors strongly associated with well-being from personal experience that relieve emotional suffering while becoming problematic (counterproductive or disabling) based on frequency or intensity. Compulsive behaviors are as numerous as the number of problematic behaviors that can be strongly associated with emotional well-being especially during childhood. Ritual behaviors are common compulsions; control of personal space, orderliness and predictability can promote increased emotional well-being to counter feelings of powerlessness. Compulsive cleaning and hand washing, compulsive hoarding, compulsive checking of door locks and important papers, compulsive sex (“sexual addiction”), compulsive yelling in public (“Tourette's syndrome”), compulsive mimicking of other's statements (“echolalia”), compulsive working (“workaholism”), compulsive shopping (“shopaholism”), compulsive gambling, compulsive gaming (“video game addiction”), compulsive exercising, compulsive stealing (“kleptomania”), compulsive fire setting (“pyromania”), compulsive avoidance of sidewalk cracks and compulsive violence are all behaviors strongly associated with well-being from unique individual experience (especially during formative years). Compulsive behaviors are increasingly attractive in direct proportion to the strength of their association with emotional well-being and to the intensity of emotional suffering. Conversely, compulsive behaviors are avoided in direct proportion to the likelihood of negative consequences and the perceived distressfulness of the consequences. People generally conceal the severity of compulsive behaviors since unwanted attention and social criticism causes distress. Current theory pathologizes compulsions in terms of a malfunctioning “impulse control mechanism” but this advocacy of a neo-rational mental principle lacks structural
and functional neuroscience support. The wide range of obsessions and compulsions are perplexing within the context of the current paradigm that supports a neo-rational mental principle but readily explained with associative thinking.

Popular psychology theory narrowly defines compulsive behaviors; broadening the definition promotes a unified explanation of a wide range of undesirable behaviors including “eating disorders.” Broadly construed, “eating disorders” are compulsive behaviors — counterproductive or disabling behaviors strongly associated with emotional well-being from unique personal experience. Compulsive eating (“eating disorder”) describes emotional well-being associated with eating, compulsive dieting (“anorexia nervosa”) describes emotional well-being associated with dieting (and being slim), and compulsive eating while compulsively dieting (“bulimia nervosa”) describes emotional well-being associated with both eating and being slim. Since people avoid social criticism, the fatigue and physical sickness caused by “eating disorders” are typically concealed or their severity denied. It is unfortunate that fatigue and physical sickness from eating compulsions cause additional distress that can promote a downward cycle of worsening dietary problems.

Consistently, “substance use disorders” are explained as compulsions — problematic behaviors strongly associated with well-being from unique personal experience. In contrast to current theory that separately pathologizes eleven different types of abused substances, the following unified explanation of compulsive substance abuse describes common threads. Popular theory describes “addictive” behaviors as “hijacking” the “reward-reinforcement pathway” but this advocacy of a neo-rational mental process is without structural and functional neuroscience support. Abused substances are generally neurotoxins that initially promote emotional well-being followed by a physical energy drain from the body’s effort to rid itself of the toxin. Substance use becomes substance abuse when the frequency or intensity of substance usage becomes problematic or when substances are illegal. Substance abuse is promoted by a drug’s physically desirable sensation on the brain as well as emotional well-being fostered by associated positive social experiences. Caffeine and nicotine are stimulant drugs that are widely accepted for adults; youthful consumption generally has additional positive associations of “coming of age.” Stimulant drugs temporarily increase physical energy and related emotional well-being; hence, stimulates like ADHD drugs and tobacco generally have a calming effect. Conversely, alcohol is a socially-accepted depressant drug that causes reduced physical exertion and a related increase in brain energy; increased brain energy is experienced as increased emotional well-being. Alcohol intoxication can foster a more confident disposition (“liquid courage”); the self-confidence of intoxication can also promote an “angry drunk” about feeling
intimidated when sober. Opiate drugs produce an extremely desirable physical effect on the brain; consistently, opioid addiction has increased dramatically since doctors made opiate prescriptions more common. Unfortunately, drug use typically becomes a cycle of abuse when fatigue and sickness from consumption motivate seeking short-term relief from more toxins. Compulsive substance abuse causes substantial physical sickness that is typically concealed or discounted to deflect social criticism. “Substance use disorders” are perplexing to the current paradigm; in contrast, seeking well-being through associative thinking from individual experience explains the wide range of compulsive behaviors.

The “anxiety disorders” of “general anxiety disorder”, “phobic disorder”, “panic disorder” and “obsessive-compulsive disorder” are perplexing to the current paradigm; in contrast, understanding thinking as associative and behavior as seeking well-being explains anxiety and the wide range of anxiety “disorders.”

While “anxiety disorders” express the anxiety of natural emotional suffering, “mood disorders” focus on the behavior that is produced by the anxiety — either heightened or reduced motivation. Distressful experiences produce painful anxiety that evolved to increase motivation (through hormones) for behavior to avoid distressful experiences to promote survival. The painful anxiety of distress experiences produces increased motivation for survival that is currently pathologized as the “mood disorders” of “hyperactivity” and “mania.” Increasingly distressful childhood experiences is naturally promoting increasing activity in children over the last several decades that popular theory pathologizes as “hyperactivity disorder” and “attention deficit disorder”; natural childhood energy and boredom are often similarly pathologized. The hyperactivity that desperately seeks to resolve painful anxiety and depression is pathologized as “mania.” The desperation of “mania” to reduce extreme emotional pain explains behaviors that are often frantic and dangerous, and appear poorly conceived. “Mania” is explained by the painfulness of extreme anxiety and the related desperate hopefulness for relief.

Distressful experiences produce painful anxiety that evolved to increase motivation for behavior to seek emotional well-being (and thereby survival); anxiety is naturally suppressed with depression when options for relief appear distant or hopeless. Depression expresses hopelessness; it is a natural process of slowing (suppressing) the speed of thinking when thinking is painful and solutions appear remote or unachievable. In contrast to popular theory that pathologizes depression while discounting depressing experiences, depressing experiences naturally cause depression. Depression fosters a loss of interest in usual activities because usual activities have ceased to provide emotional well-being — the motivation for behavior.
Depression causes fatigue because a lack of motivation for behavior (an expectation that behavior will promote well-being) makes behavior difficult; popular theory pathologizes the natural fatigue of depression as “chronic fatigue syndrome.” Popular theory including Aaron Beck’s cognitive theory erroneously describes depression as disproportionate to lived experience because current theory has little appreciation for the lived experiences of others. Popular depression theory provides cover for a wide range of abusers and abusive environments that naturally promote depression. “Major depressive disorder” and “dysthymic disorder” describe different degrees of depression consistent with current theory that focuses on details that differentiate emotional suffering and pathologizes them separately.

Broadly construed, “bipolar disorder” and “cyclothymic disorder” describe different degrees of pathologized behaviors that alternate between the natural moods of hopeless depression and the desperate hopefulness of “mania.”

Natural Psychology also explains diverse problems in living like “sleep disorders”, “somatic symptom disorders”, “dissociative disorder”, and “personality disorders.”

Broadly construed, “sleep disorders” pathologize natural problems with rejuvenating sleep. The natural anxiety of emotional suffering causes an inability to relax — a necessary element of sleep; this natural neurobiology is pathologized by popular theory as “insomnia disorder.” Conversely, the hopelessness of depression causes a lack of motivation that promotes fatigue, decreased activity and sleep; this is pathologized by popular theory as “hypersomnia disorder.” During depression, extra sleep may also be considered desirable for preserving energy until options for increased emotional well-being avail themselves. “Nightmare disorder” and “sleep terror disorder” pathologize distressful thoughts during different stages of sleep. Nightmares describe emotional suffering during lighter sleep when dream imagery is more available for recall; “night terrors” occur during deeper sleep when thinking is more abstract and rarely available for recall. “Night terrors” often occur during physical sickness when illness causes substantial emotional suffering and deep sleep. “Narcolepsy” describes a rapid onset of relaxation and sleep at undesirable times; it is triggered by experiences atypically associated with extreme relaxation from atypical individual experience. Associative thinking explains natural problems with sleep that are pathologized by popular theory.

Broadly construed, “somatic symptom disorders” generally describe natural physical sensations that are considered symptoms of pathology because they occur during emotional suffering and are associated with the distress. Most health problems are naturally substantially “psychosomatic”; “normal” body sensations often become associated with health problems based
on emotional suffering and fear. “Hypochondriasis disorder” and “somatization disorder” describe different degrees of fear about health — a natural source of concern for those experiencing misfortune. “Body dysmorphic disorder” describes an obsessive fear of body defects whereby a normal physical attribute (while probably not admired) becomes a focus of obsession. Consistently, “conversion disorders” like “aphasia” and “visual agnosia” generally describe obsessive fears about deafness or blindness that are stronger associative thoughts than sensory information from sight and sound. “Pain disorder” is similar to “hypochondriasis disorder” and “somatization disorder” whereby fear becomes associated with normal physical sensations; physical sensations are perceived as painful when feared. Consistently, a fear of physical problems causes pain and weakness currently pathologized as fibromyalgia and ALS. While “somatic symptom disorders” predominately describe natural physical sensations considered symptoms of pathology based on fear, occasionally they are associated with well-being. “Conversion disorders” can occasionally be a subconscious strategy for reducing emotional suffering by eliciting sympathy or avoiding feared experiences. In contrast to popular theory that is perplexed by “somatic symptom disorders”, Natural Psychology explains them with associative thinking from personal experience.

Broadly construed, “dissociative disorders” describes dissociating from distressful thoughts and experiences in a “subconscious” effort to distance oneself from them. People generally distance themselves (dissociate) from their undesirable thoughts and behaviors; “dissociative disorders” pathologize dissociations that are more extreme in response to extremely undesirable thoughts and behaviors. “Psychogenic amnesia” pathologizes disassociation from an intensely painful experience or life circumstance. Although “anterograde amnesia” (the inability to form new memories) can be caused by physical trauma to the hippocampus or amygdala, most amnesia describes thoughts and experiences that are too painful for recall. The painfulness of extremely traumatic experiences is often the strongest associative thought to the exclusion of orienting details about the experience; this causes problems with recall. Consistently, amnesia is selective; behaviors that promote well-being like the general life skills of language, driving, or personal hygiene are rarely lost to amnesia. “Psychogenic fugue” pathologizes a flight to avoid an intolerably painful social environment consistent with all behavior that seeks emotional well-being. “Dissociative identity disorder” describes different social schemas that seek relief from different types of traumatic environments. Hence Frank Putnam’s “trauma-dissociation theory” is correct in describing new personalities occurring in response to severe stress; this contrasts most trauma theory that discounts the distressfulness of traumatic environments. Although “dissociative disorders” are perplexing to current theory, Natural Psychology provides a unified
explanation based on the mental process seeking the strongest associative thought and behavior seeking well-being based on (distressful) personal experience.

Broadly construed, “personality disorders” pathologize habitual behavior patterns deemed undesirable or “antisocial”; consistent with all behavior, they seek emotional well-being especially initially during formative years. “Personality disorders” pathologize non-conforming, non-productive and/or disruptive behaviors in support of existing social structures. Since learning is cumulative and behavior is habitual, problematic “personality traits” typically originate in childhood and are difficult to change.

Besides explaining “mental disorders” that express natural anxiety and depression; Natural Psychology also explains the “mental disorders” of “sleep disorders”, “somatic symptom disorders”, “dissociative disorder”, and “personality disorders.”

“Schizophrenia spectrum disorders” pathologize the most extreme sadness (emotional pain) from the most traumatic experiences and environments; they express the most extreme anxiety and depression. “Schizophrenia spectrum disorder” is often identified with late adolescence because the transition from dependent child to independent adult can be unusually difficult. This transition is especially difficult when learned expectations for adulthood are not supported by the environment or by the skills required for achieving expectations. However, the intense emotional suffering expressed in “schizophrenia” can occur anytime extreme misfortune causes extreme, painful emotional suffering.

The behaviors categorized in “schizophrenia spectrum disorder” become understandable when considering extreme emotional suffering as based on associative thinking from traumatic experiences and environments. The delusions of schizophrenia generally express a history of intensely distressful personal experiences that promote false inferences about the environment. Intensely distressful experiences explain the “delusions of persecution” (paranoia), “self-condemnation delusions”, and “grandiose delusions.” “Paranoid delusions” express a natural defensiveness about the source of unbelievable misfortune; it often emanates from being the target of cruel childhood “jokes” and other real conspiracies. We do not live in a mythical world of universal kindness and goodness. “Self-critical delusions” express intense self-criticism about the cause of extreme misfortune in support of learned socialization that predominately blames individuals for their distressful experiences. “Grandiose delusions” seek a self-image that can resolve an intensely painful emotional crisis when there are no better options and emotional pain dominates attention to the exclusion of critical thinking. Consistently, the theory of “inappropriate affect” is understandable with an appreciation of the perspective of
emotional sufferers. An “inappropriate affect” becomes logical when appreciating that it is natural for people experiencing extreme misfortune to feel sad (jealous) when considering others experiencing good fortune. Conversely, people experiencing extreme misfortune typically feel isolated in their misery and are naturally happy (comforted) to hear about others similarly experiencing misfortune (“misery loves company”).

Natural Psychology also explains the delusions of hallucinations; consistent with all thoughts, hallucinations are the strongest associative thoughts to the previous thought or sensory stimuli. Hallucinations generally describe how extreme emotional suffering can dominate thinking as well as sensory information that orients to “consensus reality” for Euro-American culture (while they are accepted and common in some other cultures). Auditory hallucinations are dissociated “sub-vocalizations” that are often intended to motivate behavior to seek emotional well-being through “motivational” criticism. Consistently, visual hallucinations generally describe extreme emotional suffering (or physical sickness) affecting the perception of the environment and “consensus reality” (in Euro-American culture). Over time, auditory and visual hallucinations can become accepted and therefore promoted by less suffering. Hallucinations are considered a natural response to physical pain (torture or extreme fatigue or sickness) but are a pathologized response to emotional pain. Besides hallucinations produced by drugs, auditory and visual hallucinations are typically abstract associations of emotional suffering in Euro-American culture.

Until the latest DSM was published in 2013, “schizophrenia spectrum disorder” was divided into four sub-types: 1) “paranoid schizophrenia disorder”, 2) “disorganized schizophrenia disorder”, 3) “catatonic schizophrenia disorder”, and 4) “undifferentiated schizophrenia disorder.” First, “paranoid schizophrenia disorder” pathologized intense emotional suffering when presented symptoms predominately describe an extreme defensiveness about the cause of the suffering. Second, “disorganized schizophrenia disorder” pathologized intense emotional suffering when presented symptoms predominately describe the natural failure to maintain a train of thought while distracted by emotional suffering. Third, “catatonic schizophrenia disorder” pathologized intense emotional suffering when presented symptoms of motionlessness or stereotyped movements express extreme depression; people naturally become socially withdrawn when their social interactions cause distress. “Catatonia”, “loss of volition”, “poverty of speech” and the “blunted” affect are all natural expressions of extreme depression. Consistently, people experiencing extreme emotional suffering naturally have a “poverty of speech” when they are unable to express themselves, do not believe that anyone can understand them, and/or do not believe that anyone cares what they say. Fourth, “undifferentiated schizophrenia disorder” pathologized intense emotional suffering when presented symptoms did not predominately
express paranoia, disorganized thinking or depression. The new DSM-5 removed these four previous categories of “schizophrenia spectrum disorder” because overlapping boundaries caused substantial problems with reliability.

“Schizophrenia spectrum disorders” pathologize the most extreme emotional suffering from the most traumatic experiences and environments; they express the most extreme anxiety and depression. All symptoms of “schizophrenia spectrum disorder” describe natural, acute emotional suffering based on associative thinking from extremely traumatic experiences.

Behavior naturally seeks emotional well-being as a function of personal experience; “mental disorders” predominately express painful emotional suffering — sadness. “Mental disorders” express painful social, economic and/or spiritual distress and other natural problems in living including coping styles deemed disabling (non-conforming, non-productive and/or disruptive). Psychiatry ostensibly contends that sadness is unnatural regardless of traumatic experiences and traumatic environments. Psychiatry discounts the severity of traumatic experiences and traumatic environments in support of existing social and economic structures. Psychiatry ostensibly advocates Pollyanna and a fairy tale world of goodness and fairness; it can easily be understood as a secondary police force to control dissent of the marginalized and disenfranchised. Broadly construed, anxiety expresses the painfulness of emotional suffering from distressful experiences that is often suppressed with depression when solutions seem distant or non-existent. Strategies intended to reduce emotional suffering often include compulsive behaviors — behaviors strongly associated with emotional well-being from individual experience that are deemed problematic or counterproductive. Natural Psychology explains all popular theories about “mental disorders” with a unified, comprehensive new paradigm of human psychology based on accepted science theory and accepted empirical neuroscience. Emotional suffering is the natural expression of distressful experiences; embracing our humanity will introduce a more civil, caring world.
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